



Laboratory & Diagnosis



Official Journal of Iranian Association of
Clinical Laboratory Doctors

Vol. 7, No. 30, Supplement Issue

April 2016



Iranian Scientific Association of
Clinical Laboratory Doctors



CONGRESS ABSTRACTS



Laboratory & Diagnosis

Official Journal of Iranian Association of Clinical Laboratory Doctors
Supplement issue for IQC 14

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Message of Congress Chairman



Dr. Behzad Poopak
DCLS, PhD

Greetings and respect to scientists, professors, students and all audiences who are active in the field of medical diagnostics. The Islamic Republic of Iran is proud to announce that with the assistance of Allah Almighty and the effort of scientists and scholars a new opportunity is provided for holding one of the greatest scientific events in the field of clinical laboratory; the 14th National Congress and 9th International Congress on Quality Improvement in Clinical Laboratories.

We hope that achievements of the congress in the field of science and trade will contribute to improving the quality of laboratory services in the country and attract the attention of senior authorities associated with clinical laboratory including Ministry of Health and Medical Education, Health Reference Laboratory, Ministry of Cooperatives Labour and Social Welfare and in particular insurance organizations, to the field to which more than 70% of diagnosis and decision makings of doctors are linked.

In the Congress that will be held from April 19-22, topics in the context of science and trade will be discussed in the form of academic topics, scientific - technical meetings and workshops.

We hope that with the help of God, we can provide an opportunity to address serious problems of trade, exchange up to date knowledge, benefit from results of previous studies, and create interdisciplinary interaction with scientists, professors, experts and students in an intimate setting and away from any biases, in order to get the congress objectives.

The attempts of all our partners from Iran and other countries who help us with planning and running the congress, are appreciated.

Message of Congress Secretaries



Dr. M. R. Bakhtiari
DCLS, PhD



Dr. A. Sadeghitabar
DCLS



Dr. M. Taghikhani
PhD

The congress on Quality Improvement in Clinical Laboratories is a symbol of convergence and solidarity of the society of laboratory experts in Iran. This great medical event is a sign of unity of the hard working associates in the field of clinical laboratories.

Every year coincided with the Medical Laboratory Professional day of Iran, groups from across the country participate in a great international event and share results of their efforts in all areas of basic, professional, clinical, managerial and ethics in an intimate atmosphere.

Today more than ever, the society of laboratorians in Iran requires unity and cooperation among its members. The Iran healthcare reform plan has been a turning point in the occurrence of challenging developments in the field of medical services in Iran. The necessity of development and establishing this plan based on opinions of experts in each field is obvious. The company of all laboratorians in the form of science and guild associations will be done exclusively through the cooperation and convergence of all groups to make key decisions in the laboratory field of the health reform plan. The quality improvement congress will be an opportunity to discuss and exchange views on scientific and guild issues affecting the clinical laboratories.

The scientific agenda of the 14th congress has been designed in the form of twenty-two topics covering useful academic and applied lectures and workshops.

Hereby, researchers and scholars are kindly invited to present their researches in the format of the congress tracks.

With the assistance of Allah Almighty, the knowledgeable and educated persons involved in laboratories will steer the ship of medical diagnosis to the shore of health with their serious participations in the social arenas, reflected in the quality improvement congress.

We hope The cooperation of professors and scholars in the field of clinical laboratory as well as collaborative effort of the congress secretaries, a great and glorious gathering of laboratorians will occur.

Congress Main Topics

Main Topics	Coordinator	Page
Chronic Kidney Diseases and Clinical Laboratory.....	Dr. R. Mohammadi, DCLS, PhD	13
Clinical Laboratory Accreditation	Dr. M. Vanaki, DCLS	18
Economy and Improvement of Laboratory Services	Dr. A. Sadeghitabar, DCLS	22
Ethics and Law in Clinical Laboratory	Dr. M. J. Soltanpour, DCLS	27
Futures Studies of Clinical Laboratory	Dr. S. Mirab Samiee, DCLS, PhD	30
In Vitro Diagnostics Technology Management (IVD)	Dr. S. Mahdavi, DCLS	34
Laboratory and Biochemistry Research	Dr. L. Hosseini Gohari, PhD	38
Laboratory and Hematology Research	Dr. M. Hamidpour, PhD	43
Laboratory and Immunology/Serology Research	Dr. A. Gharebaghian, DCLS, PhD	47
Laboratory and Microbiology Research	Dr. N. Rahimi Fard, DCLS, PhD	53
Laboratory and Noncommunicable Diseases (NCD) Surveillance System.....	Dr. S. M. H. Hashemi Madani, DCLS	58
Laboratory and Point of Care Testing (POCT)	Dr. Gh. R. Hamzehloo, DCLS	61
Laboratory and Reproductive Medicine	Dr. A. H. Zarnani, DCLS, PhD	64
Laboratory and Surveillance System for Communicable Diseases	Dr. H. Gholami, DCLS -Dr. M. M. Gouya, PhD	67
Laboratory and Transfusion Medicine	Dr. A. A. Pourfatollah, PhD	71
Laboratory and Viral Opportunistic Infections	Dr. M. Parsania, PhD	75
Laboratory Challenges in Adrenal Gland Disorders (hyper- and hypocortisolism)..	Prof. A. Esteghamati, MD	78
Laboratory Sciences Education: Technical Officer (Technician) Supply.....	Dr. Y. Pourkhoshbakht, DCLS	82
Molecular Diagnostics in Clinical Laboratories	Dr. B. Poopak, DCLS, PhD	83
Risk Management in Laboratory	Dr. S. M. Boutorabi, DCLS, PhD	87
The Clinical Laboratory and Immunodeficiency Disorders	Dr. M. Mahdi Mohammadi, DCLS, PhD	90
The Role of Leadership and Middle Management in Laboratory.....	Dr. H. Dargahi, PhD	95

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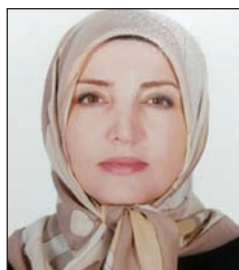
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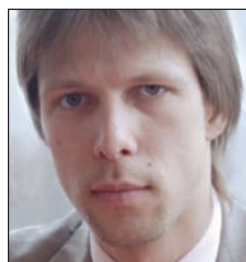
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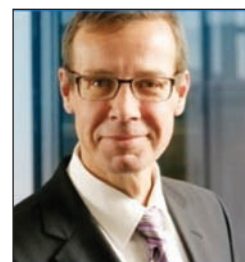
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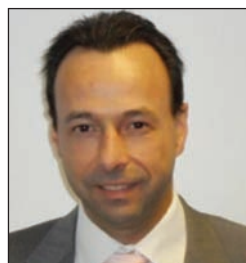
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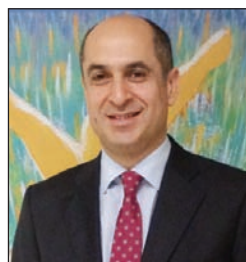
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ABSTRACTS

**The 9th International & 14th National Congress
on Quality Improvement in Clinical Laboratory**

Oral Presentations



Chronic Kidney Diseases and Clinical Laboratory O1 – O7

Chronic kidney disease (CKD) is a common condition with an increasing prevalence. The two main causes of chronic kidney disease are diabetes and high blood pressure, which are responsible for up to two-thirds of the cases. Diseases that cause inflammation and damage to the kidney's filtering units or glomerulonephritis, are the third most common type of CKD. Polycystic kidney disease and kidney malformations are the other causes. Early detection of CKD can help prevent the progression of kidney disease to kidney failure. At present, serum creatinine, which is used to estimate glomerular filtration rate (eGFR) along with urine creatinine, which are used to measure GFR, are the most commonly used marker of renal function. On the other hand, abnormal urinary excretion of albumin and total protein is a highly sensitive indicator of glomerular disease. So, standardization of creatinine, albumin and protein measuring methods are essential in screening and monitoring of CKD. Recognizing the factors associated with CKD progression enables high - risk patients to be identified and given more intensive treatment if necessary. Serum cystatin C is an alternative biomarker of kidney function, but it is not routinely used in clinical practice. Combination of this biomarker and common biomarkers, including serum creatinine along with urine protein an albumin might improve screening and monitoring of CKD.

Dr. R. Mohammadi, DCLS, PhD



O1

Prevalence of Cadmium Nephropathy among Cigarette Smokers in Isfahan

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Background and objective: In smokers, cigarette smoke is one of the main sources of the cadmium exposure. Cadmium nephropathy is characterized by low molecular weight proteinuria, proximal tubular – dysfunction persists until renal failure supervenes. The primary objective of this study was to assess the risk of development of cadmium nephropathy among the people who are smoking. **Patients and methods:** This project included 90 apparently healthy men smokers and 50 nonsmokers volunteers as a control group matched by age and working status. Urinary cadmium levels were determined by using graphite furnace atomic absorption spectroscopy and creatinine clearance were calculated by Cockcroft – Gault formula. Serum creatinine, urea, urine analysis, and β_2 microglobulin were determined for all participants. **Results:** Urinary cadmium levels were significantly higher among cigarette smokers and there was a statistically significant correlation between cadmium concentrations in urine and the number of cigarettes smoked per day. There was a significant positive correlation between urinary cadmium level and urinary β_2 microglobulin and a highly significant negative correlation between creatinine clearance and urinary cadmium level among both smokers and nonsmokers. Smokers had a mean urinary β_2 microglobulin more than 310 $\mu\text{g}/\text{gcr}$ which indicates that smoking is associated with early cadmium nephropathy. **Conclusion:** According to the data presented here, smoking can be a cause of cadmium nephropathy.

Keywords: Cadmium Nephropathy, Smokers, Urinary Cadmium, Creatinine

O2

Standardization of Serum Creatinine Assay

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Chronic kidney disease (CKD) is a major public health problem. The measurement of creatinine in serum is one of the most frequently requested tests in clinical laboratories. Over the last decade, its importance in the evaluation of kidney glomerular function has been further increased by recommendations issued by nephrology societies for using equations to estimate the glomerular filtration rate. The gold standard isotope-dilution mass spectrometry (IDMS) method, for creatinine assay, is both expensive and cumbersome for routine use. On the laboratory side of patient care, the routine creatinine measurement in the past was performed using Jaffe method, which was known to have interference from chromogens. A number of studies have shown that the currently used different creatinine assays have clinically significant differences from lack of standardization and presence of known interfering substances in serum and urine. The creatinine assays over the years have changed from the original Jaffe to kinetic Jaffe and then to enzymatic methods. Currently, to provide more accurate results and uniformity among laboratories, the assays are being recalibrated by manufacturers to provide IDMS equivalent results for both kinetic Jaffe and enzymatic methods. The standardization of creatinine testing worldwide will assist health care providers better identify and treat chronic kidney disease (CKD), enabling the prevention or delay of kidney failure, thus improving patient outcomes. By standardizing serum creatinine measurements, there is an expected improvement in the detection, diagnosis and treatment of chronic kidney disease by reducing inter-laboratory bias and yielding more accurate estimates glomerular filtration rate.

Keywords: Creatinine, Standardization, Measurement

O3

Problems in Interpretation of Laboratory Tests in the Patients with CKD

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The National Kidney Foundation (NKF) recommends that people who are at high risk be screened for kidney disease to detect it in its earliest stages. It is recommended two tests, including urine albumin and estimated glomerular filtration rate (eGFR), to screen for kidney disease. Urine albumin may be done on a 24-hour urine sample, or both urine albumin and creatinine can be measured in a random urine sample and the albumin/creatinine ratio (ACR) can be calculated. It is recommended ACR as the preferred test for screening for albumin in the urine (microalbuminuria). Imprecise 24 hours urine collection is a leading cause for replacing of this test by ACR in a random urine sample. False positive and false negative results may be observed in non-renal situations. While urinalysis and urine total protein are not as sensitive as urine albumin for detecting kidney damage, these tests give fewer false signals of kidney damage (such as hemoglobinuria- or myoglobinuria or light chains). A blood creatinine test or possibly a cystatin C test is performed in order to calculate the eGFR. With progression of chronic kidney diseases (CKD) creatinine is more secreted by proximal tubules and colon, so eGFR may be higher than the real GFR. Creatinine levels can be estimated by the colorimetric Jaffe reaction as well as by enzymatic methods, high-performance liquid chromatography (HPLC) and the gold standard isotope dilution mass spectrometry (IDMS). Despite known assay interferences, the Jaffe method remains the most commonly used method due to convenience and cost-effectiveness. Serum creatinine is also influenced by muscle mass, sex, age, diet and race. The main limitation of cystatin C immunoassay determination lies in validating and standardization of the test to allow for comparisons. On the other hand, serum cystatin C is higher in different physiological and pathological conditions. Despite restrictions eGFR based on serum creatinine is still the gold standard for evaluation of kidney function.

Keywords: Chronic Kidney Disease, Creatinine, Urine Protein

O4

Evaluating Performance of Creatinine Measuring Methods in Iran According to Results of External Quality Assessment Program

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Introduction: Chronic kidney disease (CKD) is a common condition with an increasing prevalence. Early detection of CKD can help prevent the progression of kidney disease to kidney failure. At present, serum creatinine along with urine creatinine are the most commonly used marker of renal function. In this study we evaluate performance of creatinine measuring methods in Iran by comparing reported laboratory results with recommended total allowable errors (TEa), during External Quality Assessment Program (EQAP). **MATERIAL AND METHODS:** During nineteenth to twenty first runs of EQAP (EQAP-19 to EQAP-21), October 2014 to July 2015, three commercial quality control samples were sent to 1207, 1226, and 1291 laboratories which used five common creatinine kits in Iran, including Pars Azmon, Pishtaz Teb, Audit, Man, and Bionik. Target values for each peer groups were calculated. Performance of each laboratory was determined according to two different TEa, including $\pm 17.8\%$, according to recommended chosen coefficient of variation (CCV%) of 8.9% by Reference Health Laboratory of Iran and $\pm 7.6\%$ recommended by National Kidney Disease Education Program (NKDEP). **RESULTS:** With TEa of $\pm 17.8\%$, about 85%, 85%, and 88% of participant laboratories had acceptable performance during EQAP-19, EQAP-20, and EQAP-21. respectively. But when this evaluation was performed according to TEa of $\pm 7.6\%$, acceptable results decreased significantly to 51%, 47% and 53%, respectively. **Discussion:** This study showed that about 50% of reported results are unacceptable according to NKDEP. This failure may be due to selection of unsuitable analytical kit, improper use of analytical kit, and problems in reporting results. In either cases, improvements of performance of creatinine measurements is necessary.



O5

Creatinine Measurement: Comparison of Results of Five Commonly Used Kits in Iran

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Introduction: Results of serum and urine creatinine measuring is commonly used in establishing glomerular filtration rate (GFR) which is useful in screening, staging and monitoring of chronic kidney disease. So agreement between results of different serum and urine creatinine measuring methods and kits is critical in medical decision making. **Material and Methods:** During February and March of 2016, creatinine concentration of 97 patient's serum samples and 100 patient's urine samples were measured by five commonly used kits in Iran, including Pars Azmon, Pishtaz Teb, Audit, Man, and Bionik. Results of each kit compared with total mean results by using paired t-test and linear regression. Clinically acceptable limits were calculated according to one third of CLIA total allowable error (TEa) of 15% for creatinine measurements. **Results:** For urine samples, all kit results showed good correlation ($r > 0.975$) with total mean results. But this correlation was smaller ($r > 0.80$) for serum samples. In paired t-test analysis, all results showed significant difference with total mean results. This difference was also significant according to clinically acceptable limits. **Discussion:** Serum or urine creatinine results to be clinically useful, analytical errors of their measurements should be maximally up to TEa. According to results of this study these errors are more than TEa. So, standardization and improvement of serum and urine creatinine methods and kits is necessary.

Keywords: Chronic Kidney Disease, Creatinine

O6

Evaluating Performance of Urine Protein Measuring Methods in Iran According to Results of External Quality Assessment Program

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Introduction: Chronic kidney disease (CKD) is a common condition with an increasing prevalence. Abnormal urinary excretion of protein is a highly sensitive indicator of glomerular disease. So, urine protein measuring plays a critical role in the screening and monitoring of CKD, and analytical performance of its measuring method must be acceptable. In this study we evaluate performance of urine protein measuring methods in Iran by comparing reported laboratory results with recommended total allowable errors (TEa), during External Quality Assessment Program (EQAP). **Material And Methods:** During nineteenth to twenty first runs of EQAP (EQAP-19 to EQAP-21), October 2014 to July 2015, three freshly prepared commutable urine protein quality control samples were sent to 913, 932, and 990 laboratories which used five common urine proteins kits in Iran, including Pars Azmon, Pishtaz Teb, Darman Kave, Ziest Chem, and Bahar Afshan. Target values for total group and also for peer groups were calculated. Performance of each laboratory was determined according to two different TEa, including $\pm 20\%$, according to recommended chosen coefficient of variation (CCV%) of 10% by Reference Health Laboratory of Iran and $\pm 10\%$ used by Royal College of Pathologists of Australia Quality Assurance Program (RCPA QAP). **Results:** With TEa of $\pm 20\%$, about 25%, 46%, and 42% of participant laboratories had acceptable performance during EQAP-19, EQAP-20, and EQAP-21, respectively. But when this evaluation was performed according to TEa of $\pm 10\%$, acceptable results decreased significantly to 14%, 23% and 26%, respectively. In comparison to total group mean, mean bias% of all five peer group kits were less than 6.0%, which is acceptable according to TEa $\pm 20\%$. **Discussion:** This study showed that more than 50% of reported results are unacceptable for clinical use. This failure may be due to selection of unsuitable analytical kit, improper use of analytical kit, and problems in calculating or reporting results. In either cases, improvements of performance of urine protein measurements is necessary.



O7

Urine Protein Measurement: Comparison of Results of Five Commonly Used Kits in Iran

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Introduction: Results of urine protein measuring is commonly used in establishing severity of chronic kidney disease (CKD). So agreement between results of different urine protein measuring methods and kits is critical in medical decision making. **Material and Methods:** During February and March of 2016, protein concentration of 80 patient's urine samples were measured by five commonly used kits in Iran, including Pars Azmon, Pishtaz Teb, Darman Kave, Ziest Chem, and Bahar Afshan. Results of each kit compared with total mean results by using paired t-test and linear regression. Clinically acceptable limits were calculated according to one third of total allowable error (TEa) of 20%. We also establish limit of quantitation (LoQ) of each kit, according to TEa. **Results:** All kit results showed good correlation ($r > 0.990$) with total mean results. In paired t-test analysis, there was no significant difference between mean of all kit results and total mean. But linear regression showed significant y-intercept deviation for Pishtaz Teb and Ziest Chem results, and also significant slope deviation for Pishtaz Teb and Darman Kave results. Mean of all kit results were in clinically acceptable limits. LoQ for Pars Azmon, Pishtaz Teb, Darman Kave, Ziest Chem, and Bahar Afshan kits were 89, 56, 63, 60, and 30 mg/L, respectively. **Discussion:** Acceptable paired t-test results do not rule out presence of systematic error. In spite of no significant difference between mean of all kit results, y-intercept and slope of regression analysis indicated systematic error for some kits. According to TEa of 20%, LoQ results showed that measuring of urine protein at low concentration (average, less than 60 mg/L) is not reliable which has no clinical significance.

Keywords: Kidney Disease, Urine Protein



Clinical Laboratory Accreditation O8 – O13

It is in the interests of patients, of society, and of governments that clinical laboratories operate at high standards of professional and technical competence, for the following reasons:

- 1- Decisions about diagnosis, prognosis and treatment are frequently based on the results and interpretations of laboratory tests, and irreversible harm may be caused by erroneous results.
- 2- Users of clinical laboratory services (both patients and clinicians) may not have sufficient technical knowledge to allow them to determine whether a laboratory operates at a satisfactory level.
- 3- Patients, and to a lesser extent clinicians, may have no choice about the laboratory to be used.
- 4- Laboratory testing can be expensive and the patients, insurance organizations, or governments who pay for testing expect the laboratory to provide valid information.
- 5- It is in the interests of competent laboratories that their competence is verified through a process of inspection, comparison against appropriate standards, and public affirmation of their good standing.

Dr. M. Vanaki, DCLS

O8

Criteria for Good Laboratory Practice

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Clinical laboratory for demonstration of their good practices shall to have some criteria. Implementation and use of general and special standards have a very important role for improvement of these criteria. Thus the flowing criteria can be indicators that who much coherent is a laboratory with good practices. The flowing criteria introduced in this field: 1- Quality improvement criteria 2- Personal and patient safety improvement criteria 3- Personal competence criteria 4- Satisfactory improvement of medical laboratory coordinator criteria 5- Maintain of healthy environment criteria 6- Improvement of social responsibility criteria Thus, use of these criteria by medical clinicians, that all of them is related of national and international standards can be commercial and scientific for implementation of standards in IRAN.

Keywords: Criteria, Clinical laboratory, Accreditation

O9

The Purposes of Clinical Laboratory Accreditation & Effectiveness Implementation

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Summery: It is in the interests of patients, of society, and of governments that clinical laboratories operate at high standards of professional and technical competence, for the following reasons: 1- Decisions about diagnosis, prognosis and treatment are frequently based on the results and interpretations of laboratory tests, and irreversible harm may be caused by erroneous results 2- Users of clinical laboratory services (both patients and clinicians) may not have sufficient technical knowledge to allow them to determine whether a laboratory operates at a satisfactory level 3- Patients, and to a lesser extent clinicians, may have no choice about the laboratory to be used 4- Laboratory testing can be expensive and the patients, insurance organizations, or governments who pay for testing expect the laboratory to provides valid information 5- It is in the interests of competent laboratories that their competence is verified through a process of inspection, comparison against appropriate standards, and public affirmation of their good standing.

Keywords: Accreditation



O10

Addressing Laboratory Errors in the United States: The Legal Basis for Preventing Laboratory Errors and Ensuring They Don't Re-Occur

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U.S. laboratory laws, known as the “Clinical Laboratory Improvement Amendments” or CLIA, assign legal responsibility for all aspects of lab operations to the Laboratory Director. The Lab Director is required to implement and monitor a “Quality Systems” program to prevent lab error, and to fix lab errors, and to ensure they don’t recur. Once an error is made, the Lab Director must immediately take remedial actions to address possible patient harm. The Lab Director must then build into Quality Systems a way to prevent the recurrence of the error, and monitor to ensure it doesn’t recur. Among the remedial actions the director will take is training and monitoring of lab personnel. Depending on the cause and seriousness of the problem, the director may have to take further steps to ensure that lab personnel don’t repeat the error. For very serious errors, the U.S. legal system, including government regulators, law enforcement agencies, and lawsuits may be brought into play. Dr. Tempske will describe how the U.S. laws work to prevent errors, address errors once they happen, and prevent future errors. He will also describe lab error cases he investigated while managing the Regulatory Compliance Program” for the State of California Laboratory Licensing Agency.

Keywords: Preventing Laboratory Errors

O11

Audit Challenges

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The standardization of delivering laboratory services has four basic building blocks, first the center that would be accredited, second the institute that manages auditing, third communicated standards and finally the auditors that perform all these processes. Auditing is the most difficult and important among the mentioned factors because it depends a great number of individuals that come from different beds of education, culture and experience. To categorize the problems that auditing will face with, we can examine it in the following aspects: The available auditing in the offices of laboratory works in medical universities The scarcity in insufficiency of auditors compared with the labs that are under the coverage is the most significant challenge of this group that with the varied responsibilities they cannot overcome this bulk of work. These persons due to the mentioned reason and insufficient and stable salary mainly have no incentive for work because they have no support from their superior authorities. The available auditing in guilds and associations The colleagues working in these associations have joined these institutes with different motivations and the community is not homogeneous and harmonic and chiefly have no academic or practical background and thus they don’t have enough cognitive knowledge of their environment and therefore they leave the auditing group along the course or they don’t finish the educational courses. The associated challenges in laboratory audits The range and variety of our labs are pretty extensive and their structure is independent in some cases, and in other cases they are dependent, some of them are governmental and some of them are private, a number of them work under another institute like army, these varieties procrastinate the process of standardization because they are not even culturally, economically and politically. The challenges of communicated standards What has communicated as standards is based on ISO 15189 and making that indigenous and in some cases like standards of physical space, it has some incongruities and troubles and its troubleshooting is quite hard. Altogether these problems create perplexities and hinder the progressive process of standardization in Iran.

O12

Accrediting of Clinical Laboratories in Alborz Province (Experience Rreporting)

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After the announcement of national standards of medical laboratory by national reference laboratory how to implement and deploy of standards was the main challenges ahead. In Alborz province, we decided to use all the existing capacities in the public and private sector for the implementation of this standards. first of all we held six training courses for standards requirements for medical laboratory experts. That their number amounted to 125 people. The people in each course participants were organized in teams of three person and four laboratory audited as a part of training course. then the participants received auditing certificate. Then we select 21 person of this auditors. and organized them in 7 teams. We send them to audit the laboratories. Our accreditation potential significantly increased, but we faced some problems too including Data protection Eliminating conflicts of interest How to pay for the audit team, and so on We are going to have a review on this experience in this paper.

O13

Accreditation Challenges in Iran Laboratories and Suggestions for Removing Them

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Accreditation is a systemic and valid evaluation process and monitoring activity method through an identical standard and integration of laboratories development in country. Worries in the most of the world about quality of laboratory services lead to comprehensive emphasize on accreditation. Accreditation is based on standards of quality management system and technical requirements that is essential to get competence for laboratory activities and acquiring determined competence is necessary and important for professional laboratory specialists. There are four factors that exist in accreditation system: 1- Accreditation bodies 2- Auditors 3- Standards 4- laboratories. Efficiency of accreditation depends on used Standards, actual audits and auditor's competence. Nowadays in our country for accreditation of medical system, we should consider important issues: the system ability for providing medical needs and rights of patient, economic system position reasonability and the system ability for providing confidence of insurer organization to keep insured interest. In this paper we reviewed implementation, maintenance and improvement challenges of accreditation and made suggestions to remove these challenges in main factors of accreditation.



Economy and Improvement of Laboratory Services O14 – O19

Four fundamental factors affecting the provision of laboratory services and their quality include: human resources, equipment, kits and laboratory consumables, and finally physical space. Quality control and monitoring of these factors through external quality control trainings, as well as assessment and standardization, can guarantee their efficiency improvement and optimal performance in the field of laboratory services. The impact of economic factors on these quality processes is obvious. The impact of economic factors on these quality processes is obvious. In other words, economy has a quite clear and direct impact on the quality of laboratory services.

A proper planning for documenting laboratory services that covers all factors influencing the service provision and subsequently determining final price for the desired service, based on these factors, can be a correct basis for determination of tariffs for laboratory services.

In this session, experts and scholars will try to discuss the most important factors affecting the laboratory services and also to evaluate the role of economic factors in this regards.

Dr. A. Sadeghitabar, DCLS

O14

Comparison of Laboratory Situation before and after the Implementation of Healthcare Reform

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Background and Aim: Implementation of healthcare reform with the aim of improving health services and significant reduction in healthcare costs has provided satisfaction of patients and visitors who refer to hospitals. Unfortunately, the project performing, for which has been allocated great costs and vast publicity caused to reduce both laboratory staff motivation and quality of laboratory services, due to its deficiencies Methods: The laboratory staffs were questioned on laboratory services quality before and after the transformation of the health survey and the results were compared. Results: The results showed that the lack of attention to the essential requirements of the laboratory (staff and equipment) will have a negative effect on the quality of laboratory services. Conclusion: The main weakpoints of the project in the laboratories of hospitals include: 1) Along with performance the transformation plan, and subsequently manifold increase in referring people to laboratories, required manpower however hadn't increased. It would have a negative impact on the quality of testing certainly. 2) Due to Patients increase, it has not been paid attention to the quality and promotion of laboratory equipment. So the equipments don't have acceptable efficiency. 3) Unfortunately, inattentions to economic problems of laboratorians, and unfair fee pays to laboratory staffs result in their disappointment. It consequently reduces the quality of laboratory services. 4) Laboratories accreditation program that ensures the quality of laboratory services has stagnated due to lack of personnel, increasing the number of tests, aging equipment.

Keywords: Laboratory, Healthcare Reformlaboratory, Healthcare Reform

O15

Role of Surveillance in Controlling Test Request and Average Cost in Clinical Laboratories

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Today expenditures on health care sector are more than 5.3 trillion Dollars. Medication and health services are complicated and improve every day. That causes the costs go up. In some under developed countries like Thailand low income does not have any effect on health bud jet. But in many of them people have to pay by themselves (out of pocket) Governments and policymakers must plan and determine vision, mission to use their scarce resources in the best way. SSO (Social Security Organization) as a payer and buyer of health services presents its services in two ways. (Directly and indirectly) In this article I have compared expenses and indicators (such as test requests and average cost) in those two paths and effects of surveillance on expenditures.



O16

A New Approach for Calculating Tariffs of Different Diagnostic Tests

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Introduction: According to the international standards about 70% of medical decisions are based on diagnostic test results. **Paraclinical testing** is a critical part of any health care system. **Methodology:** In this study, 300 laboratory tests were assessed based on the Activity-Based Costing. In all centres prices were based on the 2014 price quote. **Results and findings:** According to the results, overall, tariffs of 2016 should increase by approximately 45%. This amount differs in different laboratory testing groups. The breakeven point for each patient is about 40 patient per day. In other word, there would be an economic loss for a private laboratory, if the number of patients, served daily, is fewer than 40, taking into account the hidden costs. **Conclusion:** With respect to the government's attention to the cost prices of testing, developing a model to make the decision on every year's tariffs, is essential.

Keywords: Cost Price, Laboratory Services, Activity-Based Costing

O17

The Role of Laboratory Economics in People Health

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Special position of Medical Diagnostic Laboratory in contrast with other Para clinic centers, in the field of prevention, diagnosis and treatment of diseases is obvious to anyone. In many cases, Doctors need a Lab. Response for diagnosis. Doctors always ask a quick and right Lab. Response to help them in quick diagnosis of their patient diseases. We can mention laboratory economics as one of the most important factors that have a fundamental role for laboratories to reaching to these purposes. It is obvious that the real and acceptable tariff of laboratories society, right and comprehensive management, sovereignty views such as Ministry of Health, Medical Training and Treatment, the amount of Investment, Regulating Government and private insurances, standardize and other cases are some of the factors that can have significant impacts on Laboratory Economics. The only way for participation and guidance of laboratories for keeping people health is governmental persons attention to laboratory economics that is acceptable by laboratory supervisors by presenting truly and specific services also together with standards and encouraging the recipients of laboratories services Right and reliable Response to patients Quick and expected response to Doctors and patients The possibility of technical supervisor participation in seminars, training workshop for increasing the scientific & practical levels. Technical personnel's Training for increasing scientific and technical quality. The possibility of presenting applied research projects in laboratories especially in the field of laboratory Ways & errors, types of kits, and equipments by technical supervisors for keeping people health. Possibility of installing all testes in most laboratories especially in towns for preventing of time waste and quick response for diagnosis and well-timed treatment. Possibility of replacing modern and up to date equipments for increasing people health.



O18

Documenting Laboratory Services is the Necessity to Achieve the Real Cost of Laboratory Services

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The role of laboratory services is not hidden to anyone. The efficacy of this branch of medical services in prevention, diagnosis and treatment is very specific and vital. The high quality presentation of these services needs provision of the required infrastructures to establish the standards and qualitative equipment and methods. The identification card of laboratory services that is a basis for the estimation of total costs of a test and includes factors effective in presenting a laboratory service. Laboratory kits and equipment, modern facilities, trained human resources, standard physical space, providing support and public processes in admission, sampling and other sections in the laboratories, repair and maintenance, establishment of the quality control processes and ultimately training and development (R&D) are the bases of laboratory services and it is necessary to identify each of these factors' economic value and contribution to deliver better services and determine the real costs of each laboratory service. This process is the identification of the total cost of each laboratory service that is the basis for calculating the tariff of each service. With adding investment profit and also logical profit that has been extracted from delivering these services and also considering health management indicators by tariff authorities, the real tariff of laboratory services are defined and determined. Unfortunately, in our country the basis for determining laboratory services' tariffs has not been according to the identification card and total costs of the test and the tariffs are mostly defined on the basis of approximate estimations and political points. However, in 2015 the identification card and also total costs of these laboratory services were approved and the authorities of the health ministry promised the laboratory specialists community the utilization of these factors to determine factual tariffs. It is obvious that with utilizing the qualitative equipment and providing and allocating enough focus on each factor effective in the process of presenting services, the possibility of attaining standard and high-quality services would be higher. Therefore, the foundation for health level and society health promotion would be firmer and utilization of modern technology and advancements would be feasible in our country.



O19

Comparison of Laboratory Services Tariffs in Afghanistan with the Public and Private Sectors in Iran

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Medical diagnostic tests are performed in laboratories all over the world based on the same methods, elements and tools. In another words, any given test is exerted with same condition in different countries. Following comparative study of laboratory services tariff between Iran and some of middle east, European and American countries, we decided to compare tariffs for these services in Iran with one of the least developed countries in this geographic region. In this study, tariffs for 60 common laboratory tests in public and private sectors were compared with Afghanistan. With regard the fact that the tools and conditions to performing these tests are the same in both countries, hence, we predicted that the reason of tariff differences is due to various infrastructure prices required for testing. In reason for economic factors in Afghanistan Such as human resources, physical space, and especially political point in terms of poverty and lack of development, the government would rather to keep tariffs low like other poor countries. Therefore, it is expected that the sector of health, treatment and laboratory services would follow this policy like other social sectors and services in this country. However, we found an inversely significant difference between the laboratory services tariff in the public and private sectors. Our results show that the laboratory tests tariff in Afghanistan compared to public and private sectors in Iran is higher by 602% and 263% for biochemical tests, and respectively, 416% and 167% for hormones, 794% and 363% for hematology and blood bank, 511% and 216% for Serology and Immunology, 510% and 216% for microbiology. Finally mean of tariff for all test in public and private sectors is higher by 567% and 245% respectively. Here the main question is whether all countries in the world have been wrong in value pricing of laboratory services? Or we've been wrong in determining? And the ultimate question is that effects of this error would be reflected in public health to what extent? Medical diagnostic tests are performed in laboratories all over the world based on the same methods, elements and tools. in another words, any given test is exerted with same condition in different countries. Following comparative study of laboratory services tariff between Iran and some of middle east, European and American countries, we decided to compare tariffs for these services in Iran with one of the least developed countries in this geographic region. In this study, tariffs for 60 common laboratory tests in public and private sectors were compared with Afghanistan. With regard the fact that the tools and conditions to performing these tests are the same in both countries, hence, we predicted that the reason of tariff differences is due to various infrastructure prices required for testing. In reason for economic factors in Afghanistan Such as human resources, physical space, and especially political point in terms of poverty and lack of development, the government would rather to keep tariffs low like other poor countries. Therefore, it is expected that the sector of health, treatment and laboratory services would follow this policy like other social sectors and services in this country. However, we found an inversely significant difference between the laboratory services tariff in the public and private sectors. Our results show that the laboratory tests tariff in Afghanistan compared to public and private sectors in Iran is higher by 602% and 263% for biochemical tests, and respectively, 416% and 167% for hormones, 794% and 363% for hematology and blood bank, 511% and 216% for Serology and Immunology, 510% and 216% for microbiology. Finally mean of tariff for all test in public and private sectors is higher by 567% and 245% respectively. Here the main question is whether all countries in the world have been wrong in value pricing of laboratory services? Or we've been wrong in determining? And the ultimate question is that effects of this error would be reflected in public health to what extent?



Ethics and Law in Clinical Laboratory O20 – O23

A laboratory diagnosis that is in accordance with available knowledge, resources and techniques, is always subject to possible errors in a general sense.

A part of these errors are related to human knowledge that is always limited but developing. Another part is related to equipment, facilities and technology. Furthermore, some of these errors occur due to limited resources in developing and undeveloped countries and finally, some are human errors that are non-compliance with standards and scientific principles of testing.

What do legal bases do in case of occurrence of an error in the diagnosis or the accuracy? What approach do they take and how do they behave with staff and technicians of medical diagnostic laboratories? In case of sharing the responsibility of this error, which authority will take an action and how, in order to save justice?

This topic will be discussed in this meeting in collaboration with the academic members of Law and Ethics department of the Royan Institute and in the presence of medical diagnostic professionals.

Dr. M. J. Soltanpour, DCLS

O20

Clinical Laboratory Accreditation in the United States of America

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The federal government in the United States has the primary role in ensuring quality patient testing through the federal laws known as «CLIA», the «Clinical Laboratory Improvement Amendments». Under federal law, laboratories can be inspected and certified directly by the government, or they can choose instead to be accredited by the «College of American Pathologists». Labs that are «CAP Accredited» are inspected and monitored by CAP members, and the CAP certifies to the U.S. government that the lab meets standards required of all labs. Dr. Tempske will provide a detailed explanation of how CLIA and the CAP Accreditation process ensures quality testing in the U.S., and will also discuss other accrediting organizations, state laws, and provide answers to participant's questions on laboratory accreditation in the U.S. I would also be very much like to make a presentation in Dr.Soltanpour's, «Ethics and Law in the Clinical Laboratory» section and meet colleagues in the legal profession in Iran. I would be glad to participate in panel discussions.

Keywords: Clinical Laboratory Accreditation

O21

“Ghorour” , as a Complementary Islamic Rule of Laboratories’ Liability System

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Last year, I delivered a lecture in the 8th international congress on quality improvement in clinical laboratories in Tehran, about laboratories’ civil liability and emphasized on the key role of a legal-Islamic rule called “Tasbib”. It seems that to suggest a comprehensive legal system based on Islamic perspective, we also need to apply an other rule named “Ghorour”. Based on Ghorour rule, which has an Islamic origin, anyone who temps one other through an action, word or specific situation and consequently imposes some loss to the deceived party, shall bear the burden of civil liability and compensate the loss. If we merely recognize “Tasbib” rule as the sole basis of laboratories’ civil liability, there will be some cases which meanwhile “customs of reasonable people” hold the laboratory responsible for loss, Tasbib rule does not have qualification to lead to such a verdict. To complete the theory that I described earlier, considering both rules of Tasbib and Ghorour together, justifies laboratories’ civil liability wherever customs of reasonable people, regardless of probable fault of laboratory, just relies on it’s deceptive appearance and subsequent public trust imposes burden of liability on laboratories. This study explains function scopes of these two rules as components of a legal liability system.

Keywords: Tasbib, Ghorour, Civil liability, Laboratory



O22

The Role of Fault in the Laboratory Equipment,s Deficiency

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Introduction: Medical developments, simultaneously will promotes laboratory diagnostic instruments. But if a laboratory do not use from updated medical equipments, the patient may expose to risk. The “fault” is a legal term that can be used to justify responsibility for laboratory equipments’ deficiency. Importance of research: There is no organization or tribunal that annually or periodically communicates the list of suitable medical laboratory equipments. Therefore we will need to a criterion that determines appropriate and inappropriate laboratory equipments at any time. Method and materials: This is a documentary study. The Acts, regulations, legal and ethical general principles, can be useful for this field. Results: 1. Fault in legal term includes both failure and excess. Therefore failure to update medical laboratory equipments is a fault. 2. The measure for duty to updating equipments, depends on the trade market; international medical standards; level of scientific developments; and internal facilities and possibilities in the country. 3. If a laboratory failed to prepare appropriate equipments, the damages caused by this deficiency will lead into laboratory’s responsibility. Discussion and conclusion: There is no organization or tribunal that annually or periodically communicates a list of suitable laboratory’s equipments. So estimating suitability of laboratory equipments must perform in the court and on the trial stage. In that time, the court by checking position of trade market; international medical standards; level of scientific developments; and internal facilities and possibilities in the country, decides about equipments suitability. Thus laboratory always will be under court supervision. Moreover the fault is an acceptable measure for this estimating.

Keywords: Fault, Laboratory Equipment, Failure, Default, Laboratory Equipment’s Deficiency

O23

Laboratory and Physician’s Malpractice in the Diagnosis Process

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Medical diagnostic laboratories have a very important role in public health, also the laboratory and physician’s collaboration can be helpful and effectual in diagnoses. However, unfortunately, sometimes there is some faults in diagnosis process. So, in this cases who can be responsible. According to the Civil Law of Iran the medical profession malpractice is any abandonment or not doing one of the essential legal aspect by physician or other medical groups such as laboratory that causes sustain a loss or damage for patient. As the laboratory’s commitment is for result so, except in indirect causality in diagnosis process the fault lies with laboratory. In contrary, according to the Civil Law the physician’s commitment isn’t for result so if there be a fault it doesn’t lie with the physician unless his/her shortcoming proving. So, we can conclude if the physician leads the treatment according to the laboratory’s diagnosis and there be a fault both of them would have been responsible. Unless there wouldn’t have been other ways and technics for helping the physician’s right diagnosis except the laboratory, so in these cases the fault lies with laboratory. And, in any cases with the laboratory’s right diagnosis the physician leads the wrong treatment he/she is condemned.

Keywords: Physician, Laboratory, Patient, Malpractice



Futures Studies of Clinical Laboratory O24 – O29

The topic of future studies of clinical laboratory which focuses on a variety of subjects and content, has not only been novel among the congress' topics, but has not been addressed so far in our health system, too. Subjects including future prospects of economy and investment in clinical laboratories, operation management of clinical laboratory, the role of geographical distribution modelling in the future of clinical laboratory system, climate change and clinical laboratory, rules and regulations related to clinical laboratory networks and views of public and private sectors to them and also the required human resource of future laboratories, will be under the spotlight in this topic of the congress.

Dr. S. Mirab Samiee, DCLS, PhD



O24

Models of Financing and Payment in the Health Insurance Organizations in Iran and Future of Lab Economics

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Methods: This study was cross-sectional studies and literature review using the model of financing health insurance in the world was examined. Then, using various laboratory data and profitability of the most important parameters were measured economics of lab. And finally for future field studies in the laboratory were discussed. Results: Using the results and review of the literature has shown that, there are PAYG, PF and FF models in financing health insurance. PF model is selected as model for Iran. As well as the Mega LAB can be economically that reduces cost price. Conclusion: Policy makers should precise planning to the field of clinical and laboratory studies, especially in the field of lab economics and their future studies.

Keywords: Lab Economics, PAYG, PF, FF

O25

Medical Laboratory Networks: Law and Regulations

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Development of laboratory networks in the field of clinical and public health diagnostic services, above everything, is an economic tool and priority to make quality and timely services accessible in low costs. Resistance of government against increase in medical services tariff, shrinkage of health system financial resources and implementation of utilization management are among the most important drivers for interests in consolidation and developing network arrangements in public and private sectors. This new arrangement and type of relationship between health institutes and medical laboratory requires a different concept and behavior, improved management viewpoint and investment that altogether are new challenges for traditional health system, particularly medical laboratory area. It seems that, in order to reduce the slope of fundamental structural and functional changes to a degree suitable for ease of acceptance by health system from one side and reducing probable damage of transition to a network- based system, from other side, requires new legislation and policy. To create such a platform for change health system policy makers and players must recall service providers, payers and other beneficiaries.



O26

Role of Geo-Modeling in the Future of Medical Laboratory

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Introduction: It is estimated that laboratory results can be the basis of 60% - 70% of medical decisions. In addition to, laboratory diagnosis generated around 10% - 15% of all healthcare costs. Easy access to laboratory services with considering the economic matters is necessary. The balance between two requires the use of scientific methods based on Geographical Information System (GIS). In this study, the role of this system (Geo-modeling) will be discussed in the future of medical laboratories. **Methods:** In this study, 46 articles were extracted with keywords of medical laboratory, GIS, geo-location, foresight and combinations of them. The selection of papers was based on matching them with present study goal. Papers after careful study were summarized and developed for covering research goal. **Results:** Geo-modeling based on GIS with considering the climatic conditions; population composition and density, the demand level for laboratory services can determine the number of required laboratories; spatial distance, how to fit and optimal distribution of them, and type of offerable services. By determining and predicting these items can move forward for creating of integrated network of medical laboratories in the future. **Conclusion:** In today's highly competitive environment and with limited resources, GIS can help to policy-makers and health system managers in allocating the limited resources economically, providing high quality laboratory services, and meet the population needs.

Keywords: Medical Laboratory, Geographical Information System, Geo-Modeling, Foresight

O27

Utilization Management and Future Medical Laboratory

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Utilization of medical laboratory has been negative reputation in clinical medicine, due to the restrictions relating to the insurance industry, but Health care employers are committed to their patients to manage laboratory services and ensure that appropriate services are provided at the right time. By definition, Utilization management in the laboratory, involves selecting the right laboratory tests for the patient or a group of patients at the right time. Reasons for attention to the Utilization management in requesting a test include the following: - Overuse of the test is a potential factor in increasing costs. - There is no meaningful relationship between the frequency of requested tests and quality of care. - Common tests are prescribed illogically more than non-routine tests. - Overuse of testing, increases the likelihood of false positive results The definitions associated with Utilization management in the requesting the test are overusing (Overutilization), underusing (Underutilization) and misuse (Misutilization). In multiple studies, the most common causes of excessive use of test requesting, include the fear of losing a diagnosis, physician's inexperience, pressure from the colleagues, financial interests, practical compulsions (patients), fear of legal penalties and etc. Some strategies to control the requesting of the test, include providing feedback to physicians, education, financial incentives, administrative and structural changes and compiling of clinical guidelines.



O28

Climate Change and Medical Laboratories

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There exists a consensus on climate changes, which are associated with increase in surface temperature, ice melting, rising of the sea level and increase in climate variability, and its impacts on human health. One of the most important challenges raised by climate changes are emerging and re-emerging diseases, particularly in developing countries. There is no doubt that the impacts of climate changes are not limited to emerging and re-emerging diseases and the complexity as well as unprecedentedly make the relevant public health response difficult. Besides the bold role of coordination among all levels of governmental organizations, academies and research centers, private sector and nongovernmental organizations, strengthening and improvement of present disease surveillance system and vector control, establishing new infrastructures and capacities, training of health professionals, development and refinement of pertaining laws, regulations, standards and guidelines and engagement of community are essential. Due to responsive and reactive nature of functions and responses to public health threats and challenges, clinical and public health laboratories have critical role and there is a real need for more focus on their preparedness.

O29

An Overview of Curricular Reforms in the North America in Order to Deliver Better Health Services Since 1765: a Suggestion for Education of Lab Sciences

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The aim of improving curricular models in medical and lab sciences is to deliver better health services. Since 1756 up to now, 5 curricular models have been developed in the North America, which have concluded to fundamental improvement in education of medical sciences. When we look at the driving factors behind all those reforms, there is one factor in common in all of those. It is the discovery of clinical reasoning and decision making processes in expert minds. If those processes are carefully taken into consideration and emulating precisely in the educational process, we would be able to graduate more competent physicians and laboratory experts in the future. In this article, we will see how we would be able to train health care workers who are more competent than their predecessors and better respond to community needs and how more advanced curricular model can assist in achieving more quality diagnostic and therapeutic care in the health system. Also we would review how to restructure the clinical setting to better adapt to more advanced curricular models, thus we would place the physicians and lab experts in a context which enable them to better deliver their services. In summary, in the clinical setting the patients talk about their complaints/syndromes not the name of diseases responsible for complaints. While in the older curricular models the focus of education is diseases organized according to organ/systems of the human being toward the patients presentations. Following such a direction in education is in contrary to the real clinical setting.



In Vitro Diagnostics Technology Management (IVD) O30 – O35

One of the important factors affecting the quality of laboratory services are diagnostics kits and products, as well as the instruments that are used for patient sample analysis. A proportion of these materials and equipment is produced in Iran. However, most of them are still imported from foreign countries. Therefore, important factors such as sanctions and currency price fluctuations have determining roles on availability of these material and equipment.

In this situation, some countries refuse to provide direct services because of the sanctions. Therefore, parts and equipment, necessary for laboratory service provision, are not delivered on time and in a standard condition.

Additionally, large number of manufacturers and importers, as well as different ways of importing goods into the country cause more complexity in this regards.

In this topic, we intend to pay special attention to issues such as rules and regulations of the Ministry of Health and Medical Education and a special consideration for medical laboratories, along with advices from the general manager of equipment department of the Ministry about strategies for the reduction of final costs of kits and equipment.

Furthermore, in this session challenges facing the manufacturing sector in Iran will be discussed to assess domestic products based on the international standards and evaluate the plans to improve the quality of these products in order to reach global markets. Moreover, the extent of domestic market that is dedicated to manufacturers in Iran as well as their expectations from domestic consumers will be discussed.

The Health Reference Laboratory is another major player in this sector that has performed its role during the years by creating specialized committees, developing standards, providing direct services and assessing kits and equipment.

We hope that all strengths and weaknesses of the IVD market are investigated and evaluated in this panel.

Dr. S. Mahdavi, DCLS

O30

The Health Ministry Policy to Regulate the Market of Kits and Laboratory Equipment and Lower Price of Them

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There are many factors affecting the market of in-vitro diagnostic (IVD) devices and products. In this regard, different measures have been taken by Ministry of Health in order to regulate the IVD market. The most important strategies are as follows in brief: Minimizing the total customs duties and commercial benefit of the tariff 38220000 related to raw materials for manufacture of laboratory kits, Allocating of tariffs 30021000, 30062000 and 30063000 with the minimum cost of customs for IVD products in which antigen or antibody is used, such as immunoassay kits, Supporting domestic production of medical and diagnostic devices according to T1, T2 and T3 classification, and also enacting related criteria (document No. QU-WI-12), Creating a competitive atmosphere in order to reduce the price and improve the quality in the market of IVD products through licensing of numerous companies, meanwhile the quality and price of products are continually and precisely supervised, Pricing of IVD products, intended for lay person use, through medical device registration system, for example the call for glucometer device, and In the case of shortage of certain product in the market, Ministry of Health would take action to import mentioned product in order to prevent the price increase and product's shortage.

O31

The Problems and Expectations of the Producers of Laboratory Products

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According to the available standards of producing laboratory diagnosis products, a company needs infrastructures such as proper and appropriate physical space for production as well as suitable human and financial resources. After providing these elements the utilization of high-quality and proper materials and equipment and also standard techniques of production and quality control are of great importance. Following up the principles of good production GMP for the companies producing laboratory products according to a national guideline is being edified and this would obviate the heterogeneous condition in the production process. One of the problems in the producing companies is the lack of skilled human resources so that the necessity for a new academic course titled "specialist of laboratory products production" is felt apparently. Utilization of skilled and professional human resources in top scientific levels in producing companies requires a great deal of basic reviews in a way that they would be allowed to perform and accomplish their commitment periods in so-called companies. This is one of the very objectives of building science-based companies. With respect to the investments of the producing companies, the import of raw materials and availability is of grand significance for the company and the omission of a part of official bureaucracies are necessary to achieve this goal. At the moment edifying the production and quality control standards with the collaboration of producing companies and monitoring organizations to make these processes homogeneous and more assuring for the users of these products is among the expectations of producing companies. The process of quality control is one of the most important and also the most expensive processes in the production that requires the co-operation and aids from the monitoring organizations in provision and availability of control materials. Even though the distribution cycle of the product regarding the national and international requirements is one of the obligations of the producing company, but the collaboration of the monitoring organization would help to increase the quality of this process and thus the quality of the product. Especially the identification of smuggled and distributed products out of the system of producing companies and their legal branches would guarantee the quality of the product.



O32

Control Mechanisms to Prevent the Smuggling of IVD Kit and Equipment

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In general, smuggling of goods has been one of the main problems in Iran during past years. It is no secret that smuggling has destructive effects on economic situation of the country and also it could have more adverse and even irrecoverable effects on public health in the case of health commodities. Accordingly, the product suppliers, regulatory authorities, distributors and consumers of health commodities play a crucial role in this regard. IVD (in-vitro diagnostic) devices are an important section among the health commodities; hence, precise control and continuous supervision on their importation, distribution and consumption are inevitable to prevent smuggling. Although some of the causes of smuggling such as the unemployment rate, exchange rate, subsidy, political issues like sanction, social and cultural reasons and also bureaucratic processes of authorized organizations are out of the scope of authorities of Health Ministry; however, some effective measures have been taken by Ministry of Health such as: Identification and registration of legitimate importer companies, manufacturers, distributors and suppliers of IVD devices. Registration of IVD devices. Tracking, tracing and authentication control system of IVD devices. It is hoped that we (Medical Equipment Department) could continually improve our supervision abilities regarding to the importation and prevention of IVD devices' smuggling with the cooperation of all respective beneficiaries.

O33

Quality and Performance Evaluation of In Vitro Diagnostic Medical Devices at National Level -Iran

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Accurate and reliable clinical laboratory testing is an important component of the disease control and management and access to affordable high quality in vitro diagnostic devices is a fundamental element in reliability of the results. This approach has led to the worldwide adoption of harmonized design and manufacturing requirements for In Vitro diagnostic medical devices that may provide necessary assurance for the device safety and its effective performance. The requirements for this purpose include the entire manufacturing process from raw materials selections to the final products release. The manufacturer means of monitoring their products performance in the market is an essential step as well. Reference Health Laboratory as an authorized office in charge of In Vitro Diagnostics quality and performance evaluation has the responsibility for assessing products conformity to the national quality requirements. In this regard, we will discuss the Reference Health Laboratory current approach which includes the different steps of national in vitro diagnostics registration system, challenges and limitations, as well as the opportunities that may be provided by collaboration between relevant inter and intra- sectoral stakeholders.

O34

National IVD Surveillance System Focusing on Complain Management

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In according to established regulations and administration Medical laboratories, Lab. technical director shall ensure the quality of the test results. Therefore, in case of nonconformities of IVDs, after the trial and ensuring the accuracy of test results, at first he or she should call IVDs Suppliers or providers. Provider is obliged to investigate the problem and if the product defect was confirmed, defective product must be recalled by him. On the other, Lab. technical director should report the problem to University, in the form number 1 (IVD Complaints reporting form) If the problem isn't resolved. After registering the complaint officially, the complaint should be referred to Laboratories affair office of affiliated university. It should investigate the problem as soon as possible and if possible, the product will test in one of the accredited laboratories under the supervision of that office, by using control samples or reference materials. Laboratories affairs office is bound to manage all complaints submitted every month and register in the form number2 and send them to "Health reference laboratory Department" and "Monitoring and evaluation of equipment and medical supplies Department". If the received complaints, proportionate to the problem, based on the subject and impotence, they will track, and if necessary, laboratory evaluation is performed. The results judge by complaints workgroup of Health ministry and referred to the competent authorities for legal proceeding.

O35

Define Problems Expectations, Manufacturers of Laboratory Products

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problems associated with laboratory diagnostic kits and consumbles of medical diagnostic are briefly summarized in below. 1- control and compliance with cold chain from the origin of production to distribution centers outside the country or from the country due to consumption centers. 2- there is continuous monitoring and useful at all levels of production and distribution is as weak and often not respected. 3- effective supervision and direct control of the ministry of health and health refrence laboratory quality domestic production and imported kits are not complete in this regard laboratories and health of thee paitent and society are endangered. 4- effective surveillance must apply legal levers that enforced and must be implemented through laws and criminal justice not damaged their credibility.



Laboratory and Biochemistry Research O36 – O42

Today it has been found out that most diseases occur due to intracellular process dysfunction. Protein misfolding causes many chronic degenerative diseases such as Alzheimer's and Parkinson's. Changes in membrane lipid structure cause protein's improper trafficking through subcellular site. Moreover, changes in cellular immune system would result in destroying healthy tissues and cause autoimmune diseases such as diabetes type 1. Finally lack of proper control of hematopoietic stem cells differentiation causes hematological disorders. Therefore in order to obtain new insights for finding new approaches in diagnosis and treatment of diseases, several interdisciplinary researches need to be carried out. These studies which can be done in different areas such as basic and clinical biochemistry, neurochemistry, molecular biology, genetics, bioinformatic and biotechnology.

Dr. L. Hosseini Gohari, PhD



O36

Investigate of Leukocyte Expression and Serum Levels of PIN1 and Enos with High Blood Pressure in Patients with Alzheimer's Disease

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Introduction Alzheimer's disease is one of the most neurodegenerative diseases which based on different studies decreased and increased blood pressure is an important risk factor for Alzheimer's disease. The aim of this study was to investigate the relationship between the expression and serum levels of PIN1 and eNOS with blood pressure in Alzheimer disease. **Materials and Methods** Blood samples of study subjects which were divided into four groups: control, Alzheimer's disease without hypertension, Alzheimer's disease patients with high blood pressure and high blood pressure patients by inhibition of confounding factors were collected, serum levels and gene expression of eNOS and PIN1 was evaluated. **Results** Significant differences between the serum levels and the PIN1 and eNOS gene expression was observed in the studied groups ($P=0.05$). So that a direct correlation between the reduction in eNOS and PIN1 expression with increase blood pressure were observed. **Discussion** According to the obtained results perhaps the measurement of these genes might contribute to the prevention, diagnosis and treatment of hypertension and also reduce the rate of deaths from cardiovascular disease in people with Alzheimer's.

Keywords: Alzheimer's Disease, Hypertention, PIN1, eNOS

O37

Effect of Ezetimibe and Garlic on Blood Lipids and Intestinal NPC1L1

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Background: The aim of this experiment was to study the influence of garlic combined with ezetimibe on lipid profile as well as intestinal NPC1L1 expression in normal and hypercholesterolemic mice. **Methods and Materials:** A total of 40 mice randomly were divided into 5 groups: Group 1: hypercholesterolemic group (received 2% w/w cholesterol + 0.5% w/w cholic acid in their diet), Group 2: garlic group (hypercholesterolemic diet + 4% w/w garlic extract), Group 3: ezetimibe group (hypercholesterolemic diet + 0.005% w/w ezetimibe), Group 4: combination group (hypercholesterolemic diet + 0.005% w/w ezetimibe + 4% w/w garlic), Group 5: control (chow only). **Results:** Serum LDL-C and total cholesterol (TC) levels were significantly decreased in ezetimibe, garlic (both $p<0.05$), and combination groups ($p<0.001$). Also, triglycerides and VLDL-C were significantly lower in garlic and combination groups ($p<0.05$). Liver enzymes (ALT and AST), were also significantly decreased in garlic, ezetimibe (both $p<0.05$) and combination groups ($p<0.001$) in comparison with the hypercholesterolemic animals. Analysis of semiquantitative RT-PCR results showed that the levels of NPC1L1 was also significantly less ($p<0.01$) in the garlic, ezetimibe, and combination groups ($p<0.001$) compared with the controls. Based on the results, the combination of garlic and ezetimibe can lower serum lipids and liver enzymes more effectively in hypercholesterolemic mice. **Discussion:** This experiment disclosed that a possible mechanism for the beneficial effects of garlic and ezetimibe combination in lowering plasma LDL-C and TC is inhibition of intestinal cholesterol absorption. More research might be necessary to show the efficacy and the exact mechanism of this co-administration.

Keywords: Cholesterol, Garlic, Ezetimibe, Herbal Medicine, Hypercholesterolemia, NPC1L1

O38

Serum Levels of Adropin and Its Association with Insulin Resistance in Patients with Type 2 Diabetes Mellitus

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Aims: Evidence suggests a hormone peptide named adropin, is involved in lipid metabolism, insulin resistance, and obesity. However, its role in pathogenesis of type 2 diabetes mellitus (T2DM) is still unclear in humans. Therefore, we investigated whether adropin levels are altered in T2DM patients, and evaluated its association with diabetes-related parameters. **Methods:** Men with T2DM (n=40) and age-matched healthy men (n=40) were participated in case-control study. Serum adropin levels were determined by ELISA. **Results:** Adropin levels were found to be significantly (p=0.004) higher in T2DM patients (median=2.5ng/ml; interquartile range=1.28ng/ml) compared to healthy controls (Median=1.9ng/ml; interquartile range=0.6ng/ml). Adropin was inversely correlated with FBG (Spearman's rho= -0.335; p=0.017) in T2DM patients and was also negatively correlated with HOMA-IR (Spearman's rho= -0.391; p=0.024). Adropin ³ 2.25 ng/ml was the best cut-off point to differentiate T2DM patients from healthy controls (sensitivity= 57.5%; specificity= 82.5%; positive predictive value=76.67%; negative predictive value=66%). **Conclusions:** We showed that T2DM patients have higher adropin levels, and serum level of adropin is inversely associated with insulin resistance; therefore indicating a close association between adropin and T2DM. However, further studies are necessary to establish the role of adropin in diabetes.

Keywords: Diabetes Mellitus, Adropin, Insulin Resistance

O39

Prostate Cancer Antigen 3 Gene Expression Can Be Considered as a Reliable Marker for Detection of Prostate Cancer

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Purpose: To determine the expression of prostate cancer antigen 3 (PCA3) gene in peripheral blood and urine sediments from patients with prostate cancer (PCa) and benign prostatic hyperplasia (BPH) and normal subjects. **Materials and Methods:** A total number of 48 patients [24 with biopsy proven prostate cancer (PCa) and 24 with benign prostate hyperplasia (BPH)] were studied. Twenty-four healthy individuals were also recruited as control group. After blood and urine sampling, total RNA was extracted and cDNA was synthesized. Expression of PCA3 gene was assessed by quantitative reverse transcription polymerase chain reaction. **Results:** Comparison of PCA3 gene expression between control and BPH groups indicated no statistically significant differences in both urine and blood samples. Patients with PCa demonstrated an increased PCA3 gene expression rate compared to control and BPH groups (10.64 and 7.17 folds, respectively). The rate of fold increased PCA3 gene expression in urine was 20.90, 20.90, and 20.35 in patients with PCa, BPH and normal subjects, respectively. **Conclusion:** Evaluation of PCA3 gene expression can be considered as a reliable marker for detection of PCa. Increased level of this marker in urine sediments is more sensitive than blood for distinguishing between cancerous and non-cancerous groups.

Keywords: Prostatic Neoplasms, Diagnosis, Tumor Markers, Biological, Blood, Urine, Gene Expression Regulation, Oncogene Proteins

O40

Association of Single Nucleotide Polymorphism in the Lpa Gene Region with Serum Lp(a) Levels

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Over the past several decades, numerous studies have established that increased levels of apolipoprotein(a) [Lp(a)] in plasma are associated with development of coronary heart disease (CHD). Upon discovery of the apo(a) gene (LPA), which was considered one of the most polymorphic transcribed genes in the human genome, researchers reported several polymorphism in LPA gene which associated with CHD and plasma Lp(a) levels. Recently, a single nucleotide polymorphism (SNP) rs3798220, also known as Ile4399Met, encoding an isoleucine to methionine substitution located in the protease-like domain of apo(a) at amino acid 4399 have been shown to be associated with CHD and plasma Lp(a) levels in Caucasians. This study investigated the association of SNP rs3798220 with plasma Lp(a) in a large scale of samples representing genetically diverse populations. The study showed that the heterozygous carriers of SNP rs3798220 (Ile/Met) had 2.8 fold higher serum Lp(a) levels with a mean of 64.3 mg/dL and 95% CI [63.1, 65.5] ($p = 0.0000$) compare to serum Lp(a) levels of homozygous non-carriers (Ile/Ile) having a mean of 33.4mg/dL and 95% CI [33.0, 33.6]. Interestingly, this study showed that the homozygous carriers (Met/Met) have 2.1 fold lower plasma Lp(a) than non-carriers (Ile/Ile) with a mean of 24.5mg/dL ($p = 0.0034$) and 6 fold lower than heterozygous carries (Ile/Met). This study also concluded that there was a clinically significant association between carriers of Ile/Met (genotype ag) and Met/Met (genotype gg) with high serum Triglyceride levels.

O41

Visfatin as a Link between Obesity and Breast Cancer

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Adipose tissue produces and secretes several active molecules called adipokines which may be responsible for obesity associated complications. Visfatin is an adipocytokine which is also the key enzyme in NAD biosynthesis. Visfatin is involved in complications which often accompany obesity. On the other hand, obesity may be an important etiological factor for development and progression of certain types of cancer. Due to the various roles of visfatin, it is suggested to be effective in cancer progression. To investigate the status in visfatin in obesity and its correlation with metabolic parameters, plasma visfatin levels were assessed in a total of 73 children and adolescents (31 controls, 42 obese). The effect of recombinant visfatin on cell viability and its proliferative capacity was examined. Akt and ERK1/2 protein levels and phosphorylation was analyzed and cell proliferation was also assessed in the presence of PI3K and ERK1/2 inhibitors. Anti-apoptotic effect of visfatin was assessed based on prevention of apoptosis induced by TNF- α by phosphatidyl serine analysis and assessment of Poly-ADP ribose polymerase cleavage. The effect of visfatin on survivin, a protein with anti-apoptotic properties, was also investigated. Serum visfatin levels were higher in obese subjects than that in the control subjects and were correlated with body mass index (BMI) and BMI z-score as well as insulin and HOMA-IR as components of metabolic syndrome and insulin resistance. Visfatin significantly increased cell proliferation and increased cell viability. This effect was inhibited by LY29400 and U0126, indicating the role of Akt and ERK1/2 as mediators in this outcome. Visfatin was also able to significantly induce phosphorylation of ERK1/2 and Akt. Visfatin treatment counteracted the apoptotic effects of TNF- α on MCF-7 cells and significantly reduced PARP cleavage. The levels of Survivin were also significantly increased by visfatin. Conclusions: Visfatin is increased in the early stages of obesity and is associated with obesity associated insulin resistance. On the other hand, it plays a critical role in development and progression of breast cancer by induction of cell proliferation and activation of key molecules in this process as well as prevention of apoptosis.



O42

MAB-decorated Liposomes Reduce Amyloid Levels in Old APP/PS1 Transgenic Mice

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The accumulation of extracellular amyloid-beta (Ab) peptide and intracellular neurofibrillary tangles in the brain are two major neuropathological hallmarks of Alzheimer's disease (AD). Equilibrium between brain and blood Ab (through the blood brain barrier (BBB)) has been demonstrated, and it has been proposed that sequestration of Ab in the blood may shift this equilibrium by drawing out the excess Ab from the brain ("sink" effect). This theory has not been fully proven and other mechanisms have been proposed to explain the decrease in Ab brain levels. Based on this theory immunotherapy is one of the therapies that have been tested to reduce A β in transgenic mouse models and some of the tested antibodies have already reached clinical trial with controversial results. Herein, we characterized and described the binding properties of nanoliposomes functionalized with an anti-Ab monoclonal antibody (Ab-MAb) with Ab oligomers in In vitro study and In vivo models. The TAMRA labeled A β (1-42) oligomer cellular uptake (hcMEC/D3 cell lines) inhibited in presence of Ab-MAb-immunoliposomes. For In vivo, we have performed two trials at different age point, adult (10 month-old) and old (16 month-old) APP/PS1 transgenic mice injecting intra peritoneally with small unilamellar vesicles containing a monoclonal antibody against b-amyloid. The first treatment did not reduce the level of amyloid (A β 1-40 and 1-42) in adult mice brain. Surprisingly the same treatment in older mice reduced the amount of A β 1-40 and 1-42, both in plasma and in brain, being this reduction more important in the case of A β 1-42. This reduction on amyloidosis correlated with a lower level of GFAP and reactive glia (GFAP-positive cells). Such nanoliposomes may have potential as agents to enhance amyloid clearance from blood, since they demonstrate high affinity for the amyloid (A β 1-40 and 1-42).

Keywords: β -amyloid, Anti-A antibody, Liposomes, APP/PS1



Laboratory and Hematology Research O43 – O48

O43

Myeloperoxidase Index Distribution in Acute Myeloid Leukemia Patients of Northwest Iran

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Introduction: Myeloperoxidase is a microbicidal protein, which is present in the primary granules of myeloid cells and takes part in the defense of the organism. It is synthesized in the promyelocytes where it is packed into azurophilic granules. Gulley and colleagues reported the observation of a high neutrophil myeloperoxidase activity (MPXI) in patients with megaloblastic anemia. **Objective:** MPXI level may help to differentiate subtypes of AML. **Material and Methods:** Forty-six new cases of adult denovo AML, who diagnosed and confirmed in Shahid Ghazi hospital (Tabriz, Iran), from 2012-2014 was included. Cases, which had received any treatment and with present or past other related disease history, were excluded. Two independent oncologists classified patients based on the French-American-British (FAB) Cooperative Group criteria in eight subtypes (M0-M7).MPXI analyzed using the first blood samples of patients with the automatic analyzer (H1, Technicon, USA). **Results:** Most of the patients are in normal range (-10 - +10), after that 30.4% of patients have high value of MPXI (> 10) and 19.6% of patients with values below -25 have myeloperoxidase deficiency and autosomal recessive anomaly. Based on FAB classification most of the patients with high value of MPXI are in M3 and M4 subtypes and most of the patients with myeloperoxidase deficiency are in M2 subtype. **Discussion:** All of our patients in M3 subtype have high value of MPXI but in other subtypes results are different and especially in M2 subtype, other studies with higher number of patients are recommended.

Keywords: MPXI, Acute Myeloid Leukemia, Iran



O44

The First External Assessment of the Quality of Hematology at the Mazandaran University of Medical Sciences (Reference Laboratory)

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Objective: In order to achieve quality laboratory service, necessarily need to implement quality assurance programs, which including internal and external quality control programs with control samples. External quality control programs as a valuable tool for evaluating the performance of system has been accepted around the world. In this way, The laboratory results are compared with the average obtained by laboratories. **Purpose:** The purpose of the external assessment of quality control, Evaluate the performance of laboratories in the Mazandaran province in hematology section. **Method and materials:** Control blood samples were taken as reference. After The stability index of blood samples under standard conditions were sent to all provincial laboratories. The results obtained after removing the out- of-range results and determine the range ± 2.5 SD were analyzed by software SPSS versions 18. To determine the total error of tested .laboratories base on reporting of internal CV. And After analysis with 95 % confidence interval $P < 0.05$ results of laboratory error ($TE = 1.65CV + \text{Bias}$) were report to the laboratories. **Results:** (23 hos) 52 % acceptable results (Total errors indices) and 48 percent of results unacceptable (Total errors indices). In privat laboratories (109 Lab) 61 % acceptable and 39 percent of the results unacceptable. Health centers (17 Lab) 88 % accepted and 12 % results are unacceptable. **Discussion:** Participating laboratories on External Quality control Programme is very useful to improve their performance. Performing regular implementation of External control program is an important guide to assess the good performance of laboratories.

Keywords: External Quality Control, Hematology

O45

CALR (Calreticulin) Mutation Analysis in Iranian Patients Suffering from JAK2Neg Essential Thrombocythemia and Primary Myelofibrosis

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Introduction: Myeloproliferative neoplasms are clonal hematopoietic disorders which are classified into two groups Philadelphia chromosome-positive and Philadelphia chromosome-negative that contain polycythemia vera (PV), essential thrombocythemia (ET) and primary myelofibrosis (PMF). Calreticulin mutation that is identified recently in ET and PMF is known as a main cause of these diseases after JAK2 V617F. Detection of calreticulin mutation is important to choose a property therapeutic. **Object:** The aim of this study was to assess the calreticulin mutation along with hematological features in JAK2 V617F mutation negative Iranian patients with essential thrombocythemia and primary myelofibrosis which is important in diagnose and therapeutic objects **Method and materials:** Blood count was performed on the peripheral blood samples. DNA was isolated from granulocyte cells and PCR product was sequenced. All results were aligned and compare with the normal sequence. **Results:** 2 male from 30 (6.66%) negative JAK2 V617F mutation patients had a mutation in their calreticulin gene. Both of them had a higher platelet count and lower hemoglobin and hematocrit level in comparison to normal patients. **Discussion and Conclusion:** Compared with normal control, two positive patients showed a higher platelet count and a lower hemoglobin and hematocrit level. So it is possible that other mutated patients show these hematological features too. Furthermore calreticulin mutation detection is important for diagnose and therapeutic objects.

Keywords: Calreticulin, Essential Thrombocythemia, Primary Myelofibrosis



O46

The Effect of Mesenchymal Stem Cells on Mitochondrial DNA Copy Number of Expanded Umbilical Cord Blood CD34+ Cells

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Backgrounds and objectives: Umbilical cord blood is a limited but rich source of hematopoietic and mesenchymal stem cells (UC-MSC). It has been used in medical treatments as it does not have limitations related to bone marrow stem cells such as invasive access. However, umbilical cord blood has limited stem cells; hence in vitro cell expansion is conducted in this regard. CD34+ stem cell culture in the vicinity of mesenchymal stem cells increases and improves the transplanted cells. It is demonstrated that long-term and short-term hematopoietic stem cells are different in term of mitochondrial content and metabolism. Long-term hematopoietic stem cells have fewer mitochondria. The number of mitochondrial DNA copies of CD34+ cells in the vicinity of UC-MSC was examined in this study. **Materials and Methods:** Isolated CD34+ cells from umbilical cord blood were expanded in Stemline II serum-free medium containing TPO, SCF, Flt-3 ligand and also co-cultured on UC-MSC (MSC co-culture method). The total extracted DNA from CD34+ cells at day 7 was subjected to TaqMan Real-Time PCR analysis to assess mtDNA copy number. **Results:** mtDNA copy number of CD34+ cells significantly increased in the routine expansion method versus MSC co-culture method (CD34+ cell prior to expansion: 214 copy per cell, expanded CD34+ cell: 517 copy per cell, expanded CD34+ cell on MSC: 388 copy per cell) (p-value <0.001). **Conclusion:** Lower mtDNA copy number of expanded CD34+ cells co-cultured on MSC indicates that the cells are mainly long-term rather than short-term stem cell.

Keywords: HSC, MSC, Mitochondri, mtDNA Copy Number

O47

Prognostic Value of Neutrophil to Lymphocyte Ratio for Death in Patients with Venous Thromboembolism

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Background: Venous Thromboembolism (VTE), that includes deep vein thrombosis (DVT), and pulmonary embolism (PE), is a common event with a mortality rate 15-20%. Neutrophil to Lymphocyte Ratio (NLR), has been identified as a potentially useful marker to predicting clinical outcome in patient with various diseases and malignancies. Our aim in this study was to determine the prognostic value of NLR in patients with venous thromboembolism in time of occurrence of VTE during 30-day follow up. **Methods:** In this retrospective study that perform among the patients who were hospitalized between 1391-1394 in Shahid sayyad shirazi and Gorgan's 5th azar hospitals, from a total of 176 patients with VTE, 83 patients were eliminated than this study because of cancer and other malignancy, and the remaining 93 patients were enrolled. In this study hematological and biochemical parameters of patients were studied to predict the occurrence of death. **Results:** seventeen of 93 patient (18.3%) included in this study passed away during 30 days follow-up. Regarding the quantities of various blood and biochemical parameters, creatinine kinase MB isoform (CK-MB), Neutrophil and NLR have most correlation to mortality, that in multivariate cox regression analysis for survival, only NLR had significantly correlated with mortality. An optimal cut-off value for NLR>5.5 had a sensitivity, specificity, positive predictive value, and negative predictive value of 76.5%, 76.3%, 41.9% and 93.5%, respectively. **Conclusion:** This study revealed that NLR can be introduced as a useful parameter in prediction of 30-day mortality in patients with Venous Thromboembolism.

Keywords: Venous Thromboembolism, Neutrophil to Lymphocyte Ratio, Creatinine Kinase MB Isoform



O48

Frequency of HFE Gene C282Y and H63D Mutations and their Correlation with Iron Metabolism in Iranian beta-Thalassemia Major Patients

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Background: Co-inheritance of HFE gene mutations may play an essential role in the pathogenesis of iron overload in beta-thalassemia major (BTM) patients. The aim of the present study was to investigate the prevalence of HFE gene mutations (C282Y and H63D) in BTM patients in comparison to a control group. Also, the correlation between HFE gene mutations with some hematologic parameters and biochemical iron markers and investigated. **Materials and methods:** Our study population consisted of 65 BTM patients and 200 apparently healthy controls. The genotyping of HFE gene mutations (C282Y and H63D) were conducted by PCR-RFLP method. Serum ferritin levels were determined by ELISA assay. Hematologic parameters were assessed by routine laboratory methods. **Results:** The carrier frequency of the H63D mutation was 20% with an allele frequency of 11.53% in BTM patients, while in the control subjects the prevalence of this mutation was 21% with an allele frequency of 11.75%. The HFE C282Y gene mutation was only detected in 1.5% of the controls. No significant differences were observed in genotypic and allelic distribution of H63D and C282Y mutations between the two group ($p>0.05$). However, BTM patients carrying HFE H63D mutation had significantly higher serum iron, serum ferritin and transferrin saturation levels than BTM patients not carrying HFE H63D mutation ($p<0.05$). **Conclusion:** our study demonstrated that HFE H63D mutation is a significant contributing factor for iron overload in BTM patients. However, the genotypes and allelic distribution of HFE H63D mutation and also HFE C282Y mutation didn't differ significantly between the two groups.

Keywords: Thalassemia, HFE Mutation, PCR-RFLP, Iron Overload



Laboratory and Immunology/Serology Research O49 – O57

The immune system as a complicated and precise system must protect the host against internal and external foreign agents. These agents can enter the host body from the outside, such as pathogens (viruses, parasites, fungi, bacteria, prions and allergens, etc.), or can be recognized and targeted by the immune system as a result of a change in the cells inside the body and out of its normal state.

This immune system's function plays an important role in direct and indirect identification of diseases. For example, the immune system's response to pathogens such as HIV, HBV and HCV is helpful for diagnosis of diseases. On the other hand the immune system's response can help doctors in determining the recovery process or disease progression. In addition, in autoimmune diseases, the laboratory variables play an important role in the diagnosis and prognosis of the disease.

Research in the field of immunology / serology on human specimens and animal models or cell cultures can help us to improve our understanding of biology of cell change biology-based diseases in association of the immune system's direct response and diagnosis and prognosis of diseases.

Considering the role of clinical laboratories as the most important lever of clinicians, research in various fields such as immunology / serology can improve the quality of their current activities.

Dr. A. Gharebaghian, DCLS, PhD



O49

Simultaneous Comprehensive Multiplex Autoantibody Analysis by Cytobead Technology for Rapidly Progressive Glomerulonephritis

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Rapidly progressive glomerulonephritis (RPGN) occurs due to anti-glomerular basement membrane (GBM) antibody-mediated, immune-complex or anti-neutrophil cytoplasmic antibody (ANCA)-associated vasculitides (AAV) and results in acute loss of renal function. Detection of ANCA and autoantibodies (autoAbs) to GBM and dsDNA enable early diagnosis and appropriate treatment of RPGN aiding in preventing end-stage renal disease.

O50

The Relationship between Interleukin-22 (IL -22) Peptic Ulcer Disease in Patients of the Hospital Hajar Shahrekord

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Means a benign peptic ulcer damage to the lining of the gastrointestinal mucosa minister. The main cause of ulcers associated with *Helicobacter pylori* is known to cause peptic ulcer, the treatment of a disease with antibiotic treatment is 6 to 15%. Depending on the location of mucosal damage stomach ulcer or duodenal Lesions are often associated with duodenal ulcer and in male smokers, middle-aged or older, with blood group O and seen more stressful. A group of T helper 17 cells are T cells that are producing IL- 22. In this study we have investigated the role of this cytokine in the disease, relation between them. **Materials and Methods:** In this study, 32 healthy subjects as controls and 8 patients. And then provided with the kits made in Taiwan Abnova company was measured. **CONCLUSIONS:** The results showed that stomach ulcers in patients with increased levels of IL-22 compared with healthy subjects of which are various clinical forms of the infection is distinct patterns of cytokine expression reflect. That IL-22 may influence inflammatory cells to the site of injury, and this evidence of inflammation and shelf-life stability of bacteria in the stomach. But the details and connect to different patterns of inflammation and virulence factors is unknown.

Keywords: Peptic Ulcer Disease, H. Pylori, T Helper 17, IL 17

O51

The Importance of Measuring the Levels of Pentraxin3 (PTX3) as a Disease Activity Index in Systemic Lupus Erythematosus (SLE)

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Introduction and purpose SLE is a common rheumatologic and chronic autoimmune disorder with unpredictable course. Some inflammatory molecules play a key role in the pathogenesis of SLE. Pentraxins (inflammatory biomarkers) are include short (CRP) and long (PTX3). Unlike, CRP, PTX3 may play key role in the pathogenesis of disease. At the moment, it has not identified any biochemical markers that can be accurately disease activity index. The objective of this study is to evaluate the use of PTX3 as a biomarker of SLE activity. **Methods** we studied 70 women patients with SLE and 65 healthy women. Patients are evaluated by SLE activity indexes (clinical and laboratorial). The levels of sPTX3 were measured by ELISA (EASTBIOPHARM). Relation of PTX3 and disease activity indexes were analyzed by statistical methods. **Results** In this study, patients were divided into 3groups according to the SLE activity index: mild, moderate and highly. The average PTX3 in patients (16.2±11.1 ng/ml) was higher than the control (2.5±1.4 ng/ml) (P< 0.001) the mean of PTX3 ranged in group1 (2.9±0.9 ng/ml), group2 (11.2±3.1 ng/ml) and group3 (45.1±25.5 ng/ml). Therefore, there was a significant difference between the 3groups. (p<0.001) relation of PTX3 with some activity indexes such as anemia, anti phospholipid syndrome, kidney disease, C3, C4 is significant.(p<0.05) and with CRP, ESR, anti DNA is non-significant.(p>0.05) **Conclusion** SLE activity indexes usually dose not meet disease progression and some indexes may also be seen in inactive disease. This study was shown that PTX3 can be used as key and precise index in activity diseases.

Keywords: Systemic lupus Erythematosus, SLE Disease Activity Index, Penraxin 3 (PTX3)

O52

Evaluation of CXCR4 Expression as a Putative CSC Marker in Renal Cell Carcinoma: A Study Using Tissue Microarrays (TMA)

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Background and Aim: In many solid tumors, cancer stem cells (CSC) represent a population with tumor-initiating, self-renewal, and differentiation potential, which can be identified by surface protein markers. CXCR4 is a CSC marker and candidate oncogene in several types of human tumors including renal cell carcinoma (RCC).The aim of this study was to evaluate CXCR4 expression as a putative CSC marker in RCC specimens and its correlation with clinicopathological characteristics of tumor in different subtypes of RCC. **Methods:** The expression of CXCR4 in specimens from RCC patients was evaluated by immunohistochemistry on a tissue microarray(TMA).One hundred and seventy-three consecutive patients treated surgically for renal cell carcinoma (RCC) between 2010 and 2015 were selected including 106 (61.3%) Clear Cell Renal Cell Carcinoma (ccRCC), 35(20.2%) Papillary and 32 (18.5%) Chromophobe. The association between expression of this marker and tumor characteristics was then analyzed. **Results:** Mean expression of CXCR4 (262.57, SD=9.37) was higher in papillary compare to ccRCC and Chromophobe sub types. Univariate analysis demonstrated that the mean expression of CXCR4 is significantly different in RCC subtypes (P < 0.000). Increased expression of CXCR4 was significantly correlated with higher grade tumors (P < 0.000). High expression of CXCR4 was associated with increased of stage (P = 0.01). The statistically significant association was not found between expression of CXCR4 and clinicopathologic features of patients including invasion to pelvis (P= 0.174), vein (P= 0.102) and lymph node (P= 0.185), tumor size (P= 0.537), age (P= 0.728) and sex (P= 0.228). **Conclusions:** These findings suggest that CXCR4 can be considered as a valuable tool for the study of renal CSCs and provide a therapeutic target for treatment of the patients with renal cell carcinoma in combination with conventional therapy.

Keywords: CXCR4, CSC Marker, Tissue Microarray, Renal Cell Carcinoma

O53

Involvement of Innate Immunity Cytokines in the Pathogenesis of Autoimmune Skin Disease of Pemphigus Vulgaris in the Central Regions of Iran: Perception of Immunopathogenesis and Promising Consequences for Non-Steroidal Treatment

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Background and aim: Cytokines have been suggested to play an important role in the pathogenesis of various inflammatory and autoimmune diseases, including the potentially fatal blistering disease of pemphigus vulgaris (PV). No data are currently available on the cytokine levels in the sera of Iranian patients with PV in the central areas of Iran (Provinces of Isfahan and Chahar Mohal Backtiyari). This study aimed to measure the serum levels of some pro-inflammatory and anti-inflammatory cytokines in PV patients. **Method:** Using highly sensitive ELISA kits, the levels of IFN- γ , IL-2, IL-4, IL-6, IL-12 and IL-17 were measured in the sera of 48 patients with PV and 48 healthy individuals. **Results:** Serum levels of IL-2, IL-4, IL-17 and IFN- γ in most patients and healthy controls were undetectable. Likewise, the serum levels of IL-10 in patients and controls were undetectable. Nevertheless, the mean concentration of this immunosuppressive cytokine was 64.375 pg/ml in four patients. However, all patients showed significantly ($P < 0.05$) elevated levels of pro-inflammatory cytokine of IL-6, compared with controls. Similarly, the mean concentration of IL-12 increased significantly ($P < 0.05$) in patients, compared with controls. **Conclusions:** The results showed that IL-6 and IL-12 levels were significantly increased in the sera of PV patients and this may suggest their roles in the PV pathogenesis. Thus, monoclonal antibodies against these pro-inflammatory cytokines may be effective for PV treatment.

Keywords: Pemphigus Vulgaris, Autoimmune Skin Disease, Pathogenicity, IL-6, IL-12, Iran

O54

Introduction to ABO and Rh Grouping Errors

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Experiments with blood transfusions have been carried out for hundreds of years. More than 250 unique RBC antigens have been documented to date and around 30 Blood group antigens have been assigned which most of them discovered in the course of blood transfusion. Normal, Healthy individuals possess ABO antibodies to the ABO antigen absent from their RBCs. The ABO Blood Group System was the first to be identified and is the most significant for transfusion practice. The term Rh refers not only to a specific red cell antigen but also to complex blood group system that is currently comprised on more than 50 different antigenic specificities. The purpose of pre-transfusion compatibility testing is to prevent hemolytic transfusion reaction technical and clerical against blood components. RBCs stimulation is caused by result of natural or unexpected antibody that is conducted to transfusion reaction, F/HDN, miscarriage and etc. Causes of Discrepancies in ABO Testing can be divided into four groups: 1) Technical that are included: Incorrect ID/recording, Patient/donor serum not added, Reagent contamination, Under-/over-centrifugation, Hemolysis, Warming of test mixture. 2) Red Blood Cells those are included: Missing or weak A/B antigen, Acquired B phenotype (colon or gastric CA, or intestinal obstruction), B (A) blood group phenotype Poly-agglutinable RBC, Ab-coated RBC (post-transfusion incompatibility; autoimmune hemolytic anemia), 5. Maternal-fetal agglutination (mismatched transfusion) 3) Serum that are included: Roleaux formation (presence of plasma expanders, monoclonal gamma globulins), Anti-A1, Unexpected allo-antibody(s), Expected antibody absent/or hypo-gammaglobulinemia, extreme ages, immunosuppression, Auto/Allo Cold Antibody(s), 4- Mixed Reactions: Transfusion of O blood group to patients with (A, B, AB blood groups), A3 phenotype, recipients of Bone Marrow transplantation or Stem Cells Rh Typing (slide or test tube method) difficulties results are divided into two main groups. 1): False Positive results: Drying, Roleaux formation, Auto-agglutination, Patient's red cells heavily coated with Ab's, Presence of cold agglutinins 2): False Negative results: Use of old cells, Wrong cell concentration, Hemolysis, Inadequate mixing of cells, Inactive typing sera, Incorrect temperature, Existence of weak-D variants, High concentration of blocking antibodies.

O55

Sources of Error in Serology & Immunology Lab

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Among the four important indicators that are most commonly used to determine the reliability of a clinical laboratory test, the accuracy and precision, reflect how well the test method performs every day in a laboratory. Laboratory errors in specimen collection, handling and processing can affect accuracy and precision of test results. So having a basic knowledge of source of errors is necessary for laboratory staff. Since serological and immunological laboratory tests are among the routine and important laboratory tests, in this lecture we discuss a variety of sources of error and ways to avoid them in the following tests: 1- C-Reactive Protein Rapid Latex Agglutination Test 2- Traditional Screening Test for Infectious Mononucleosis 3- Pregnancy Latex Slide Agglutination 4- ABO Blood Grouping (Reverse Grouping) 5- Electrophoresis Techniques 6- Classic VDRL Procedure: VDRL Qualitative Slide Test 7- Rapid Plasma Reagin Card Test 8- Passive Latex Agglutination for Detection of Antibodies to Cytomegalovirus 9- Paul-Bunnell Screening Test 10- Davidsohn Differential Test 11- MonoSlide Test 12- Western Blot 13- Direct Antiglobulin Test 14- Rapid Slide Test for Antinucleoprotein 15-Antinuclear Antibody Visible Method.

O56

Different Types of Agglutination/Hemagglutination-Based Techniques

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The term 'agglutination' refers to a serological reaction when antibodies are mixed with their corresponding antigens on the surface of large, easily sedimented particles at appropriate temperature and ionic strength solution result in cross-linking the particles, forming a lattice-like structure seen as clumps with naked eye. It is of note to mention that; hemagglutination is a specific form of agglutination that involves red blood cells (RBCs). Generally, there are three types into which the agglutination/hemagglutination techniques are classified: Direct agglutination is used for a macroscopic clumping of naturally occurring antigens on the surface of cells such as RBC or bacteria by their specific antibodies. While in the indirect (passive) agglutination test, known soluble antigens are coated on to other cells or inert particles which act as passive carriers of antigens, reverse passive agglutination assay refers to such a reaction in which inert particles or RBCs are coated with known antibodies.



O57

Assessment of Humoral Immunity

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The patients with clinical presentation of humoral immunodeficiencies need to be evaluated with laboratory tests. Accurate performing of appropriate laboratory tests is very helpful to rule out or rule in humoral immunodeficiency disorders. These tests are done in two steps: screening and advanced. These tests are included in the screening step: measurement of isoheagglutinin titer (antibody against blood group antigens), immunoglobulins (IgA, IgG, IgM, IgE), and antibody response to routine vaccines (like tetanus and diphtheria). If some parameters are reported abnormal, advanced test will be done. In advanced tests, B lymphocytes enumeration (by flowcytometry), measurement of IgG subclasses, lateral neck X-ray (for evaluation of adenoid tissue), and injection of new vaccines (like pneumococcus and typhoid) and evaluation of the antibody response to vaccination will be done. As most of the patients with suspected immunodeficiency are children, it is very important to compare the results with normal range for their age. Isohemagglutinin titer can be very low before 6 months of age and should not be used for diagnosis. Also, antibody response to vaccines can be reported lower than normal in children under two years old. In evaluation of antibody response to new vaccines, antibody titer before and 3-4 weeks after vaccination should be measured in the same laboratory and compared. In conclusion, diagnosis will be made according to clinical and laboratory findings, which can be confirmed by genetic studies.



Laboratory and Microbiology Research O58 – O66

O58

The Wound Infection after Caesarean Section, Kosar Hospital

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The rate of cesarean delivery in the all countries really increased. Recently, well established that Caesarean section is a significant risk factor for infection compared with vaginal delivery. The clinical presentations of wound infection were erythema, tenderness, purulencedischarge and fever. Diagnosis of Wound infection is clinical and laboratory findings only supported the definite diagnosis. The present study was undertaken to evaluate the Wound infection after Caesarean section. Methods and materials: This was a cross-sectional study conducted among 5020 the pregnant mothers referred to the Kosar Hospital during Jun 2008 and Jun 2013 for cesarean section. The data from these participants were obtained by a check list and laboratory specimens. Swab samples, were collected and cultured on culture Medias. Antibioqram was done. Both descriptive and statistical analysis methods were applied. Results: of the pregnant mothers with cesarean delivery in this study, 151 (3%) had wound infection. Age range of subjects in this study was 21-34 years. The nearly two-thirds of them were overweight or obese. The commonest organism causing wound infection was Staphylococcus aureus (48%), Staphylococcusepidermidis (28%), Pseudomonas sp.(3%), Acinetobacter sp.(4%) and (17%) were colonizedwith 2-3 different organisms. Conclusion: Obesity, previous operative site infection, chorioamnionitis, prolonged operative time, excessive blood loss during surgery, diabetes mellitus, and use of electrocauteryincreased the risk ofwound infections. The planning about delayed secondary wound closure versus healing by secondary intention will be associated with the wound size and follow-up care strategies.

Keywords: Wound Infection, Caesarean Section



O59

Prevalence of Occult HBV Infection in the Province of Yazd (Iran)

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Background: Occult hepatitis B is defined by the presence of HBV DNA in serum or liver in the absence of HBsAg. Low serum HBV DNA titers, in the range of 100 to 1000 copies/ml, are typical in occult HBV infection. HBV infection can lead to chronic disease, cirrhosis and liver cancer. For this reason the aim of this research was to find out the prevalence of occult HBV infection in Yazd (Iran) **Methods:** The methodology used in this research is a semi-experimental one. The research was conducted on 200 patients. HBsAg, anti-HBs and anti-HBc quality was tested by ELISA method and HBV DNA quantification was tested by real-time PCR assay in 2015 (Yazd) **Results:** 110 of 200 patients were HBsAg and HBV DNA positive. 6 of 90 HBsAg-negative patients had HBV DNA positive. Occult HBV infection rate was 6.7% **Conclusion:** We found that prevalence rate of occult HBV infection tends to correlate with intermediated prevalence of hepatitis B infection in Yazd (Iran). Occult HBV infection rate range between 7% to 13% in the world.

Keywords: HBV, Occult Infection, Prevalence, Yazd

O60

The Effect of Artificial Sweeteners on Probiotic Viability and Antioxidant Activity of Bacterial Culture

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Aim and backgrounds: The effect of aspartame and sucralose on the viability and growth of probiotic bacteria, such as *Lactobacillus rhamnosus* and *Lactobacillus casei* were investigated. Antioxidant activity was also studied for probiotic culture probable prebiotic produced by the bacteria. **Methods:** The cell viability was determined at presence of the varying amounts of aspartame or sucralose. The bacterial cells were enumerated using pour plate technique after treating with 0.5 and 1% of each sweetener. Antioxidant activity of bacterial culture including cells and supernatants was measured by DPPH method. Antioxidant activity of sweeteners was conducted in the free cell- media as a second control. **Results and Discussion:** Aspartame 1% exhibited no significant effects on the growth of *L. rhamnosus* and *L. Casei* while sucralose had only a slight increasing effect on *L. rhamnosus*. The effect of both sweeteners on antioxidant activity of total cultures was completely adverse. Antioxidant activity of bacterial cultures treated with aspartame decreased 48 h of co-incubation. However, sucralose increased the antioxidant activity caused by *L. rhamnosus*. This effect was not significant when *L. casei* culture has been treated by sucralose even during the all the time of incubation. **Conclusion:** The results are in agreement with some literatures confessing the influence of artificial sweeteners on microbiota abundance in gastrointestinal system. Although, our study was conducted in vitro, our findings could be attributed to stimulatory effect of the artificial sweeteners on gut microbiota.

Keywords: Lactobacillus, Probiotic, Aspartame, Sucralose



O61

Frequency of *vanA* & *vanB* Genes in Vancomycin-Resistant *Enterococcus* Isolated from Clinical Samples

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Background and aims: Enterococci are a part of the normal flora of the human gastrointestinal tract, and play an important role in the spread of resistance genes and produce antibiotic-resistant strains. Vancomycin-resistant enterococci (VRE) are one of the major nosocomial pathogens in worldwide. The aim of this study was to investigate the frequency of phenotype and genotype of *van* genes in vancomycin resistant *Enterococcus* isolated from clinical samples in 2015. **Methods:** After isolating and identifying 100 strains of enterococci from clinical specimen, the enterococcus isolates were identified by biochemical confirmation tests. Resistance of each isolate to vancomycin determined by disk diffusion and MIC test and was tested for the presence of the *vanA* and *vanB* genes by PCR. **Results:** The results of the 100 isolates of enterococci collected from clinical specimens showed 21 (21%) enterococcus was resistant by disk diffusion method to vancomycin, and using MIC test 15 (15%) enterococci was resistant in high level to vancomycin. PCR assay of 21 samples showed 5 patients (23.8%) included *vanA* gene and 0 (0%) with *vanB* gene. **Conclusion:** Based on the results of the present study, the rate of isolation of *vanA*-containing strains was higher than that of *vanB*-containing. PCR has a high specificity compared to other phenotypic methods MIC test and disk diffusion method.

Keywords: Enterococcus, *vanA*, *vanB*, PCR, Vancomycin

O62

Study of Bloodstream Bacterial Pathogens and their Antibiotic Resistance Pattern in Patients under 12 Years of Bu-Ali Sina Hospital (2015)

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This study was performed to determine the bacteriological characteristics of blood stream isolates in the children neonates as a high risk population at Sari Bou Ali Sina hospital. All neonates and children up to 12 years of age that had sepsis or bacteremia. Samples subcultured in appropriate media using the usual differential techniques and antimicrobial sensitivity tests in to the Muller Hinton agar media. One hundred cultures positive blood cultures were identified among 710 enrolled patients. Positive blood culture were more common in the neonates that children Gram positive organisms were more common than Gram negative ones with coagulase negative staphylococci as the most common isolate in G+ and *Klebsiella pneumoniae* as the most prevalent G- organism. The next category followed *E.coli*, *Enterobacter*, *Pseudomonas aeruginosa* and *Brucella*. Most G+ bacteria sensitive to Vancomycin and resistance to Methicillin and Oxacillin. And most G- bacteria sensitive to Imipenem and Amikacin, and resistance to Ampicillin and Cephalexin. The results showed very important role coagulase negative staphylococci in bacteremia and choose the appropriate antibiotic is necessary. Geographic diversity or different parts of medical centers, and drug sensitivity testing by standard methods (in compare with direct method) has an impact on antibiotic resistance of bacteria.

Keywords: Blood Culture, Septicemia, Drug Resistance, Bacterial Pathogen



O63

Isolation, Identification and Typing of Brucella Spicese in Malt Fever Patients in Kashan Shahid Beheshti Hospital

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Introduction: Brucellosis is one of the most important and widespread endemic disease that threatens the public health. Considering the significance of identifying different biotypes of the disease from the epidemiological point of view and lack of such information in the city of Kashan, this study was designed to determine the biotype and strain of isolated brucella in patients. **Materials and Methods:** This was a descriptive research performed on 206 samples. BACTEC 9050 system was employed to test the samples and biotype identification was performed by Lysis tests with Tbilisi (Tb) phage, need for Co₂, SH₂ production, sensitivity to basic fuchsin and Thionin stains and reaction to specific antiserum A and M (Monospecific). **Results:** 50 out of 206 samples (24.27%) were positive. The result of identification test indicated that all the strains were biotype 1 brucella melitensis. This biotype was identified in 1 case of bone marrow, 2 cases of CSF and 2 cases of synovial. **Conclusion:** The cause of human brucellosis in Kashan and suburb was biotype 1 brucella melitensis. Since the identification of various biotypes of brucella is important, this type of research is should be repeated to detect the presence of new biotypes importing from the neighboring countries.

Keywords: Brucella, Biotype, Strain, Brucellosis, Sterile Fluids

O64

The Frequency of Panton Valentine Leukocidin, Toxic Shock Syndrome Toxin1 and Hemolysin- α Toxins in Community-Acquired Methicillin-Resistant Staphylococcus Aureus

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Background: Staphylococcus aureus (S.aureus) is an important cause of community acquired infections. The virulence factors such as panton valentine leukocidin (PVL), toxic shock syndrome toxin1 (TSST-1) and hemolysin- α (HLA- α) play an important role in the pathogenesis of community-acquired S. aureus infection. The aim of this study was to assess the prevalence of toxins in community-acquired methicillin-resistant Staphylococcus aureus (CA-MRSA) strains that isolated from endotracheal tube in Luqman hospital of Tehran. **Methods:** The study was conducted from July 2014 to July 2015. A total of 44 isolates from endotracheal tube were diagnosed and PCR reactions for mecA, pvl, tsst-1 and hly- α gene were performed with specific primers. **Results and Conclusion:** The Frequency of genes were respectively 13% pvl, 15% tsst-1, hly- α 84%, mecA 25% and the simultaneous presence of all three toxin genes were 4%. In CA-MRSA isolates, 100% of the isolates contained hly- α gene and both tsst-1 and pvl genes were 9%, and in CA-MSSA strains, hly- α , tsst-1 and pvl were 80%, 18% and 15% respectively. The results indicate that due to the high prevalence of important toxins especially PVL in the community-acquired S.aureus, rapid detection and control of these infections is considered necessary.

Keywords: Community-Acquired Methicillin-Resistant S.aureus, mecA, Panton Valentine Leukocidin, Toxic Shock Syndrome Toxin, Hemolysin- α Toxin



O65

The Prevalence of Coinfection of Chlamydia Trachomatis and Listeria Monocytogenes among Iranian Women

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Introduction: chlamydia trachomatis and listeria monocytogenes are 2 obligate intracellular bacteria which are important reproductive tract pathogens in humans and variety of animals. persistant infection of chlamydia could facilitate entrance of other bacteria like listeria monocytogenes the aim of this study was to estimate the prevalence of these two organisms by using molecular method (PCR) among 2 groups of women group 1 women with cervicitis, and group 2 women who referred for spontaneous abortion. **Materials and Methods:** A totally of 200 specimens were enrolled in this study, 150 women with cervicitis and persistant vaginal discharge and 50 women who referred to hospital for spontaneous abortion, DNA extracted and PCR was performed for amplification of ompA gene of chlamydia and hly A gene of listeria. **results:** from 150 specimens of vaginal discharge 35% was positive for chlamydia trachomatis and 4% positive for listeria monocytogenes (group 1), in group 2 (abortion) 43.8% was positive for chlamydia trachomatis and 10% positive for listeria monocytogenes. **Discussion:** this study revealed that there are coinfection of chlamydia and listeria and also the percentage of chlamydia trachomatis is high in 2 groups which were selected. But in group 2 that the prevalence of chlamydia is more higher the prevalence of listeria become more too. This could be the effect of persistence or chronic infection of chlamydia and its role for facilitating the entrance of other bacteria like listeria monocytogenes into cells.

Keywords: Chlamydia Trachomatis, Listeria Monocytogenes, Coinfection

O66

Evaluation of Phosphomycin on Biofilm Production by Meticillin Resistant Isolates of Staphylococcus Aureus

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Introduction: Extracellular polysaccharides which produce by Staphylococcus aureus results in biofilm formation by this bacterium and cause the adherence of the bacteria to different surfaces such as plastic catheters leads to the development of infections. The antimicrobial effects of phosphomycin on some bacterial strains such as S. aureus and E.coli have been shown later. The aim of this study was to investigate the reducing effects of phosphomycin on biofilm formation by meticillin resistant S. aureus isolates. **Materials and Methods:** 42 meticillin resistant S. aureus isolates were collected from Urmia city hospitals during a six-month period and were identified by standard microbiological methods. The Sensitivity of isolates to meticillin was investigated by agar disk diffusion method. Microtiter plate method was used to determine the amounts of biofilm formation in the presence/ absence of phosphomycin. **Results:** From 42 isolates which were identified as meticillin resistant S.aureus, 11 isolates were biofilm producers. Phosphomycin significantly decreased biofilm formation by meticillin resistant S.aureus isolates ($p = 0.039$). **Conclusion:** The inhibitory effects of phosphomycin on biofilm of meticillin resistant S. aureus isolates were seen, however after further studies it may be useful for prevention of biofilm formation and removal of the carriers from meticillin resistant S. aureus especially in skin and mucous surfaces.

Keywords: Staphylococcus Aureus, Meticillin, Phosphomycin, Biofilm



Laboratory and Noncommunicable Diseases (NCD) Surveillance System O67 – O70

WHO announced that in year 1404, mortality of people in case of non communicable disease have to decrease - 25 Percent.

4 major non communicable diseases:

Diabetes

Hear Diseases

Cancers

COPD

Hygiene system should survey diseases before incidence.

Medical Laboratories have the first role of diagnosis in three of above diseases.

Dr. S. M. H. Hashemi Madani, DCLS



O67

Survey of Permanent Congenital Hypothyroidism in Newborns under Treatment in Qazvin during 1385-1393

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Introduction: Congenital hypothyroidism is the main causes of preventable mental retarin newborns, performing the newborn screening programs and early diagnosis and appropriate treatment of patients, Prognosis of newborns with congenital hypothyroidism is significantly improved. But no treatment or delayed treatment for mental retardation is inevitable. This article studies the process and outcomes of treatment of identified patients that were under treatment for three years. **Materials & Methods:** In a descriptive study of identified patients through screening programs In a descriptive study of patients identified through screening programs according to state instructions to find out whether the hypothyroidism after three years old, is permanent or not, **Results:** From the beginning of 1385 until the end of 1393, 82422 infants were in screened 252 patient infants were identified, of 252 patients, 158 patients became three years old, Analyzed. the results of the evaluation of these patients is as follows: Of 158 patients, 81 patients had permanent hypothyroidism (51.2%) and 48.8% has improved. of 81 patients with permanent hypothyroidism 47% were male and 53% female-50% had initial TSH between 9.9 to 5 and 24% had TSH between 19.9 to 10 and 26% had TSH above 20 **Conclusion:** According to the results found that 51.2% of identified patients had permanent hypothyroidism and the average incidence of the disease in the years 85 to the end 93 of approximately 3.1 per thousand that in the actual incidence is 1.6 in per thousand births. Is 26% of infants had initial TSH over 20.

Keywords: Qazvin, Neonatal, Hypothyroidism

O68

Vitamin D Level Status in Patients Referred to Ghaem Hospital, Mashhad, Iran during First Semester of 2015

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Introduction: Vitamin D consists of 2 bioequivalent forms. Vitamin D2 (D2) also known as Ergocalciferol is obtained from dietary vegetable sources and oral supplement. Vitamin D3 (D3) known as Cholecalciferol is obtained primarily from skin exposure to ultraviolet B(UVB) radiation in sunlight, ingestion of food sources such as oily fish and variably fortified food.(milk, juices, margarines, yogurt, Cereals and soy) and oral supplement. It is now accepted that Vitamin D deficiency is a worldwide health problem that effect musculoskeletal health and acute and chronic disease. To unravel status of vitamin D among patients who referred to our hospital, we did a respective study on this topic. **Methods and patients:** We collected laboratory data on 2044 patients who admitted to Ghaem hospital of Mashhad during first 6 month of 2015 to find out the effect of sex on vitamin D level in serum. The test including 25-OH vitamin D that were done by ELISA method using EUROMMUN kit (Mashhad, Iran). **Result:** Among 2044 patients, there were 1574 women (77%) and 470 men (23%). 38% of all patient were in the range of sever deficiency (<10) that include 80% women and 20% men. The mean vitamin D level was 22.54 in women and 19.77 in men. **Conclusion:** Our study showed that vitamin D is significantly low in a large number of people especially in women. Diet, latitude, cultural dress habits, season, sun avoidance and sunscreen protection can all limit vitamin D production.

Keywords: Vitamin D, Vitamin D Deficiency, Method



O69

Prevention and Control of Noncommunicable Diseases (NCDs) In Iran Health System By 2025

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In 2013, World Health Organization developed the World Programme of Action for 2013-2020 which comprised nine global targets and 25 indicators for control of four common noncommunicable diseases including cardiovascular disease, diabetes, cancer and chronic obstructive pulmonary disease (COPD) as well as their risk factors: tobacco, low physical activity, poor nutrition and alcohol. The practical measures for achieving those goals were also recommended by WHO. Measures in four areas including governance, reducing exposure to noncommunicable disease risk factors, enabling health care system to meet service demands, and regular monitoring of epidemiological trends of the diseases were identified as the basic strategies for achieving the above objectives by WHO and practical measures were recommended. Similarly, in our country during the last years good steps have been taken in regard to non-communicable diseases control including public education, integration of diabetes and hypertension screening in the network system, etc. Such measures have been performed in our country in line with the implementation of the four strategies proposed by WHO within the scope of governance, and the national document in prevention and control of non-communicable diseases and their risk factors. In this document 13 goals were determined for the health care system taking into account the nine global targets. In order to achieve the objectives set forth in the document and in line with the structural transformation of the health care system, the IRAPEN national plan was developed and its pilot implementation began in February, 2016 in four cities including Naghade in west Azerbaijan province, Maraghe in east Azerbaijan province, Shahreza in Isfahan province and Baft in Kerman province. This program has been developed in line with the basic interventions proposed by the World Health Organization (PEN). During the program in health centres of the above cities, the 10 year risk probability of fatal and nonfatal cardiovascular event incidence are assessed in the target population. Consistent with the likelihood of risk obtained, measures are performed to prevent the disease or its complications. In addition, in the field of cancer (colon, breast, and cervical) as well as asthma, steps have been taken towards the early diagnosis and treatment of the disease. By implementing this program and expanding it to the entire health care system, a 25% reduction in mortality of cardiovascular diseases is expected to be achieved by the year 1404 (2025 AD).

O70

Survey in Collaboration of Private Med Labs and Hygiene Centers of Cities and Villages

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Laboratory testing has a determining role in the diagnosis of diseases and all level 1, 2 and 3 health care centers require to have access to laboratory, in order to cover the health needs of the people. However, the establishment of a medical laboratory is not economically affordable, since it needs validation, equipment, technical manager and trained staff. The expansion of private laboratories across the country has provided the possibility of providing services to health centers by the private sector.



Laboratory and Point of Care Testing (POCT) O71 – O74

For many years, all or the majority of laboratory testing was performed in a medical laboratory. This was necessary due to the complexity of the testing. With computer chip technology, testing has emerged from the laboratory to the patient's bedside, the pharmacy, the physician's office, the patient's home and other non-laboratory sites. This testing is called point-of-care testing and is defined as testing at the point where patient care is given, wherever that is located. With this move outside the laboratory walls some problems occur that were not problems within the laboratory.

The innovation, apparent simplicity and functionality of POCT provide many challenges for health care funding authorities. In particular, the ability to determine the value which POCT may bring to the patient care process. Point-of-Care testing often starts without knowing if the testing is appropriate for the setting. Many times there is a limited understanding of requirements for licensure, training, documentation, and procedures. Soon there may be several types of instrumentation performing the same testing in various areas of a facility. There may be no evaluation or comparison of the values obtained from these different methodologies and they may not correlate well with each other. Cost-savings that may be available through quantity purchasing may be lost. It is important that a Point-of-Care Testing Program at any of the above sites is carefully planned.

The aim of this panel is to summarize existing policies, procedures or guidelines which govern the use of point-of-care testing (POCT) and in particular, any mandatory requirements for accreditation and quality management issues.

Dr. Gh. R. Hamzehloo, DCLS



O71

Implementation of Point of Care Tests in Health Surveillance System (Current Situation and Future Perspective)

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In the last two centuries, the cause of death and global burden of disease has changed from infectious disease and malnutrition to Non-communicable diseases (NCDs). These changes can be explained by epidemiological trends that are the result of significant changes in public health such as improving nutrition and health indicators in the world in 20th century. Currently, 60% of all deaths and 43% of all global burdens of diseases are due to heart and cardiovascular disease, cancer, and type II diabetes. And in low- and middle-income countries, death due to main NCDs is 79% and disability as the result of main NCDs have been 85%, that is estimated they will have been 60% of total burden of disease and 73% of all global death by 2020. Despite of, Occurrence epidemics of communicable diseases (CDs) such as Tuberculosis, HIV, Malaria, viral diseases, gastrointestinal infections, and outbreaks of Corona viruses, Sars, Ebola , New-born and reborn diseases, syndromic surveillance system and potential agents of bioterrorism are global treats yet. And Countries have obligation to early and timely detection of pathogen agents and control of this outbreaks under the international health regulations (IHR). Therefore, in many NCDs and CDs cases, use of rapid diagnostic devices in the site, have determinant role in screening, diagnosing and monitoring of disease and pathogen agents. These devices are widely welcomed currently. In this lecture we will explain the position and application of rapid diagnostic devices in the surveillance diseases and healthcare system, and future perspective of using those devices. We will describe the existing challenges and opportunities too.

O72

Performance Evaluation and Validation of Point of Care in Vitro Diagnostic Devices

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Emerging rapid, and easy technological innovations in healthcare that are used by nonprofessionals outside of the laboratory and at the patient site, have made great changes in the diseases surveillance system. In one hand, point of care testing (POCT) allows for faster clinical decisions making and so physicians requesting manufacturing more of such devices for different kinds of laboratory analytes. On the other hand, because of the variety in manufactures production, consumers are facing different models of such devices; testing just one analyte or pathogen or multiple ones simultaneously according to the newly raised syndromic pattern of surveillance. Regarding the new situation of these test types in the screening/ diagnostic algorithm of diseases specially epidemic prone infectious ones and considering that their results can simply change the disease or many patients category, meeting the determined requirements in the manufacturing process of these devices and the methods used for their quality and performance evaluation should be emphasized deeply. We have attempted to discuss various experiences in different countries and in Iran in this regard. In addition., the future approach of Reference Health Laboratory about Point of Care Testing Devices will be mentioned.



O73

Accreditation of Point of Care Testing

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Point of care testing (POCT) refers to laboratory testing that occurs near to the patient, often at the patient bedside. Advances in technology have resulted in compact, easy-to-use in vitro diagnostic (IVD) medical devices that make it possible to carry out some examinations at, or close to, the location of the patient. Point-of-care/near-patient testing may benefit the patient as well as healthcare facilities. POCT can be advantageous in situations requiring rapid turnaround time of test results for clinical decision making. POCT is laboratory testing and must be treated as such, which includes an understanding of the entire testing process from the pre-analytical phase to the post-analytical phase for anyone performing testing. There are many challenges associated with POCT, mainly related to quality assurance. Risk to the patient and to the facility can be managed by a well-designed, fully implemented quality management system POCT performed in the Hospitals should fall under the responsibility of the laboratory and is subject to laboratory accreditation requirements and the laboratory is accountable for ensuring that the testing is performed in compliance with laboratory accreditation standards The accreditation criteria for POCT are: -Standard EN ISO 15189, Medical laboratories. Requirements for quality and competence in conjunction with -Standard EN ISO 22870, Point-of-care testing (POCT). Requirements for quality and competence Bodies that recognise the competence of POCT facilities may use these International Standards as the basis for their activities. If a healthcare facility seeks accreditation for a part or all of its activities, it should select an accreditation body that operates in a manner which takes into account the special requirements of POCT.

O74

Point-of-Care Testing – Introduction and Application

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Point-of-care testing (POCT), or bedside testing is defined as medical diagnostic testing at or near the point of care—that is, at the time and place of patient care. -Rapid diagnostic tests rely on a state of the art in immunology that did not exist until recent decades. Thus, over decades, testing continues to move toward the point of care more than it formerly had been. The goal is to collect the specimen and obtain the results in a very short period of time at or near the location of the patient so that the treatment plan can be adjusted as necessary before the patient leaves. Many point-of-care test systems are realized as easy-to-use membrane-based test strips, often enclosed by a plastic test cassette. -Benefits: More rapid decision making and triage, reduce operating times, reduce high-dependency, postoperative care time, reduce emergency room time, reduce number of outpatient clinic visits, reduce number of hospital beds required, ensure optimal use of professional time. -POCT implementation requires a systematic approach which involves all stakeholders. Most of the healthcare organization are unfamiliar with the POCT due to which very less efforts are made to establish a complete POCT set up. -POCTCHALLENGES -MANAGEMENT OF POINT- OF - CARE IN THE HOSPITAL -WHOSE RESPONSIBILITY? -TRAINING USERS IN POCT -CHALLENGES IN TRAINING... -NON COMPLIANCE WITH PROCEDURES -RELIABILITY OF POCT RESULTS -POCT CHALLENGES OF END USERS -INFECTION CONTROL -POCT CHALLENGES OF THE DATA MANAGEMENT -LOCATION -BILLING.



Laboratory and Reproductive Medicine O75 – O78

Pregnancy typically causes fundamental changes in all physiological systems leading to establishment of a new pregnancy-compatible physiological balance. Most of these variations revert to the normal level after delivery. Different components of the body is affected by pregnancy including but not limited to electrolytes levels, endocrine and metabolic values, antibody titers, coagulation and hematologic parameters, autoimmune and inflammatory mediators, enzymes and blood chemistry values and levels of organ-specific functional tests. Besides physiological changes of the aforesaid parameters that usually occur during normal pregnancy, pregnancy itself is basically affected by pathological changes of different immune, endocrine, infectious and genetic factors. In this context, reference intervals or ranges for the most of the parameters mentioned above differ considerably from those from healthy non-pregnant women. This is a challenging issue especially when correct interpretation of the results and thereby correct diagnosis and management are concerned. Some of the tests are ordered before pregnancy to detect risk factors associated with pregnancy loss, others are performed at specified times during pregnancy. Still some kinds of the laboratory tests are ordered to women who have increased risk of fetus abnormalities and finally some tests are ordered based on family or individual history of the woman. In this session, we will try to cover immunologic, gynecologic, genetic, endocrinologic and infectious disease tests which are commonly ordered in pregnancy setting with emphasis on clinical laboratory aspects.

Dr. A. H. Zarnani, DCLS, PhD



O75

Vitamin D and Human Reproduction: Past, Present and Future

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The active form of vitamin D, 1,25 dihydroxy vitamin D₃, has well-established classic effects on bone metabolism and mineral homeostasis. The presence of vitamin D₃ receptor (VDR) and the enzymes involved in the hydroxylation of vitamin D and the identification of localized vitamin D₃ synthesis in human placenta and decidua implicates the importance of this hormone in reproductive function. Recently we showed that VDR is expressed in murine reproductive tissues throughout the estrous cycle and pregnancy, indicating the conserved and central action of vitamin D₃ in reproductive biology. Although several physiologic activities have been attributed to the locally produced vitamin D₃ in the female reproductive tract, its action as a potent immunoregulatory molecule has drawn the attention of researchers to put it in the list of those mediators that have well-known immunomodulatory activity at the fetomaternal interface. Successful maintenance of pregnancy requires a finely tuned network of regulatory factors and in this setting vitamin D plays a pivotal role by regulation of local immune responses. Indeed, it has been reported that vitamin D attenuates bacterial infection-induced inflammatory responses in human endometrial culture, suggesting a therapeutic potential of this hormone in infectious disease-mediated pre-term labor and abortion. There is also increasing body of evidence supporting the positive effect of vitamin D in female reproduction including IVF outcome and polycystic ovary syndrome (PCOS). During the past couple of years, we comprehensively studied the immunomodulatory effects of vitamin D in patients with recurrent spontaneous abortion and implantation failure and came to this conclusion that it could be considered as one therapeutic modality in those patients. Indeed, we recently showed that vitamin D exerts favorable effects in endometriosis-related features of human endometrial stromal cells pointing to a biological plausibility for a role of vitamin D, as an immunomodulator and anti-inflammatory agent, in the pathogenesis and treatment of endometriosis. Based on the results of our own experiences and reports available in the literature, it seems that vitamin D is a central molecule governing human reproduction and related disorders. These features, warrant future high quality RCT trials to precisely determine the impact of vitamin D supplementation in human fertility and reproduction.

O76

Thyroid and Pregnancy

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The size and function of thyroid change during pregnancy. For example the range of T.S.H under the impact of placental H.C.G is decreased. Ten to 20% of all pregnant women in the first trimester are Anti TPO and Anti Tg positive. Pregnancy outcome are affected by thyroid problems. Physicians should perform thyroid tests before, during and even after pregnancy in selected patients.



O77

Ovarian Reserve Tests in ART

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Nowadays, women decide to become pregnant, in older ages than the previous generations. So ovarian reserve tests (ORTs) to predict those with poor or good ovarian response are mandatory. In spite of introducing various tests, they are neither ideally sensitive nor specific in prediction of ovarian response or pregnancy rate. It should be emphasized that biochemical ORTs such as FSH, Estradiol and AMH should not be interpreted as the net criteria to predict the ovarian response. Because other more responsible factors such as age, regularity of menses, family history of ovarian insufficiency and the biophysical parameters including antral follicle count (AFC) should also be evaluated in each patient in order to predict fertility more precisely. In fact, all physicians in infertility clinics should distinguish two special subgroups of women as most accurately as possible in order to recommend the best treatment options to each patient: a) young women with diminished ovarian reserve b) aged women with proper ovarian reserve It seems, these tests are just screening and not diagnostic exames. So the first ovarian response to the stimulating drugs may be considered as the best diagnostic test. On the other hand, none of these tests are able to assessthe qaulity of the oocytes. So, patients should not be deprived from thier own oocytes, merely, based on the results of these tests.

O78

Leptin, Adiponectin and Recurrent Pregnancy Loss

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Leptin and adiponectin are two hormones that affect lipid metabolism and body weigh. Recent investigations showed widespread influences of these hormones on gametogenesis, hormone production, immunologic responses, coagulation cascade, vascular smooth muscles and pregnancy outcome. In this presentation, the effect of leptin and adiponectin on recurrent pregnancy loss will be thoroughly highlighted and discussed.



Laboratory and Surveillance System for Communicable Diseases O79 – O84

One of the important tasks of governments is control of communicable disease in community and responding to international health regulations. Statistic monitoring of disease, data gathering, recognizing of epidemics, diagnose of their casing agents and offering programs to control of each epidemic is the main role of health ministry.

Laboratory plays a central role in surveillance system for communicable disease. Diagnosis all of communicable diseases like tuberculosis, Aids, Malaria, Influenza, viral infections and others is Laboratory based. Actually, without Laboratory diagnosis and confirmation of communicable disease agents is impossible.

On the other hand laboratory has a specific position in new And emerging Disease, syndromic surveillance and bioterrorism.

We are going to have a look on currently epidemic disease of Iran like as Corona viruses and Influenza and laboratory facilities roles and requirements for diagnosis and control of epidemics.

Dr. H. Gholami, DCLS

Dr. M. M. Gooya, PhD



O79

TB Lab Network, a Successful Pattern in Surveillance of Communicable Diseases

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The Aim of this study evaluate the TB Lab net work of Iran to achieve this success we should consider the TB Global Found Project as a main & essential stakeholder. On the other hand Deputy of health from Universities implement the infra structure Progress in TB labs establishing. The structure of TB Labs based as a pyramid .the primary stage is Peripheral labs ,the secondry named as culture Labs, the thired TB Regional labs, the forth National Reference Lab (NRL) and the top of pyramid is Reference Health lab (RHL) on the beside of this pyramid TB Lab of Pasture Institute of Iran and Approved & qualified Private Labs.

Keywords: Network TB Labs, Pyramid, Reference Health Lab, National Reference TB Lab, Culture Lab, Direct Microscopy Labs, Pasture Inistitute of Iran, Private Labs

O80

The Role of Laboratories in Future Epidemics

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Many of the diseases that have been diagnosed in recent decades have been unknown to scholars of its time. There fore, the occurence of future similar cases is not unexpected. Occurring new illnesses and genetic alteration is quite possible deliberately or inadvertently. Is existing laboratories able to identify and report unknown agents or mutant agents?To identify the various factors viral, bacterial, toxicological and genetic sequencing of the agents at the earliest possible time creating a laboratory network capable at all levels of biological safety levels is essential. The following items are necessary to create a good laboratory network 1- Establishing laboratories with high safety levels. 2- Providing modern and advanced equipment 3- Employing trained and skilled staffs 4- The provision of sample collection and sample transfer systems 5- The provision of data gathering and data transfer baselines.



O81

MERS (Middle Eastern Respiratory Syndrome) Corona Virus

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In 2013 several clusters of atypical pneumonia has been seen in Jordan and Kingdom of Saudi Arabia with 40% mortality, that epidemiologically all the cases related to residing in Saudi Arabia or travel to there or hospital transmission to health workers and other patients. So it was rational to explore for a communicable (biologic) agent as the causative agent, samples of sputum and blood of patients has been sent to many medical research institutions and shortly thereafter Erasmus medical university in Netherland that had a history of working on corona viruses found that the causative Agent is a new corona virus that named: Middle Eastern Respiratory Syndrome = MERS corona virus and epidemiological researches showed that the main reservoir of this newly recognized virus is several insectivorous bats species of Africa that transferred the viruses to camels (Intermediate host) in Somalia and Somalian camels has been exported to Saudi Arabia for decades. The virus infection in camels are subclinical and infected camels can transmit virus via respiratory secretions to human, that results, differ from asymptomatic infections to sever pneumonia, multiple organ failure and death, Until now 1640 confirmed cases has been reported with 590 mortality (36% mortality), that 1300 cases and 550 mortality has been reported from Saudi Arabia, from 2014 the surveillance system in Iran for MERS began to work and cases of severe respiratory disease (SARI) with history of travel to Saudi Arabia or close contact with such patients MERS PCR on respiratory secretions has been down and till now 2600 cases examined and only a cluster of 6 cases found in Kerman province that 2 cases has come from Hajj pilgrimage and the other 4 take the disease from contact to them with 2 mortality (25% mortality). And veterinary organization has down a survey in 2014 of PCR of MERS on 700 camels in all provinces of the Iran randomly and all tests were negative showed no reservoir of the disease in Iran. There has been no vaccine and drug and the treatment is supportive and due to the risk of hospital spreading the disease, the patients must admitted in negative pressure isolated rooms that we have more than 200 such beds in the country and must be expanded to 500 such beds in the end of 2019.

O82

Influenza Molecular Diagnosis Laboratory Network and It's Challenges in Iran

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Influenza is a serious respiratory disease which affects human health. When an influenza pandemic emerges, all countries will be inevitably be affected. To minimize the impact of an influenza pandemic, a good preparedness plans need to be developed. Timely detection of the virus strains and relevant information is essential for such containment to be successful. Fortunately National Influenza laboratory (NIC), located in Virology Department, School of Public Health, Tehran University of Medical Sciences, has been working on Influenza as a member of WHO's network of influenza centers since 1976. NIC detects, isolates and identified circulating Influenza viruses in Iran and shipped the isolates to WHO Collaborative Center them to WHO as possible vaccine candidate in timely manner. Emerging new influenza viruses create threats to public health; platforms for rapid detection and characterization of influenza viruses are critically needed to prevent and respond to any potential outbreaks. In 2009, after emerging the new variant of H1N1 subtype of Influenza virus, the Ministry of Health of Iran helped NIC to be developed and also started to establish a laboratory network to minimize the impact of influenza pandemic. The development of molecular methods for the direct identification of specific viral genome from clinical sample is one of the greatest achievements during this period so for the safe and rapid diagnosis. Molecular technologies including conventional and Real time PCR were established. Currently, there are 12 sub-national laboratories, geographically distributed in the country and these laboratories 'network covered all provinces. The level of planning is still inadequate to deal with such a major public health crisis especially inadequate equipment and material and lack of specific and sustainable budget are main challenges. We hope with a general look, this lab network can act as a strong lever in controlling not only influenza also other infectious disease.



O83

Ebola Virus Disease: a Review on Epidemiology and Laboratory Diagnosis

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In 2104, the largest, most severe and most complex Ebola epidemic in the nearly four-decade history of the disease occurred. The outbreak started on December 2013 in south-east of Guinea (in West Africa) in an outlying village, and after spreading in the country, it entered into neighboring countries of Liberia and Sierra Leone. Although the most cases of the disease were in the Guinea, Liberia and Sierra Leone, there were also imported cases in other countries (Spain, USA) due to health care workers and international rescuers infection and their return to their own countries. Ebola virus is a zoonotic virus and can be transmitted from human to human. The virus consists of five different species while Zaire species has been the cause of current outbreak. The virus has totally infected 28637 cases in the main three infected countries; among them 15215 cases were reported as laboratory-confirmed cases, and 11315 as total deaths. Rapid laboratory diagnosis of the virus is of vital importance, and due to similarities in signs and symptoms of the disease to some prevalent diseases like malaria, the differential diagnosis of the disease should also be seriously considered. The main laboratory method for Ebola virus detection is based on genome amplification and detection methods, of them, Real-Time PCR is the most common one. Due to the risk level of testing the infected samples, several biosafety measurements should be implemented while working with the samples. Serological assays should be performed under special conditions, and virus culture is only possible in the presence of the highest biological safety level (BSL-4) facility.

O84

The Importance of Health Security and the Role of the Laboratory in Public Health Security

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The topic “human security” in today’s world and human being’s life has a specific status that the development of countries whether poor or rich depends on it. The various aspects of human security such as social, political and economic security have been always considered and continuously been scrutinized. But nowadays another aspect of human security has been developing day by day and its importance has been dominating more and more. The so-called aspect is “health security”. We are living in a world that health security has been severely at jeopardy during the recent years and decades and also been regarded magnificently. The health scientists believe that during human life, the health security has never been threatened this much. The growing world population, increasing irregular urbanization in the cities with low-level facilities, turmoil in different regions in the world, the ever-increasing exigencies, and climate changes, etc. are the risks which jeopardize the health security of human beings. Health security of human beings related to a city, a province or a country is connected to the whole world. A contagious disease or a terrorist incident can pass through a number of continents in a few days and not only give shock to health systems but also paralyzed and disable them and threaten numbers of human beings’ lives. This has happened over and over in human history. In this recent century epidemics such as Influenza, SARS, Ebola, COV, MERS and the latest virus ZIKA are as such and all of them alone have shown that how weak and inefficient is the health security system to confront, anticipate and prevent these situations. On the other hand, these epidemics always have reminded the health security system another point and which is political elasticity i.e. the high political commitment during these exigencies but at the end of the day most of the priorities are bound to be forgotten. By the way, what we consider seriously as the strategies of the health security in the world are as follows: 1-The existence of national biosecurity system to take care of dangerous pathogenic factors 2-The existence of a powerful system of biosafety and biosecurity 3- Creating a consistent laboratory network with the modern equipment that covers at least 80 % of the country 4- Reinforcing educational programs such as field epidemiology and its connection with laboratory system 5- The vital role of laboratories to confront the emergencies (the country and thus laboratory system should be ready to act within 120 minutes from the beginning of the emergency outbreak) 6-Taking specific locations and populations into consideration 7- The important topic of antimicrobial resistance and its ever-increasing importance 8- Non-standard diagnostic equipment, methods and kits

Actions 1- Integrating the country’s early warning surveillance system (syndromic surveillance system) with the laboratory surveillance system and pilot statistics in a province. 2- It enables the laboratory system to act quickly after the warning of syndrome system and to identify the pathogenic factors that have created the considered syndromes. 3- The neck and neck co-ordination and co-operation of the disease management center with the laboratories to reach the consistent network and continuing collaboration after that. 4-The present system serves diarrhea and chronic respiratory disease that will develop into 14 syndromes very soon.



Laboratory and Transfusion Medicine O85 – O90

Transfusion medicine has long been associated with the laboratory and safe blood transfusion relies heavily on laboratory. The discovery of the ABO blood group antigens and antibodies on red blood cells and plasma in 1901 and then the discovery of Rh antigens in 1940 by Landsteiner, was the beginning of the continuous and constant cooperation of laboratory to support the provision of compatible blood for transfusion. Since then significant advances, emerged in laboratory tests as well as in blood transfusion medicine, have turned capable laboratories especially hospital blood banks into power arms of blood transfusion.

Today, laboratories have become highly efficient not only in identification of antigens and antibodies of the ABO blood groups but also in identification of other antigens and antibodies that may cause adverse reactions in recipients. The identification of these antigens and antibodies has led to remarkable advances in prevention of hemolytic reaction complications in newborns.

One of the serious problems of blood transfusion has been the transmission of viral disease. The use of screening kits and their continuous improvement and also the application of molecular tests in identification of diseases such as Hepatitis and AIDS have resulted in outstanding advances in safety of blood and blood products.

Fortunately, with the establishment of Haemovigilance system and monitoring and evaluation of blood from donors to recipients and also by identification, diagnosis, reporting and analysing all transfusion related unwanted events, and taking appropriate corrective actions to prevent their recurrence, a new step forward has been taken to improve the safety, efficacy and efficiency of blood transfusion.

Dr. A. A. Pourfatollah, PhD



O85

Implementation of Antibody Screening in Pre-Transfusion Testing

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1- IBTO's Immunohematology Reference Laboratory References: AABB Technical manual 2014

The advantages of such a program are: - The patient serum is tested against unpooled reagent red cells carefully selected to carry as many antigens as possible D,C,E,c,e,M,N,S,s,P1,Lea,Leb,K,k,Fya, Fyb, Jka and Jkb - Early detection of antibodies prevents the postponement of surgery that may occur when antibodies are not detected until compatibility tests are done just before surgery. - Donor units can be typed where necessary, with potent antibodies as well as being tested with the patient's serum. - Those patients requiring rare blood k -, KP (b-), JK (a- b-), etc. are recognized in time. - The screening tests sometime detect an antibody present in a patient's serum, when that antibody fails to react in cross match test. - As RBC ages antigen expression begins to weaken, to maintain integrity. - Standard prepared screen cells are diluted in a preservative solution. - Cost of pre-transfusion test can be reduced. Modern Blood Banking 2012.

Keywords: HDFN, Antibody Screening Test

O86

The Role of POC Coagulation Testing in Patient Blood Management

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Patient Blood Management is a multidisciplinary, evidence-based approach to optimizing the care of patients who might need blood transfusion. Three-pillar matrix of PBM are; optimizing erythropoiesis, minimizing bleeding and tolerating anaemia. Coagulopathies are through the main perioperatively causes of bleeding which increase tendency to bleeding and therefore need to transfusion. The conventional hemostatic tests reflect only the initial formation of thrombin in plasma and are unaffected by any of the corpuscular elements of the blood. None of the Conventional coagulation tests convey any information about clot stability and fibrinolysis over time. Furthermore Coagulation tests results typically become available 40 to 60 minutes after blood drawing. This turnaround time is so long that the results may not reflect the current state of the coagulation system and lead to inappropriate treatment. There are several POC (bedside) techniques for coagulation testing that can be used in all phases of perioperative patient; i.e: ACT, Aggreogmetry and Viscoelastic based techniques. The use of these tests, may partly compensate for the methodological limitations and diagnostic shortfalls of conventional coagulation testing. POC coagulation testing is faster and more comprehensive than the conventional laboratory tests in perioperative setting and enables effective hemostatic treatment. Multiple randomized trials have revealed that the use of POC tests for hemostat lead to lower perioperative blood loss and therefore lower rate of transfusion of allogenic blood products. It seems the use of POC testing in hemotherapy algorithms for perioperative setting can have an effective role for implementation of PBM programs.

Keywords: Patient Blood Management, POC Testing, Coagulation Disorders



O87

Patient Blood Management and the Future of Blood Transfusion

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Blood transfusion from the laboratory vantage point is one of the oldest medical academic disciplines. At the beginning of the 20th century, it was the wise approach of Karl Landsteiner at the laboratory setting that made the centuries-long challenge of the therapeutic application of blood transfusion to be overcome and transplantation of the fluid tissue (blood) possible thereby leading to major developments in transplantation, surgery, and the medical sciences in general. This much progress has made blood transfusion and hospital blood banks indispensable components of the health and care system. Blood transfusion has faced many challenges and been exposed to a range of events during its 120-year-long history. The incidence of transfusion transmitted infections and the occurrence of newly emerged diseases together with the challenge of HCV and HBV infections among blood recipients have brought about major changes in the domains of blood transfusion and transfusion medicine. One of the recent issues given birth to by these challenges and changes was the program of patient blood management in which the patient blood is tried to be saved and the blood loss prevented in order to minimize or remove the need for allogeneic blood transfusion. Patient blood management (PBM) is based on three pillars of (1) managing hemostasis and coagulation to minimize blood loss and bleeding, (2) managing preoperative anemia, and (3) optimizing tolerance of anemia. The present study aims to address developments in patient blood management and reflect over the future of PBM-wise blood transfusion and transfusion medicine.

O88

Challenges in Selection of Test Kits for Blood Donations Screening and Diagnosis of HIV, HCV and HBV

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HIV, HBV and HCV were defined as public health problem throughout the world. Detection of HIV, Hepatitis B and C is a major challenge for testing laboratories especially in a resource poor setting. Blood transfusion is important and saves millions of life every year, however blood and blood components can carry transfusion transmissible infections caused by these fatal blood borne pathogens if the quality of testing is compromised. Conventional ELISA is regarded as the mostly used screening technique and in two recent decades the NAT is used for reduction the window period and increasing blood safety. The most important test kits requirements include high level of sensitivity and specificity, reproducibility, long shelf life, ease of performance and finally reasonable cost. Other requirements should be considered such as laboratory infrastructure, equipment necessary to perform the test, performance time, storage condition, technical skill of laboratory staff, sample and reagent verification and laboratory logistics (interval supply of kits, availability and stability of electrical source, qualifications and maintenance of equipment, spare parts and availability of service). The requirements should be documented and kits evaluated according it. The kits can be issued if the kits meet the requirements.



O89

Challenges of Blood Safety in World

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Safety of the blood supply has been a concern since the foundation of blood transfusion medicine. Transfusion-associated infections have been drastically decreased in countries where routine screening of donors and donations are implemented. Blood safety starts with donor selection. Testing of blood donations was implemented since 1970 with HBsAg screening. Tests for detection of HIV-1/2, HTLV-I/II, HCV, CMV, T-cruzi, Dengue virus, Chikungunya virus and WNV have been successively added in different countries with different epidemiologies and resources. Since 1990, genomic amplification methods (NAT) have been applied to large-scale blood screening for detection and/ reduction the window period of blood borne pathogen. Global database on blood safety (WHO) on 2011 reported: Around 92 million blood donations are collected annually from all types of blood donors (voluntary unpaid, family/replacement and paid). In 39 countries, blood donations are still not routinely tested for transfusion-transmissible infections (TTIs) including HIV, hepatitis B, hepatitis C and syphilis; 47% donations in low-income countries are tested in laboratories without quality assurance. Irregular supply of test kits is one of the most commonly reported barriers to screening. 97 of 164 countries provide data on whether blood donations are screened in a quality- assured manner. The median prevalence rate of TTIs in blood donations in high-income countries is much lower than the rate in middle- and low-income countries. It is estimated that 1.6 million blood donations are discarded due to the presence of infectious markers for TTI, including HIV, hepatitis B, hepatitis C and syphilis.

O90

Hemovigilance

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The term hemovigilance is derived from the Greek word 'hema' = blood and the Latin word 'vigilans' = watchful. Hemovigilance is defined as a set of surveillance procedures covering whole transfusion chain from the collection of blood and its components to the follow up of its recipients, intended to collect and access information on unexpected or undesirable effects resulting from the therapeutic use of labile blood products, and to prevent their occurrence and recurrence. Thus, the ultimate goal of a hemovigilance system is to improve the safety of blood transfusion. Hemovigilance is used to track and reduce the occurrence of adverse events associated with blood donations. Hemovigilance is one of the most important activities of professionals in the field of blood transfusion. All professionals who deal with transfusions are involved in blood safety, from the blood bank director to quality managers, donor physicians, nurses, phlebotomists, laboratory technicians, transfusing physicians and hospital nurses. In transfusion medicine, quality starts with the process of attracting, recruiting and informing blood donor candidates and extends through all the transfusion chain to the transfused patient. Even with precise indication and correct administration, blood transfusion procedures have inherent biological risks related to health with the potential of transfusion incidents (TI), whether immediate or delayed. TI are defined as injuries occurring during or after blood transfusion that are related to the procedure. All professionals involved in prescribing and administrating blood products must be trained to identify and manage TI and to establish measures to prevent future incidents.



Laboratory and Viral Opportunistic Infections O91 – O94

Patients with immune deficiency are susceptible to a variety of infections such as viral infections. In some cases immunodeficiency is either primary or congenital. However, in most cases, this condition is established for various reasons such as malnutrition or medical treatments such as chemotherapy, immunosuppressive drugs, organ transplants, cancer or HIV infection. Early diagnosis of viral opportunistic infections, is very important in the prevention, control and treatment of patients. Therefore, patient management by physicians before and after immunosuppression on the one hand and rapid and accurate diagnosis of the infectious agent by laboratories on the other hand is very important in this regards.

One of the main goals of the Laboratory and Viral Opportunistic Infections topic, is the interaction between doctors and laboratory experts for exchanging knowledge and professional opinions on the treatment management and laboratory diagnosis of these infectious agents. In this session, important clinical aspects related to the most common viral opportunistic agents in patients with acquired immune deficiency such as transplant patients or those undergoing chemotherapy, are presented by specialist doctors. Specialty tests and new laboratory diagnostic methods, available for identifying viral opportunistic infections and patient monitoring are also discussed by the experts in the field of laboratory diagnostics.

Dr. M. Parsania, PhD



O91

Immunological Methods in Diagnosis of Herpes Virus Infections in Immunocompromised Patients

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Herpes viruses such as Herpes simplex virus (HSV), Cytomegalovirus (CMV) and Epstein-Barr virus (EBV) are important viral agents causing different infections in immunocompromised patients. Early diagnosis, often possible with the use of rapid detection assays, is essential for optimal management and prevention of these infections among immunosuppress patients. Specific therapy of opportunistic infections often requires laboratory diagnosis. There are different methods used for the laboratory diagnosis of viral infections such as viral isolation in cell culture, antigen detection, serology tests for diagnosis of specific antibodies and molecular techniques for detection of nucleic acid. There are various immunological methods for diagnosis of Herpes viruses. The diagnosis of EBV infections can be performed by detection of virus-specific IgM and IgG antibodies against viral capsid antigen (VCA), early antigen (EA) and Epstein-Barr nuclear antigen (EBNA) by enzyme immunoassays methods. Antigen detection tests based on immunofluorescence (IF) assay are used for detection of Herpes simplex virus infections. Antigen detection methods are useful for viruses that grow slowly such as CMV. The pp65 antigenemia assay is one of the rapid method for monitoring transplant recipients for evidence of CMV disease. Although rapid antigen detection tests are now widely used in routine laboratories, but the specificity and sensitivity of these tests are less than molecular techniques such as polymerase chain reaction.

O92

Clinical Aspect and Application of Laboratory Test in Herpes Virus Infection

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Cytomegalovirus (CMV), Epstein Barr Virus (EBV), Herpes Virus (HSV) are double-stranded DNA virus and is a member of the Herpesviridae family. At least 60% of the population has been exposed to them, with a more prevalence in high-risk groups (eg, unborn babies whose mothers become infected with CMV during the pregnancy or people with HIV. CMV usually causes an asymptomatic infection or produces mild flulike symptoms; afterward, it remains latent throughout life and may reactivate. Most patients with CMV infection exhibit few clinical findings on physical examination. Primary CMV infection may be a cause of fever of unknown origin. Symptoms, when apparent, develop 9-60 days after primary infection. Pharyngitis may be present and examination of the lungs may reveal fine crackles. The lymph nodes and spleen may be enlarged, so CMV, EBV and HSV should be included in the differential diagnoses of infections that produce lymphadenopathy. In immunocompromised individuals, symptomatic disease usually manifests as a mononucleosis syndrome. Symptomatic CMV disease can affect almost every organ of the body, resulting in fever of unknown origin, pneumonia, hepatitis, encephalitis, myelitis, colitis, uveitis, retinitis, and neuropathy. Rarer manifestations of CMV infections in immunocompetent individuals include Guillain-Barré syndrome, meningoencephalitis, pericarditis, myocarditis, thrombocytopenia, and hemolytic anemia. In patients with HIV infection, CMV involves the entire GI tract. Retinitis is the most common manifestation of CMV disease in patients who are HIV positive. CMV has been detected via culture (human fibroblast), serologies, antigen assays, polymerase chain reaction (PCR), and cytopathology. In the transplant population, antigen assays or PCR is used (sometimes in conjunction with cytopathology) for diagnosis and treatment determinations.

O93

Viral Opportunistic Infections in Cancer Patients Undergoing Chemotherapy and Transplant Patients

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Hematopoietic cell transplant (HCT) recipients, especially those who have received allogeneic transplants, are at increased risk for a variety of infections depending upon their degree of immunosuppression and exposures. Infection in HCT recipients is associated with high morbidity and mortality. Viruses of major importance in HCT recipients include herpes simplex virus (HSV), varicella-zoster virus (VZV), cytomegalovirus (CMV), Epstein-Barr virus (EBV), respiratory viruses (eg, influenza, parainfluenza, respiratory syncytial virus, adenovirus), human herpes virus 6 (HHV-6), hepatitis B, and hepatitis C. Antiviral prophylaxis or preemptive therapy against some of these viruses is recommended for HCT recipients, Evaluation for viral infections before HCT, prophylaxis of some of these infections in HCT recipients especially CMV is essential, and immunizations in HCT candidates for Influenza, and hepatitis B virus are recommended. HSCT is associated with profound compromises in host barriers and all arms of innate and acquired immunity. The degree of immune compromise varies by type of transplant and over time. Immune reconstitution occurs within several months after autologous HSCT but takes up to a year or longer after allogeneic HSCT. In those patients who develop chronic graft-versus-host disease, immune reconstitution may take years or may never completely develop. Over time, with strengthening immune reconstitution and control of graft-versus-host disease, the risk for viral infection dissipates.

O94

Molecular Diagnosis of Viral Infection in Transplantation

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Viral infections are common complications after hematopoietic stem cell and solid organ transplantation. Fortunately, improvements in viral diagnostics, such as utilization of PCR technology-based molecular diagnostic methods as replacement of traditional methods facilitate the early and rapid diagnosis of viral infections and application of prophylactic and preemptive strategies limits the reactivation of latent viruses and development of viral diseases. The data show that respiratory viruses, herpesviruses and BKV / JCV are the most common dangerous pathogens. In herpesvirus family, CMV, EBV, HSV and HHV-6 are import pathogen in transplant recipients. A wide range of respiratory viruses have been identified as causes of significant morbidity and mortality among transplant recipients, including: influenza, RSV, PIV, rhinovirus, hMPV, and coronavirus. Laboratory diagnostic methods mainly include viral culture, serologic testing, antigen and nucleic acid detection. The golden standard for diagnosis of most viral diseases is finding of specific histopathological features and detection of virus in the involved tissues. However, biopsy is often infeasible in transplant recipients, considering that most viral diseases occur at the early stages of transplantation. Viral culture is unsuitable in the early diagnosis because it routinely takes days to weeks and requires specific cell lines. Serology is less helpful for clinical decision in the transplant recipients, because transplant recipients are usually unable to mount sufficient antibody because of immunosuppression. Techniques of antigen detection, including fluorescent antibody assays and enzyme immunoassays, are rapid diagnostic methods but the limitation of these methods is poor sensitivity compared with molecular techniques. Application of PCR techniques in the detection of viral nucleic acid rapidly develops the viral diagnostics. Now, real-time quantitative PCR is replacing traditional gel-based PCR because it can reflect the changes of viral loads. The availability of these modern diagnostic tools facilitates early diagnosis and timely intervention of viral infections. Nucleic acid amplification assays appear to be the most sensitive diagnostic tools available and most allow for simultaneous detection of a broad range of pathogens or co-quantification from a single sample and is therefore preferred testing method for immunocompromised patients.



Laboratory Challenges in Adrenal Gland Disorders (hyper- and hypocortisolism) O95 – O99

The adrenal glands are composed of two major distinct parts called cortex and the adrenal medulla. The adrenals are responsible for the synthesis and secretion of several hormones in the body. Cortisol is one of the most important hormones in the body which is secreted from the adrenal cortex in response to stress and / or reduced blood glucose under the stimulation of ACTH hormone. The increase or decrease in cortisol levels (hyper- and hypocortisolism) due to primary or secondary causes lead, to important diseases that if not diagnosed and treated early, serious complications and even death may occur.

Today, diagnosis and treatment monitoring of hyper- and hypocortisolism are entirely dependent on clinical laboratory and several tests are used for this purpose.

The measurement of total and free cortisol in blood, urine and saliva samples using advanced methods and instruments for quick and accurate diagnosis of the disease is of great importance. However, the standardization of these methods in Iran faces serious challenges and problems. In order to overcome the challenges, the cooperation of the health reference laboratory, clinical and laboratory scientific associations, kit manufacturing companies and equipment suppliers, is inevitable.

In this topic of the 9th International and 14th National Congress on Quality Improvement in Clinical Laboratories, it will be tried to discuss the challenging issues in different aspects of measuring cortisol and ACTH in clinical samples, particularly the issues in Iran such as patient education, quality assurance and availability of equipment and optimal and standard laboratory methods, recommended by international organizations.

Prof. A. Esteghamati, MD



O95

Hypo and Hypercortisolism: Clinicians' Expectations of Laboratories

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Endocrine diseases diagnosis and treatment is closely linked to laboratory. Since most cases may be asymptotic or present minor symptoms in primary stages, disease diagnosis relies on use of stimulatory and inhibitory dynamic tests in addition to basic tests. In adrenal gland disorders, diagnosis of hypo and hyperadrenalism is a significant diagnostic challenge in the field endocrinology. Primary hypoadrenalism, Addison's disease, is secondary to various reasons; But sometimes this condition may be central and occurs due to failures of pituitary and hypothalamus, so their differential diagnosis is much more essential. Because the initial symptoms of adrenal insufficiency might be mild or even non-specific, in addition to measurements of hormone baseline levels, stimulatory test for definitive diagnosis of primary failure and its differentiation from secondary conditions is necessary. Screening test is performed using 250 mg of intravenous or intramuscular cosyntropin and subsequent measurement of plasma cortisol levels after 30 minute or up to one hour. The normal cortisol response is 19 micrograms and lower levels indicate primary or secondary failure. Therefore, the accuracy and precision of sampling is vital for detection and changes in response diagnosis could impair diagnosis and treatment. Elevated levels of serum glucocorticoids are called Cushing's syndrome. Etiological classification of diseases is based on ACTH, and divided to ACTH-dependent or independent. ACTH-dependent Cushing's syndrome related to pituitary adenoma, aberrant ACTH secretion, aberrant secretion of CRH and ectopic ACTH administration. Many of tumours can be sources of ectopic ACTH secretion. ACTH-independent causes include adrenal adenoma and carcinoma, macro nodular or micro nodular hyperplasia or administration of exogenous glucocorticoids. To distinguish different causes of Cushing's syndrome, series of screening test or definitive diagnosis tests are usually performed. Screening tests include measurement of 24-hour urine free cortisol, salivary cortisol or nocturnal dexamethasone suppression test and other tests like measurement of ACTH, 48-hour dexamethasone suppression test, CRH test and even IPSS. In each of the above, method of sample collection, measurement time, pre testing time, sampling date recorded on the basis of baseline testing and after taking the drug, especially against Dexamethasone Suppression test, is important for interpretation. Errors in each case lead to test repetition, increased costs, time consumption and improper diagnosis and treatment, that will discuss in detail.

O96

Quality Assurance in Cortisol Determination

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The result of a mistake in cortisol assay in serum/plasma, urine and recently in saliva, may be serious if it is used to selection clinical management. Thus careful selection, assessment, and control of laboratory tests for cortisol are essential. Such as other hormonal tests, the pre-analytical, analytical and post-analytical steps must be carefully controlled with attention to the general and specific problems associated with each type of assay. Apparently the responsible lab man must have a good selection for laboratory techniques of cortisol, in spite of existence of a number of assay types based on different principles of assays, but immunoassay is the most used method for cortisol assay. Enzyme immunoassays are the most widely used methods. The four quality parameters such as the standard curve, sensitivity, the assay range, precision and accuracy are the most important methodological parameters. Quality control and quality assessment items for cortisol assay, some must be consider for all immunoassays and some are exclusive for cortisol as analyte. It is mandatory to incorporate sufficient concurrent quality-control samples to validate the results of cortisol tests. These should include determination of the parameter at normal and abnormal levels to give confidence about all results in a wide range of normal and abnormal results which may be encountered in routine practice. This step should be used in accompany with regular participation in external quality assessment. EQA programs can collect and offer good information related to the performance of the cortisol assay, including the sample related items, method dependent parameters, personals and also instruments. Herein, we describe all steps including patient preparation, sample collection, transport and storage, method dependent items, tools, instruments, environments and personal dependent items.



O97

Salivary Cortisol: Clinical Value and Laboratory Considerations

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Cortisol hormone is the main glucocorticoid composed from cholesterol in the adrenal cortex. Both its synthesis and production are increased under the stimulation of pituitary Adrenocorticotropic Hormone (ACTH) in response to stress and / or hypoglycemia. According to the latest criteria of 2016, the state of hypercortisolism is diagnosed by the following tests: Late night salivary cortisol, Urinary free cortisol excretion, and Low-dose dexamethasone suppression test. Salivary cortisol has some advantages over other two above tests, including non-invasiveness, precision, and cost efficiency. The definitive cut-offs for categorizing the patients vary based on the method used. So, it should be determined for each method and population. It is of great significance to note, however, that salivary cortisol has a tendency to increase with age and cardiovascular diseases such as hypertension and diabetes. Hence, its discriminating robustness diminishes in the elderly people. The great majority of salivary cortisol determinations are performed using different formats of immunoassays. But Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS) has been introduced as the reference method. From the point of the clinical laboratory practice, sampling protocols and procedures for measuring salivary cortisol are to be standardized, as well.

O98

Quality Assurance in ACTH Measurement

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Adrenocorticotropic hormone (ACTH), a polypeptide hormone, produced in the anterior pituitary and serves to stimulate steroid production and secretion by the adrenal cortex. ACTH determination is used clinically in the differential diagnosis of adrenal disorders. In Addison's disease (primary adrenal insufficiency), elevated levels are characteristic, whereas in adrenal insufficiency low/normal levels of ACTH are secondary to pituitary dysfunction. ACTH determinations can also help to identify the cause of cortisol hypersecretion in Cushing's syndrome, in which levels are typically low when it is due to hyperplasia or tumors of the adrenal cortex, and high when it is due to ectopic ACTH production or hypersecretion of ACTH by the pituitary. Plasma levels of ACTH reveal a significant diurnal variation, emphasizing the importance of standardization of time of blood collection. Furthermore ACTH, because of its high instability due to proteolytic degradation, needs special pre-analytical consideration for specimen collection and storage. Immunoassays are the most common methods for ACTH measurement in clinical laboratories. Interference in ACTH immunoassays, due to substances that affect the measurable concentration of the analyte or modify antibody binding, although not common, is a potentially clinically significant problem when it leads to the misinterpretation of the patient's results, the needs for further diagnostic tests and inappropriate treatments. Therefore, awareness of laboratories regarding interfering substances in ACTH assays and establishment of constant laboratory-physician contact are vital to prevent incorrect interpretation of patient results. Implementation of standard quality control protocols is also essential to achieve reliable ACTH results. Here we will discuss important issues about ACTH assays including pre-analytical considerations, assay methods and quality assurance



O99

External Quality Assessment by ESfEQA

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Proficiency testing is defined in ISO/IEC 17043 as the evaluation of participant performance against pre-established criteria by means of interlaboratory comparisons. Thus, proficiency testing is an essential part for maintaining and improving the quality in medical laboratories and complements the internal quality control run in a laboratory to monitor the daily performance. The synonymously used term External Quality Assessment (EQA) emphasizes the conjunction between internal quality control and proficiency testing/external quality assessment. ESfEQA – the European Society for External Quality Assessment – offers laboratories a wide range of EQA schemes organized in the four areas biochemistry, hematology, immunology and virology. Most of the schemes are offered with four surveys per year, others have a monthly schedule. Participation in the ESfEQA programs enables laboratories to compare their analytical performance within a peer group using the same analytical instrument but also to other groups using different techniques. ESfEQA was founded 2013 in Germany and has built up an international network of participants to include laboratories from several countries and continents. This has been achieved by a cooperation with local organizations that distribute the samples locally and provide first-level-support to the participants. Participants submit their analytical results online via the web application TEQA. Reports can be downloaded by the participants from the same web application and can be printed and saved on a local device. The target value for each quantitative survey is defined as the consensus value and calculated in compliance with ISO 13528 by Algorithm A. The acceptance criteria for the maximally allowed deviation is defined in the ESfEQA survey schemes according to the biological variation of the individual analyte. Each participant receives an individual report that indicates the laboratory result, the allowed deviation, the z-score and the bias. These statistical data enables each participant to assess his performance and to derive corrections and improvements for his analytical procedures.



Laboratory Sciences Education: Technical Officer (Technician) Supply

Even though in recent years the software and hardware medical diagnosis laboratories equipment have been increasing considerably and automation takes the charge of human resources significantly, along with this, the necessity of a skilled and professional human force that is equipped with sufficient knowledge, preparation and skill to utilize the mentioned equipment is also increasing.

The professional human forces is required in clinical laboratories with various educational levels and in medical and non-medicals fields and if the laboratory tends to reach appropriate and favorable standards and quality, it should provide human forces according to legal requirements, although at the moment there is no particular standard, for each laboratories which has about 20 to 50 patients 5 to 7 human forces are required.

The number and variety of the tests in the recent years have been growing hugely and nowadays a great number of laboratories are able to perform molecular tests and this will add to the necessity of skilled human forces, the complex processes of a test and the principles of random and systematic errors, the apparent role of human resources in these errors approves the legal requirement of the significance of the presence of a skilled and experimented technical authority in each shift in the laboratory. The technical authority according to the law has defined duties and obligations that shortcomings to care for the mentioned obligations not only deteriorate the quality of the work but also has disastrous legal consequences.

A simple survey conducted about the available numbers of technical authorities and the required numbers shows that the educational resources of delivering technical authorities that are bound to the professional course of pathology in medical universities, are not sufficient to the future needs of the country and with no doubt would create a great problem in laboratory services in upcoming years.

Who should edify the strategies and implementation policies of this requirement?

How much time we have till the looming of the mentioned crisis?

Which educational program scientifically can meet the demand of the mentioned requirement?

How long should this educational course take?

Students from which courses and levels should be admitted to be qualified in technical obligations of the laboratories?

To what extent is important the economic position, costs and profitability of the mentioned educational courses?

Dr. Y. Pourkhoshbakht, DCLS



Molecular Diagnostics in Clinical Laboratories O100 – O104

Objective: to address existing problems and to improve the quality of molecular sections of laboratories in Iran, according to national and international standards.

Description: It has been more than ten years that molecular diagnostic tests are used in Iran for diagnosis, determining treatment type and monitoring, as well as for prognosis and response to drug.

With the progress in science and technology on the one hand, and serious needs for clinical guidelines to assess patient outcome, that reveals the need for correct, accurate and fast diagnosis more than before, the importance of molecular diagnostics is illustrated.

The molecular diagnostics section, as a part of the clinical laboratory, requires establishing a quality management system. Monitoring of this system using internal and external audits can contribute to improvement of the quality of services in this field.

Lack of uniformity and similarity in test results reported, will make more challenges for doctors in molecular diagnostics than the other diagnostic tests. This is because that the technology and knowledge in this field will require further interpretative recommendations.

In this topic, it will be tried to take the effective steps to improve the quality of services, with a review of the views of clinicians to molecular laboratory services in the country, along with presentation of the results of evaluation of these sectors, as well as consideration of standards and error sources, and finally, the establishment of quality management system, with an emphasis on quality assurance as well as assessment and validation procedures of Kits, consumables and equipment.

Active participation of professors and experienced colleagues in this topic, can provide a proper ground for scientific discussion on the opportunities and challenges of molecular diagnostics in Iran and a future roadmap for the country.

Dr. B. Poopak, DCLS, PhD



O100

Noninvasive Prenatal Testing for Trisomy 21, 18,13 and Sex Chromosomal Aneuploidies –First Report on 1380 Pregnancies from Iran

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There is general agreement that Non-Invasive Prenatal Test (NIPT) is currently suitable for women identified as being at high risk for common autosomal trisomies (e.g., 21, 18 and 13). Here we report the application of the NIPT for the first in Iranian population. In collaboration with Beijing Genomic Institute (BGI), NIPT was performed on 1380 high-risk pregnancy samples referring to DNA laboratory, from 1st of Sep. 2012 to end of March 2015. 24 out of 1380 were turned out to be positive (1.7%). 18 out of 24 were T21 positive (75%), 2 out of 24 was T18 positive (8.3%), 1 out of 24 was T13 positive (4.2%), 1 out of 24 was turner syndrome (4.2%), 1 out of 24 was 47XXY (4.2%) and 1 out of 24 was triple X(4.2%). 22 out of 24 could be confirmed either by karyotyping, QF-PCR or MLPA. So the specificity of NIPT in these 1380 samples were $1378/1380 = 99.85\%$ and false positive rate was $2/1380 = 0.14\%$. No false negative was identified (sensitivity of 100%). 32 out of 852 cases were twin pregnancies. In our cohort, the accuracy of NIPT for ruling out aneuploidies for twin pregnancies was 100%. Our results on Iranian population showed that NIPT can provide a very high sensitivity and specificity (100% and 99.85% respectively) in screening of T21, 18 and 13 as well as sex chromosomal aneuploidies in high-risk singleton and twin pregnancies. Further studies with larger sample sizes as well as checking it in the low-risk pregnancies seems to be necessary.

Keywords: Noninvasive Prenatal Testing, Down Syndrome

O101

Investigation of IVS10-11G>A, R261Q, R252W, R261X, and IVS11+1G>C Mutations on PAH Gene of PKU Patients from Mazandaran and Golestan Districts of Iran

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There are more than 500 different mutations on PAH gene that is responsible for PKU diseases and the spectrums of these mutations are varied in different populations. The aim of this study was to identify the frequency of five common mutations on PAH gene among patients with PKU in Mazandaran and Golestan provinces. A total of 40 unrelated PKU patients 22 of them with Mazandarani origin and 18 with Golestani origin were enrolled the study. Genomic DNA was extracted from leukocytes using Qiagen DNA extraction kit and PCR- RFLP method was used to detect five common mutations including: IVS10-11G>A, R261Q, R252W, R261X, and IVS11+1G>C. 3 out of the 5 investigated mutations were identified among the subjects. In 26 alleles the mutation was found. Of the identified mutation IVS10-11G>A has the highest frequency (27.5%) and the allelic frequency of R261Q and R261X mutations were 3.75 and 1.25% respectively. In Golestan province only IVS10-11G>A mutation was observed in mutant alleles (43.75). The high frequency of IVS10-11G>A mutation in Golestan province may be related to genetic drift, founder effect and consanguinity.

Keywords: PKU, PAH, Mutation

O102

Molecular Laboratory Standards and Sources of Error

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Today molecular diagnostics play a central role in diagnosis, determination of prognosis and choosing right treatment. However, not only do DNA, and RNA from different sources are used, but multiple steps are involved in molecular testing. Therefore, false positive or false negative results can arise if standard protocols are not followed in the laboratory. The consequences of an erroneous result can be devastating for the patients. Therefore, any molecular method that is being used for patient testing should be thoroughly validated before putting into service. The goal of validation is to determine analytical and clinical characteristics of assay such as sensitivity, specificity, precision and accuracy. After the process of validation is complete, test procedures should be practiced under quality assurance protocols to ensure quality results. Laboratories can also participate in external quality control programs to help them assess their performance, continuous monitoring and improvement of their procedures. As any other laboratory test, errors can occur in pre-analytical, analytical, and post-analytical phases of the process with errors reported mostly in the pre-analytical followed by the post-analytical phase. Molecular test reports must be complete and accurate. While being brief, the reports should convey the necessary information to patients and health care professionals.

O103

Quality Management System in Molecular Section with Emphasis on Quality Assurance

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Using molecular diagnostic tests in diagnosis of diseases, determining prognosis, type & monitoring of therapy and drug resistance have been very popular in recent years. Quality assurance and quality management system are very important and necessary matter for good laboratory practice, continuous quality improvement, error control and error reduction. This topic becomes more important as you know for many molecular tests there is no IVD diagnostic tests in market or are very expensive for clinical laboratories and companies have no interest for their production due to low request from laboratories. So using LDT are very popular especially for specialized tests in hemato-oncology. In these situation validation and verification of laboratory developed tests (LDT) even in more details are necessary and should be performed according to standards and all procedures should be documented.

Keywords: Molecular Diagnostics, Quality Assurance, Validation



O104

Molecular Diagnosis of Infectious Diseases - Quality Requirements

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Molecular diagnostic assays have played and continuing to have a critical role in clinical laboratories in recent years. Unfortunately, many of physician has no fully trust to them especially to newly developed protocols and will request and judge on confirmatory tests if asking for molecular methods. Based on the frequent reports having variable sensitivity and specificity and lots of influential parameters caused some problems in laboratory's reports for clinic even in two reports of one laboratory. This approach comes from insufficient knowledge and experiments in applied protocols. Quality control of the molecular methods on three basic elements: instruments and space, applied methods, skill of laboratory technicians. On the other hand adequate knowledge of infectious diseases physiopathology is necessary. Lack of this knowledge makes a lot of complexities in the interpretation of the results. Accreditation of medical laboratory will be successful if the basic elements of quality assurance are assessed accurately by competent auditors. Professional practice guidelines and appropriate training programs are necessary and must be provided before performing the assessment or audits to assure us that laboratories are aware of best practices, proper interpretation, limitations of techniques, and other relevant technical issues.

Keywords: Molecular Techniques, Quality Assurance, Accreditation



Risk Management in Laboratory O105 – O108

Organizations of all types and sizes face internal and external factors and influences that make it uncertain whether and when they will achieve their objectives. The effect this uncertainty has on an organization's objectives is "risk". All activities of an organization involve risk when risk management implemented and maintained in accordance with this international Standard, the management of risk enables an organization to increase the likelihood of achieving objectives, improve stakeholder confidence and trust, establish a reliable basis for decision making and planning and improve operational effectiveness and efficiency.

In vitro Diagnostic Devices (IVDs) play a crucial role in patient care and the quality and reliability of results are paramount. The relative importance and probability (risk) of a specific error condition will vary with the devices design, the user, the medical application and the operating environment.

A single quality assurance and control regimen that optimally mitigates risk for all devices does not exist. There is a pressing need to assure and control quality in the most effective and efficient manner. Such QA/QC regimens should be based on the characteristics of the device in use, taking in to consideration local variable, such as the intended use of the test and the testing environment.

Implementation of quality assurance and quality control based on risk management model can be help to laboratory for decision making of these programs.

Diagnostics testing present unique challenges to manufacturer, user, regulators and accrediting agencies. A good relationship between manufacturer and user is very important in according of risk management.

Dr. S. M. Boutorabi, DCLS, PhD



O105

Risk Management in IVD Producer, Relation between Manufacturer and User

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IVD Medical device manufacturers are generally required to have a quality management system as well as processes for addressing device related risks. The IVD manufacturer shall establish, document and maintain throughout the life-cycle an ongoing process for identifying hazards associated with an IVD medical device, estimating and evaluating the associated risks, controlling these risks, and monitoring the effectiveness of the controls. Risk management principles should be applied throughout the life cycle of medical devices and used to identify and address safety issues. In general, risk management can be characterized by design and development phases and risk management output must be use as research and development input. Risk-related data from post-production information for the IVD product should be considered if it is available. For this reason post marketing information is very important issue in risk management. Relation between clinical laboratory as customer with IVD manufacturer is critical point in hazard identification, risk analysis and risk control. The manufacturer shall use one or more of the following risk control options in the priority order listed: Inherent safety by design, protective measures in the IVD medical device itself or in the manufacturing process and information for safety. The users must be note and aware from protective measures and information that use for risk control by manufacturer.

Keywords: Risk Management, IVD Manufacturer, Clinical Laboratory

O106

Individulized Quality Control Plan; CLIA New QC Program

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The Clinical Laboratory Improvement Amendments of 1988 (CLIA) regulations require a laboratory have quality control program (QC) procedure to monitor the accuracy and precision of the complete testing process. A QC procedure is now available that provides you the opportunity to tailor an individualized Quality Control Plan for your unique testing environment and your patients. By performing the steps of IQCP you will examine the potential sources of errors in your pre-analytical, analytical and post analytical phases testing as well as established the appropriate QC and quality practices which reduce the likely hood of errors occurring in the laboratory IQCP has 3 parts: 1-Risk assessment (RA) 2- Quality Control Plan (QCP) 3-Quality Assurance (QA). RA has 5 components: Specimen, Test System, Reagents, Environmental and testing Personnel. RA can be found in Regulatory requirement, Manufactory insert package, IQC and EQC. Quality Control Plan is written documents and cover: Electronic control, Internal control, EQC, Calibration, Maintenance and training. Quality Assurances is continuous process of monitoring the effectiveness of QCP and are: QC review EQC performing review, specimen and reagents logs, turnaround time reports, complain reports. Theas points are important to consider when applying IQCP in the laboratory: 1- The IQCP is unique to your laboratory and is customized for your laboratory specific testing consideration 2-Thr Risk Management must be included the entire testing process. 3- The risk assessment should be updated to include all risk identified in your QC.

O107

Risk Assessment; Abilities and Responsibilities of the Laboratories

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It seems that there is a misunderstanding of RIQC in that laboratories must assess severity of patient harm resulting from a probable laboratory failure. The degree of quality that test results must pose, so that the results can be used in clinical decision making without harming the patients, must be addressed by expert/regulatory bodies rather any single laboratory. Debate on laboratory quality specifications has a long history of more than a half century, and it has taken a long journey from the pioneers of laboratory quality, such as Tonks and Barnett, to the Stockholm-1999 Consensus Conference, and most recently to the Milan-2014 Conference. Therefore, the laboratories have neither the authority nor the ability to assess severity of patient harm. Then, what is the role for laboratories in reducing the risks released toward the patients? In fact, laboratories to participate in patient safety, must ASSESS RISKS that threat their performances, provide barriers to mitigate the risks, and provide suitable alarm systems, such as statistical QC, for the residual risks.

Keywords: Risk Assessment, Clinical Laboratory

O108

Risk Management for Medical Laboratories as Required by ISO15189

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For medical laboratories risk management is an important part of the quality management system as required by ISO 15189. Already in 1987 it was specified in a Technical Standard: ISO22367: "Medical laboratories-Reduction of error through risk management and continual improvement". Since the 2012 edition of ISO15189 the accreditation bodies in Europe pay much more attention to the existence of proper risk management during their assessments. This holds true for pre and post examination processes, where the majority of errors still occurs, but as well for the examination processes. The risk management approach can be used in a variety of situations like the decision about the frequency of internal quality control, but as well retention time of documentation. At this moment the ISOTC212 is working on a new draft Technical Specification for risk management. It tends to follow the model of ISO14971:2007 "Medical devices-Application of risk management to medical devices". Quality is a joint responsibility of the manufactures of In Vitro Medical Devices and the laboratories. The process of risk management involves: risk analysis, risk evaluation, risk control and risk monitoring. It takes notice of the possible frequency of errors, but as well the possible consequences. It needs the involvement of the management and active participation of persons well aware of the studied processes. It helps laboratories to understand where the risks occur and where needed to revise their processes. It can be used to prevent errors, but as well for continual improvement. It is an important instrument to ascertain patient safety.



The Clinical Laboratory and Immunodeficiency Disorders O109 – O115

The human immune system is able to defend the body against pathogenic agents with the assistance of its components and the relationships between their cells and molecules.

A defect of any component of the immune system, either congenital or acquired, can easily predispose an individual to fatal infections. Moreover, Immunodeficiency may also increase the risk of malignancies.

Immunodeficiency can affect diverse aspects of the immune system; from production and maturation of cells to their differentiation and activation; from construction of intracellular and extracellular molecular products to their signaling and executive actions. A dysfunction in any of the above mentioned can lead to immune deficiency which include mild to severe and fatal cases in terms of clinical severity.

Until a few years ago it was thought that the immune deficiencies were limited to acute and life-threatening conditions which were seen in rare cases.

But even after the epidemic of AIDS it was found that there were large numbers of non-acquired or genetic immune deficiency that were chronic and had high incidences in the society.

Children and adults with recurrent infections (including skin, gastrointestinal infection, etc.) are the most common cases who are referred to doctors because of an underlying immune deficiency. However, since many of them have no obvious abnormalities of immune deficiency, their immune disorder remains covered by overuse of antibiotics.

Today, all physicians must be aware of diagnostic methods and treatment of major types of immune deficiency disorders. Since unfortunately most of these patients are misdiagnosed and treated inappropriately.

Dr. M. Mahdi Mohammadi, DCLS, PhD

O109

Step by Step Diagnosis of Patients with Primary Immunodeficiency Diseases

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Primary Immunodeficiency Diseases (PIDs) are usually presented with one of the following eight characteristic clinical presentations: 1. Recurrent upper or lower respiratory tract infections; 2. Failure to thrive (FTT) from early infancy; 3. Recurrent pyogenic infections; 4. Unusual severe infections; 5. Recurrent infections with the same type of pathogen; 6. Autoimmune or chronic inflammatory disease and/or lymphoproliferation; 7. Characteristic combinations of clinical features in eponymous syndromes; and 8. Characteristic features such as angioedema. Suspicious to a number of certain PIDs could be made according to their clinical phenotypes. Meanwhile the first step in the diagnostic process starts from a limited set of tests, which is available in most hospital, including complete blood count/differential. Specific laboratory tests for each category of defects in the immune system is needed, considering the characteristic clinical presentations; e.g., 1. immunoglobulin assays for antibody deficiency or 2. CH50 and AP(AH)50 assays for complement deficiency in those with recurrent sinopulmonary infections with encapsulated organisms; 3. B- and T- lymphocytes enumeration for combined immunodeficiency in those with FTT or early onset severe infections; 4. chemotaxis, nitroblue tetrazolium (NBT) dye reduction test, dihydrorhodamine (DHR) oxidation test for phagocyte defects in those with recurrent pyogenic infections. More sophisticated tests, including specific antibody responses to protein or polysaccharide antigens, lymphocyte proliferation tests, advanced immunophenotyping, random migration, phagocytosis, and intracellular microbial killing by phagocytes, and a chemiluminescence assay can be performed in immunological laboratories. Meanwhile the definite diagnosis of PIDs relies on genetic tests.

O110

Laboratory Evaluation of Cellular Elements in Innate and Adaptive Immune System

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Immunodeficiency diseases are rare disorders with a defect in quantity or function of a part in the immune system. These disorders can be divided into two groups: The conditions with defects in the innate immune system are mostly dependent on neutrophils, monocytes and NK cells. The second category comprises the adaptive immune responses defects which are dependent on responses of T and B-cells. Quantitative defects with decreased number of cells in the peripheral blood are important and pancytopenia, lymphopenia or neutropenia must be considered first in this manner. Also flow cytometric assays can help to find defects in count of T cells, B cells and adhesion molecules. Subsequently, we must pay attention to the qualitative cell defects due to abnormal functions. For evaluating the neutrophil functions, it is necessary to evaluate oxidative burst, chemotaxis, phagocytosis and bacterial killing activity. Nitroblue Tetrazolium (NBT) and Dihydrorhodamine (DHR) tests are the most frequent requested tests used for evaluating neutrophil oxidative burst which is necessary in diagnosis of Chronic Granulomatous Disease (CGD). Evaluation of lymphocyte functions is done by Lymphocyte Transformation Test (LTT). This test is used to determine lymphocyte activation and cells undergoing proliferation, increase the rate of protein and DNA synthesis. This increase can be measured by radioactive assays such as: [3H] Thymidine or nonradioactive assays such as Tetrazolium dye reduction assay (MTT), using fluorescent dyes (CFSE) or Bromodeoxyuridin (BrdU) colorimetric ELISA kit. The laboratory evaluation of innate and adaptive immune system cell defects is very useful in diagnosis and accordingly treatment of immune deficient patients.



O111

Prenatal and Postnatal Genetic Diagnosis of Primary Immunodeficiency Disorders: From Routine Methods for Diagnosis to New Molecular Assessments for Newborn Screening

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The primary immunodeficiency disorders (PIDs) are a heterogeneous group of diseases and the genes responsible for many of them have been identified. Prenatal diagnosis of PIDs that are caused by mutations and genetic defects appears to be important to prevent the birth of infants with chronic and disabling diseases. Fortunately, such a possibility for prenatal diagnosis of all common primary immunodeficiency diseases such as CGD, SCID, XLA, Wiskott–Aldrich syndrome,... using PCR method and gene sequencing analysis has been established in Immunology, Asthma and Allergy Research Institute (IAARI). In addition, this method can be applied for confirming the diagnosis of patients suspected to PIDs following clinical evaluations and immunological screening for innate and adaptive immune systems. Recent studies show that the incidence rate of PIDs is higher than all of the previously reported cases in scientific literatures especially in countries (such as Iran) with a high rate of consanguineous marriages. Considering the importance of early diagnosis of PIDs, particularly B and T cell deficiencies and related mortality due to the risks of recurrent infections and even death following BCG vaccination, several approaches have been made in order to screening the newborns early after birth. One of the recent, precise method with a high percentage of specificity and sensitivity would be measuring the circular DNA fragments known as T-cell receptor excision circles (TREC) and κ -deleting excision circles (KRECs) using Multiplex Real Time PCR. This technique is currently used in more than 20 states in America as the neonatal screening program and gradually also in European countries. Newborn screening for T/B cell deficiencies especially SCID would be a valuable way to screen the patients, immediate immunological evaluations and finding the best donor for bone marrow transplantation (BMT). BMT is considered as the definitive treatment approach with the highest success rate in SCID patients if done before 3 to 3.5 months after birth.

O112

Approach to Diagnosis of Patient with Suspected Primary Immunodeficiency

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Primary immunodeficiency disorders (PID) are a group of heterogeneous genetic disorders mainly characterized by chronic and recurrent infections. Systemic inflammation, autoimmunity and malignancy also contribute to a significant mortality and morbidity in this group. Timing diagnosis of PIDs is made by careful clinical attention and performing laboratory immunological analyses. Accurate diagnosis is confirmed by genetic study including mutation analysis. Immunodeficiency should be suspected in patients with history of recurrent infections and autoimmunity disorders as well as history of affected member in family. Based on underlying immune defect, recurrent and chronic infections are caused by spectrum of different micro-organisms mainly occurring in respiratory and gastrointestinal tracts. Immunological laboratory workup in suspected patients is performed in three stages including initial investigation, advanced study of patient and finally molecular study for genetic confirmation. Those tests need to be ordered in initial investigation include complete blood counts and serologic tests of immunoglobulin levels, vaccine titers, and complement assay. Advanced immunologic tests including enumeration of T and B lymphocyte subsets, T-cell function assay, and protein expression are also utilized in diagnosis of PIDs. In diagnosed PID patients, known underlying genetic defect help physician to provide better management and follow up, as well as genetic counseling for carrier detection and prenatal diagnosis in family of affected individuals.

O113

Defects in the Immune System: Characteristics and Classifications

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The immune system is an interlocking group of immune formed elements (cells) and immune soluble factors (such as antibodies, CRP, Cytokines, Complement components, etc.) and their inter-relating functions, in which any defect may result in an immunodeficiency. Primary immunodeficiencies (PIDs) are a heterogenous group of genetic disorders which result in defects in the immune system. The manifestations can vary in terms of degree of severity, types of symptoms exhibited, or both. These morbidities, when unrecognized and left untreated, can result in death from infection. Most of these disorders are X-linked, resulting in a disproportionate number of affected males—approximately 70% of patients PID. A majority of PIDs are detected before the age of 20, but diagnosis can be delayed because recognition requires a high degree of clinical suspicion. More than 100 PIDs have been described; however, more than 90% of such patients are affected by fewer than 20 PIDs. Whereas PIDs are due to single gene mutations, secondary immunodeficiencies may be due to a vast spectrum of conditions such as malnutrition, viral infection, malignancy, chemotherapeutic treatment for malignancy, immunosuppressive medication and many other iatrogenic disorders. The incidence of primary immunodeficiency diseases is generally estimated at about 1 in 200,000 liveborn infants, excluding selective IgA deficiency, which is solely the most common immunodeficiency with an incidence of about 1 in every 1000 healthy blood donors. For unknown reasons, approximately half of reported immune defects involve defective antibody production. Decreased antibody production most frequently manifests as recurrent pulmonary or sinus infection, as well as bacterial septicemia. These infections are typically caused by encapsulated bacteria (mnemonically introduced as: Some Killers Have Pretty Nice Capsules!, pointing out to Streptococcus, Klebsiella, Haemophilus, Pseudomonas, Neisseria and Cryptococcus!). On the other hands, defective T cell immunity is characteristically associated with opportunistic, viral, and fungal infections, such as Candida, atypical Mycobacteria, and Pneumocystis jiroveci. PIDs are also associated with autoimmune diseases, as well as malignant neoplasms and especially lymphomas. Because of the complexity of diagnosing a PID, the cooperation of the clinician and the laboratorian is required and a logical approach to the diagnosis based on staged diagnostic testing is necessary.

Keywords: Immunodeficiency, Immune System, Innate, Adaptive, Primary, Secondary, Defects

O114

Laboratory Evaluation of Deficiencies in Humoral / Soluble Factors in the Innate & Adaptive Immune System

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By humoral defects, here I mean any deficiency, quantitative or qualitative, in body fluid soluble factors of both innate and adaptive immune constituents including antibodies, cytokines, complement activatory and inhibitory components, CRP, etc. Functional testing for total hemolytic complement activity (CH50) effectively screens for most of the diseases of the complement system. In hereditary angioedema, depression of C4 and C2 during an attack significantly reduces the CH50 although C1INH will be normal in 15% of cases. Children with defects in antibody production or complement proteins have repeated laboratory culture reports showing encapsulated bacteria. Most immunologic defects can be excluded at minimal cost with the proper choice of screening tests, which should be broadly informative, reliable, and cost-effective. Patients found to have abnormalities on any screening tests should be characterized as fully as possible before any type of immunologic treatment (especially IVIG) is begun. A simple screening test for B-cell defects is the measurement of serum IgA (by ELISA, Nephelometry or SRID). If the IgA level is normal, selective IgA deficiency (as the most common B-cell defect) is excluded, as are most of the permanent types of hypogammaglobulinemia, since IgA is usually very low or absent in those conditions. One of the most useful tests for B-cell function is to determine the presence and titer of IgM isohemagglutinins. Isohemagglutinins may be absent normally in the 1st 2 year of life and are always absent if the patient is blood type AB. Because most infants and children in The Islamic Republic of Iran are routinely immunized with DTP, and recently with a pentavalent vaccine containing conjugated Haemophilus influenzae type b, it is often informative to test for specific antibodies to these antigens. It is important to choose a reliable laboratory and to use the same laboratory for preimmunization and postimmunization samples. IgG subclass measurements are seldom helpful in assessing immune function in children with recurrent infections. Approximately 8-10% of circulating lymphocytes are B cells, which are absent in X-linked agammaglobulinemia (XLA), and present in CVID, IgA deficiency, and hyper-IgM syndromes. Patients found to be agammaglobulinemic should have their blood B cells enumerated by flow cytometry using B-cell-specific CD antigens (usually CD19 or CD20). Markedly elevated levels of serum IgE and eosinophilia are seen in the Jobb's or hyper-IgE syndrome.

Keywords: Immunodeficiency, Antibody, Complement, Screening Test, ELISA, Nephelometry, SRID



O115

Management, Care and Therapeutic Approaches in the PID Child

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Patients can be maintained on prophylactic antibiotics and should have close surveillance for early identification of infections and initiation of empirical treatment with broad-spectrum antibiotics. Specific determination of the etiologic agent by culture or biopsy is important. The most common forms of replacement therapy, although expensive, are either intravenous or subcutaneous immunoglobulin (IVIG or SCIG). Most preparations are produced from plasma pooled from more than 50,000 donors and therefore contain a broad spectrum of antibodies and must contain adequate levels of antibody to various vaccines. The rationale for the use of IVIG or SCIG is to provide missing antibodies, not to raise the serum IgG or IgG subclass level. Except for the CD40 ligand defect and XLP, for which stem cell transplantation is recommended, use of antibiotics to treat documented infections and regular administration of IVIG are the only effective treatments for primary B-cell disorders. The immune deficiency in the complete DiGeorge syndrome is correctable primarily by cultured unrelated thymic tissue transplants or non-irradiated unfractionated bone marrow or peripheral blood transplantation from an HLA-identical sibling. HSCT is the only known cure for CGD (and also cases of LAD, Chediak-Higashi syndrome, etc). Cultures must be obtained as soon as infection is suspected. Most abscesses require surgical drainage for therapeutic and diagnostic purposes. ESR may be used to help determine the duration of antibiotic treatment. IFN gamma reduces the number of hospitalizations and serious infections. Subcutaneously administered rhG-CSF can provide effective treatment of severe chronic neutropenia. Corticosteroids and G-CSF may benefit patients who have immune or drug-induced neutropenias. The patient and close household contacts should be immunized against Haemophilus influenzae, Streptococcus pneumoniae, and N. meningitidis. CI INH concentrate or a kallikrein inhibitor are used in adolescents and adults for long-term prophylaxis, preparation of surgery or dental procedures, or treatment of acute attacks. Synthetic androgens increase the level of functional CI INH severalfold.



The Role of Leadership and Middle Management in Laboratory O116 – O120

Paying attention to human resource management effective application is the main function of managers and leaders which is related to manpower productivity improvement. In new millennium, managers should lead their organizations instead of management. Leadership is the art of management that induce self-confidence, moving to attaining organizational goals, and commitment among the employees. Laboratories supervisors and head of departments have the role of middle managers and leaders, that should be perform to achievement of policies close to senior leaders in scope of team working.

Dr. H. Dargahi, PhD

O116

Leadership vs. Management: What is Most Essential and Effective in Laboratory

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Leadership is the art of management. Success of any manager in management levels, depends on directing of human resource. Leadership is defined to impressed the staff to endeavor with self-reliance and best interest to attain organizational goals. Top or middle managers and supervisors authority is not only efficient to implement organizational policies and procedures, but it seems leadership is essential to perform these issues. There are many differences between leadership with management. The main differences are change agent, having vision, passion with staff, appeal to heart instead of head by moral behaviors, likes the staff to strive attaining the highest standards, direction to new roads, and gives credit to organization by a leader. In the new millennium, all managers are recommended to be leader instead of manager.

Keywords: Leadership, Management, Essential, Laboratory

O117

Medical Laboratory Supervisor Skills (Communication, Consideration, and Commitment)

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Competent employees are essential for achieving accurate and reliable test results Assessment and documentation of staff competency is a necessity so a good selection for Recruitment a competence supervisor is very important Lab supervisor skills Essential Skills from 10 Core Competencies 1-Accountability & Taking Responsibility 2- Change Management 3-Coaching & Mentoring 4-Communication 5-Conflict Resolution 6-Empowerment 7-Motivation & Attitude Improvement 8-Professionalism 9-Relationship Building, 10-Teamwork Cause of insufficiency and poor quality is system, not the people And it is system. Management's responsibility to correct the system and to achieve the desired results effectiveness Communicating with Employees needs this requirements: Emphasize positive traits /Consider personal issues / People are motivated differently/ Be direct in discussing deficiencies by lab supervisor: essential criteria for Continuous improvement 1-Institute training /2-Drive out fear/ 3-Break down barriers between staff areas /4-Eliminate slogans, exhortations and targets for the workforce/ 5-Remove barriers to pride of workmanship/ 6-Take the action to accomplish as the transformation as an everyday job.

Keywords: Competency



O118

Middle Leadership and Management, and Improving the Organizational Culture, Employees Commitment and Professional Ethics

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Considering statistical calculations required for tests importance and specificity of medical decisions in selecting and evaluating new laboratory methods using internal and external quality control and also the use of practical charts for rejecting and the possibility of errors in the results, linearity of the response. The assurance of nature work due to the biological changes using common standards (ISO) for evaluating. The laboratory methods using Sigma programs in computer calculation and other quality control programs we can understand the important role of managers in top and middle leaders in improvement of medical ethics culture of health accuracy and professional working responsibility with careful monitoring compliance are aforementioned issues. On the other hand rapid development of new electronic devices such as computers and different soft wares new laboratory devices and new methods in future show the need for skilled managers and middle lesders in promoting quality control by careful monitoring the improve medical ethics culture, honesty and professional responsibility.

Keywords: Managers, Middle Leaders

O119

The Role of Organizational Learning in Middle Managers Performance of Medical Laboratories

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One of the important mission of Iranian Ministry of Health is health promotion and continuously improvement of health care to all of people. Middle laboratories have key role in improvement of community health as the main centers for prevention and therapy of diseases. Medical laboratories supervisors are most responsible for staffs performance and develop their empowerment to deliver the best practice for patients as middle managers. Therefore, medical laboratories supervisors practice using standard procedures and process, development of staffs' skill and knowledge in scope of quality management. Quality is defined as a organizational strategy that perform qualitative procedures for improvement of services to customers based on controlling and measurement toward attaining the organizational goals. This research is aimed to respond to this question that there is a holistic procedures for determination of quality assurance, effectiveness, and efficiency, in different dimensions, for example: human resource, equipment, instrument. It seems new theories, procedures, models and managerial styles like organizational learning have important role. Towards medical laboratories efficiency and effectiveness in scope of supervisors functions as middle managers.

Keywords: Organizational Learning, Performance, Middle Managers, Medical Laboratories



O120

Change Management

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To take a look around we see that everything is changing rapidly. progressing science and technology is changing the world around us. business models are changing and every time a new issue with new challenge appears. Any organization that do not get informations of changing around and certainly not in compliance with the surrounding environment is doomed to disappear. Organizations have three options in facing with change. 1 those who resist against change 2 Those who accept change and adapt with changes 3 Those who create change and challenge competitors But the question here is that how change happens? What steps does the process of change? What are the barriers to change? how it should be managed? In this paper, we will have a brief overview of the process of change management in organizations.

Posters

Chronic Kidney Diseases and Clinical Laboratory P1

P1

The Study of Oxidative Stress in Diabetic Nephropathy

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Background: The role of decrease of antioxidant capacity or increase of prooxidant/oxidant power is well known for the progress of stress oxidative. The aim of this study was to evaluate the plasma antioxidant capacity along with uric acid in patients with diabetic nephropathy (DN+) and without diabetic nephropathy (DN-). **Materials and Methods:** The research population included 88 patients with DN, 66 patients without DN and 54 healthy people who were matched for age, gender, and body mass index (BMI). In all groups, total antioxidant capacity of plasma by the ferric reducing antioxidant power (FRAP) assay and serum uric acid by commercial kit, respectively. **Results:** The mean age of patients in DN+, DN- and control groups were 59.3 ± 9.4 , 60 ± 11.2 , and 54.6 ± 6.9 years, respectively. Plasma antioxidant capacity was higher in patients with DN+, ($1589 \pm 330 \mu \text{ mol/l Fe}^{2+}$) and DN- ($1344 \pm 347 \mu \text{ mol/l Fe}^{2+}$) than that in healthy controls ($1187 \pm 271 \mu \text{ mol/l Fe}^{2+}$) ($P < 0.001$). The mean plasma uric acid in patients with DN+ was significantly higher ($8.7 \pm 1.3 \text{ mg/dl}$) compared with DN- ($7.3 \pm 1.2 \text{ mg/dl}$) ($P < 0.01$), and significantly lower in control group ($4.1 \pm 1.4 \text{ mg/dl}$) ($P < 0.001$). **Conclusions:** According to our results, despite innate antioxidant activity of uric acid and increase of total antioxidant capacity and concentration of uric acid in diabetic patients with or without nephropathy, it can not compensates the severity of oxidative stress. Further studies are required to determine the value of other antioxidant factors in increasing the power of total antioxidant capacity.

Keywords: Diabetes Mellitus, Nephropathy, Antioxidant, Uric acid

Clinical Laboratory Accreditation P2 – P5

P2

A Comment on External Quality Control Assessment of Parasitology

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External assessment of diagnostic laboratory departments is necessary and is in current by sending the samples to the active laboratories in most of the cities in Iran. Although the methods of sending, cooling system and distance are affecting the results and cause bias, but is suitable to evaluate the quality of laboratory services and improve the quality. In the beginning course of parasitology assessment, microscopic slides or fluids containing parasite agents were sent for evaluation, but recently color print of parasites such as pictures of red blood cells with stages of Plasmodium (ring, amoeboid,...) are sent and asked to identify the species of Plasmodium, while for identification of Plasmodium species it is needed to see different stages of Plasmodium in stained slides under the microscope to verify the species of Plasmodium. The prints are extracted from the internet and everybody can find them by search in internet. This method of assessment is not scientific external assessment and should be revised.

Keywords: Quality Control, Assessment, Laboratory, Parasitology



P3

The Operating Procedure for “Establishing Accreditation System” in Microbiological Laboratory

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Introduction: laboratory accreditation is a means of determining the technical competence of laboratories to perform specific types of testing. It also provides formal recognition to competent laboratories, thus providing a ready means for customers to identify and select reliable testing, measurement and calibration services able to meet their needs. Microbiological testing is taken to include sterility testing, detection, isolation, enumeration and identification of micro-organisms and their metabolites in different materials and products, or any kind of assay using micro-organisms as part of a detection system. The accreditation process involves a thorough evaluation of all the elements of a laboratory that contribute to the production of accurate and reliable test data. The assessment criteria are based on the international standards ISO/IEC 17025 or ISO 15189. Setting up an accreditation system in microbiological laboratory has the following elements: technical competence of staff testing environment validity and appropriateness of test methods Equipment-maintenance, calibration and performance verification reagents and culture media reference materials and cultures sampling sample handling and identification disposal of contaminated waste quality assurance of results/quality control of performance test reports. Once accredited, the laboratory is re-evaluated periodically to check that its standard of operation is being maintained.

Keywords: Microbiological Laboratory, Accreditation , Operating Procedure

P4

Medical Laboratory Quality Management System Validation According to WHO Pattern

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Preface: clinical laboratory quality assurance and validation is the vital factor in proper and timely diagnosis in patients, not only as patient right but also emphasizes as the legal requirement for laboratory competence. Quality management system (QMS) validation is specialized process needs to technical knowledge and skilled human resources as both a laboratory staffs and auditors in implementing and auditing process. Purpose: Comprehensive and equal ,simple ,pragmatic patterns presentation have very important role for standardization (QMS) development for all laboratories and particular in remote and small cities with lacking skilled human resources. Discussion: International organization for standardization (ISO) offers ISO 15189, 2012 medical laboratories requirement for quality and competence but no obligation for implementing in countries and laboratory standardization is up to their policies and legal. Ministry of health reference laboratory offers 14 sections and 164 issues check list as Lab(QMS) criteria could be used for internal and external auditing. World Health Organization (WHO) with long background in offering pragmatic health quality management systems with considering social, economic capacities particular in the developing countries offers a laboratory (QMS) package with emphasizing on 12 essentials quality requirement criteria such as lab organisation, human resources, internal and external (QC&QA), documents, incident management, purchase,.. etc, which recommended by ISO15189 and CLSI(Clinical Laboratory standard institute). Conclusion: WHO Lab (QMS) package could use as practical pattern together with reference laboratory check list as training and implementing criteria for standardization development in all laboratories particular in the remote small cities with a few expert.

Keywords: Laboratory Quality Management, Validation, Organisation, Human Resources, Documents, Equipment, Inventory and Purchases, Internal and External Quality Control, Quality Control and Quality Assurance, Risk and Incident Management

P5

The Effect of Marketing Mixes in The Client's Satisfaction in a Medical Laboratory

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The effect of marketing mixes in the client's satisfaction in a medical laboratory Introduction : Given the level of patient satisfaction with medical diagnostic services play an effective role in the management planning. The use of marketing mix to measure patients' satisfaction, the service providers in the modern era to have more market share, revenue, customer and increase the efficiency and effectiveness of these centers is essential. Method: This study used data from questionnaires and telephone interviews obtained And after completion of the questionnaires based on the number of samples needed for the study, collected data and finally were analyzed. From among 100 patients referred to one of the laboratories of Gorgan in the second half of 1394 is that simple random sampling were studied. To measure patient satisfaction with the service provided was of a conceptual model 7p marketing mix that consisted of seven dimensions of service, price, place, promotion, physical evidence, process and personnel, Using literature and library. Results: Customers' satisfaction level is service satisfaction (80%), satisfaction of places (66.7%), satisfaction of price (66.7%), satisfaction of promoting and advertising (30%), satisfaction with physical evidence (90%), satisfaction of employees (93.3%), satisfaction the process (95%), respectively. The highest level of satisfaction, the spot is related to the following: satisfaction the process and satisfaction the employee. Conclusions: Those processes, employees and promote the most effective and low-impact physical evidence was a factor in clients' satisfaction! Service providers can use the marketing mix to measure the client's satisfaction and to enhance their marketing management And focusing on aspects.

Keywords: Marketing, Satisfaction, Diagnostic



Economy and Improvement of Laboratory Services P6 – P9

P6

Evaluation of Energy Consumption and Its Management in Ahvaz Oil Hospitals Based on ISO 50001 Standard

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This research tends to investigate importance of the establishment of systems and management tools to improve energy efficiency in hospitals. With regard to direct correlation of energy consumption reduction (or energy efficiency) with cut costs in hospitals, the necessity for energy management and developing strategy with the objective of continuous improvement in energy efficiency is quite tangible. To implement this standard, firstly the hospital should evaluate and develop energy management system after initial investigations made on current status and comparing it with ideal status. ISO 50001 has been used as a pattern to investigate energy consumption management in Ahvaz Oil Hospital. This is the newest reference in this field and there are a range of advantages related to its establishment in this hospital. In this research, we tend to investigate general trend of energy consumption in different wards of this hospital following performance of required analytical analysis and measurements during a period of two years, 2012 and 2013. Then, we analyze approaches to reduce energy consumption in studied hospital observing energy consumption in Naft hospital according to bills and some analysis on use of power by mentioned hospital equipments pointed out that the fan of electromotor with a total power of 18 kg/h and incandescent lamps with a total power of 1255/6 kwh are the biggest in Naft hospital. and also the use of electric in summer and the use of gas in atumm and winter have raised for charging temperature.

Keywords: Energy Management, ISO 50001, Energy Consumption

P7

The Effect of Middle Managers Roles in Making Changes in Medical Diagnostic Laboratories

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Middle management included a wide range of managers which is considered as a linked factor to senior managers and supervisors and operations managers. The Managers of middle sector are concerned a set of tasks which is referred to organizational bureaucracy. The Middle –level managers are the key of changes in an effort to change and innovation, managers not only manage the changes But taking over its leadership through the personnel under its cover into the Institute. In Medical Diagnostic Laboratories, the laboratory supervisor is responsible for the role of middle manager. Due to extensive changes in recent years in standardization and validation of Medical Diagnostic Laboratories, need to empower administrator (manager) to make changes and encourage staff for sympathy to achieving the targeted results seems necessary. Successful leaders in making change, has a clear understanding and broad vision in the drivers and agents of change background. In a vast research in efforts for change and innovation in fifty-six companies in the areas of technology, health, pharmacy, bank, automobile manufacturing, insurance, energy, non-profit was performed. It was shown that most of these efforts have failed. Thirty-two percent of those successful attempts is the ones which engage middle-level managers into worked. The Middle managers have used the path map to achieve their goals and didn't not limited themselves to the boundaries and limitations of the contract and wont lose the time.

Keywords: The Middle Manager, Supervisor, Medical Diagnostic Laboratories

P8

Solving Petri Dish Usage Problems with New Design

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Background: There is no connection between two plates of Petri-dishes and they separated easily. So, extra care is needed for sterile plates during work with them in order to prevent contamination, while aberrant opening the lid. Today, different tools such as a kind of tapes are used to keep the lid tightly closed. On one hand, sometimes for long-term maintaining, all around of the petri_dish is covered with this tool, it is costly and work difficulty. The aim of this study was to design a new petri_dish to enhance its efficiency. **Methods:** here, a kind of screw thread with diagonal lines on the wall of the plates was created. Also the seal ring inside the lid reduced air passing through the plate when two plates screwed tightly to each other. For evaluating the qualification of our plate, we use bacterial cultivation in both experiment and control petri dish **Results:** the results showed that, When the lid was half screwed closed, aeration for aerobic microorganisms growing was take place, And while it was fasten completely, the lid didn't let the air pass through and can stop the leakage approximately, preventing potential pollution and dryness of the culture medium during the long_time maintenance. **Conclusions:** The finding indicated that use of this tool in addition to raising the reliability of working with petri_dish without worrying about improper opening the lid, it had no negative effect on bacterial growth and could eliminate the need to use Parafilm or other similar instruments for plate preservation in long_term.

Keywords: Petri Dish, Screw Lid, Aeration



P9

The Assessments of Qualitative and Quantitative of Rate of Thallium in Opioid Addict

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Background & aim: Thallium intoxication has been reported with contaminated drugs, including heroin and cocaine. We aimed to survey the qualitative and quantitative assays to evaluate Tl as an adulterant in opioid-like compounds from drug users, for the early diagnosis and treatment of thallotoxicosis. **Materials & methods:** 100 opioid-like abusers for more than 3 years, aged 18-65 years and 50 non-drug user subjects were evaluated. Comparative qualitative and quantitative Tl analyses of 24h urinary were conducted for both groups. Data were analyzed with SPSS software (version 16), Student's t test and Spearman's coefficient test. **Findings:** Totally, 150 persons, 100 study and 50 controls, were studied. Opioid users, raw opium or opium residues were 66 %, followed by mixed (28 %), and crystal heroin (6 %). The of cases with positive qualitative urinary Tl levels was 26.8 µg/L (1 µg/L) and it was 2.3 µg/L (0.4 µg/L) for negative cases. Qualitative test showed more accuracy for the high amount of sensitivity, specificity and PLR and small value of NLR. **Conclusion:** The assessment of qualitative and quantitative assays show that both method could play complementary and efficient role for each other for an accurate and better detection of thallium among opiates drug abusers; however qualitative method was more accurate.

Keywords: Thallium, Quantitative & Qualitative Assays, Drug Abuser



Ethics and Law in Clinical Laboratory P10 – P16

P10

Evaluation of Patient Safety Importance and How Conflication with It in Educational and Health Centers

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Introduction: Health care is the main task of the service provider. Surely health care position is very clear and obvious and the health system as a unit seeks to achieve a single aim that is patient recovery work. In the meantime, patient safety is given special importance to the need for more attention to it. The aim of this study was to review the elements in the importance of patient safety and to investigate the interaction provided with its service providers. Method: Resources used included SID, Springer, PubMed and Patient, Patient Safety as keywords were used. Results: Evaluation studies concluded that is meaningful relationship between improving safety culture and communication with the promotion of patient safety and reduce medical errors. Conclusion: Patient safety has a great importance in health centers but unfortunately in Iran like other developing countries this item has not found its proper place. The most important factors to achieve the correct position are the culture and communications.

Keywords: Safety, Safety Culture, Patient Safety



P11

Ethical Challenges in Clinical Laboratories

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The purpose and importance of research: Laboratories as one of health service providers for clients, special responsibility. The purpose of this research explain the principles of Islamic. Research method: This is a review article In-depth study of relevant literature on the basics is anthropological principles and values of Islamic morality. Results: Ethics Historically, the medical Jz'laynfk. Enter your text Knydasl general medical ethics and behavior is Comfort and well-being of the patient. Rapid advances in laboratory Drfnavyrhay Has been associated with complex ethical dilemmas. Providing good service and standard Ethics, Honesty, protection, privacy And human dignity clients, In keeping patients Referring to the laboratory is necessary. Conclusion: Ethical issues related to the laboratory must be flexible and ready to change. All staff in this area the latest developments in the field of medical ethics Working in the field of self-awareness and apply them. Design and ethical challenges In the production, access, dissemination, storage And use of patient information in an electronic environment And develop practical solutions and could On the one hand, to observe medical ethics And support the principles of effectiveness, equity, justice Individual will freedoms in the information society.

Keywords: Laboratory, Ethical Challenges

P12

An Overview of the Rights of Laboratory Animals in the National Culture, Islamic Law and International Law

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Laboratory animals are model for the treatment, control and prevention of human diseases. The side effects of medications, poisoning and premature deaths of these animals are some of the effects of this studies on laboratory animals. In this review, the rights of animals were studied in historical sources, Islamic and international laws. In the ancient Iranian culture, animals were sacred and iconic. In Zoroastrianism, which was common at the time of Sassanid, criminal mistreatment of animals is the punishment by hell. At the time of the Sassanid, punishment of hell after futile killing of animals was an important believes. Islam pays attention to nutrition, health and treatment of the animals. The legal sources stated that each animal is placed under the control of one of his alimony should be paid by the owner. Imam Ali (AS) said in this regard: the obedient God against all things you're available, you are responsible even for the survival of animals also responsible. In European countries since the nineteenth century, serious efforts have been made in relation to animal rights. As part of the statement given animal rights: All animals have equal rights to be live. Animals should not be subjected to acts of violence and cruel. Any animal which is dependent on man should be properly maintained.

Keywords: Animal Rights, View of Ancient Iranian, Islamic Law, International Animal Rights

P13

Study of Laboratory Error in Nurses of Shahid Behshti Hospital of Yasuj At 2014

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Introduction: The major mission of nursing is provision and improvement of human health. Now a day, accountability and civil liability have specific situation in nursing due to its professionalism development. Eliminate of nursing errors such as laboratory errors seems unlikely, but we can will reduce them by research, raise awareness, detection of errors and careful planning. The standards of care relied on obligations and guidelines approved by the Ministry of Health and Medical Education and nursing errors means negligence in implementation of them. **Objective:** This study was carried out to determine the status of laboratory errors in nurses of Shahid Beheshti Hospital of Yasuj in the year of 1393. **Material and Method:** In this cross-sectional study, the investigation population were all the nurses of Shahid Beheshti hospital of Yasuj. The data collecting tool is a researcher made questionnaire which contain demographic characteristics and laboratory errors. Then the data were analyzed by descriptive statistics including tables, central and dispersion parameters and inferential statistic such as parametric tests using SPSS version 21 software. **Finding:** Result showed that nurses of Shahid Beheshti Hospital of Yasuj were accomplished 1001 errors during the last six months. The mean error for each nurse was 6/22 during the six months and errors in some cases are significant due to age and Employment Status. **Conclusion:** According to the research findings and the importance of preventing and reducing Laboratory error in nurses, it seems that providing continuing education programs for employees, and also creates an appropriate atmosphere and incentive solutions for encouraging staff to report their errors are essential.

Keywords: Nurs, Error, Laboratory Error, Patient Safety

P14

Carelessness to the Role and Safety of Cleaning Workers in Diagnostic Laboratories

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Despite the fact that cleaning workers in diagnostic laboratories are not so important, but they can hurt themselves and the laboratory seriously if they don't be educated completely about how to work and observance of safety situations at work environment. In most cases carelessness and sometimes disregarding to the cleaning workers would taken place in both education issue about how to work and safety issue. Most of the cleaning workers don't have enough information about danger of infection transmit and diseases that transmit with blood and biological information as much authorities and technical personnel know and this make the responsibility of laboratory toward these Individuals more. Also if cleaning workers don't be educated enough about how to work (specially washing the test tubes) so they can interfere in the test results and affect on them unintentionally. It should be considered that we can complete the moral responsibility toward these cleaning workers and secure these vulnerable people from transmitted diseases through the vicinity to risky prototypes by educating and preparation of appropriate equipments. Now stating these three questions is necessary, what percentage of laboratories 1- have educated their cleaning workers about how to work completely, 2- have educated their cleaning workers about prevention from transmission of the infection to themselves and their families by changing the uniforms, taking a shower after finishing the work and..., 3- have provided appropriate equipment for protection these cleaning workers.

Keywords: Cleaning Workers, Diagnostic Laboratories, Education



P15

Ethical Dimensions of Nanotechnology in Medical Laboratory

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Many researchers believe nanotechnology applications in medicine may be giant step toward to end suffering caused by disease and injury. It is important to proactively address the ethical and social aspects of nanomedicine to minimize its adverse impacts on the environment and public health. Before nanomedicine products can be used in diagnosis, prevention or treatment of disease, they must first undergo extensive pre-clinical and clinical testing. Researchers beside explore the toxicological, pharmacological and immunological properties of different nanomaterials, must be considered risks and benefits of nanotechnologies in health care. Nanomedicine and nanotechnology in general, is new and little experimental data about unintended and adverse effects exists. The lack of knowledge about how nanoparticles might affect or interfere with the biochemical pathways and processes of the human body is particularly troublesome. Scientists are primarily concerned with toxicity, characterization and exposure pathways. There are also valid concerns over the disposal of nanowaste and environmental contamination from the manufacture of nanomedical devices. Because long-term follow-up data regarding nanomedicines do not yet exist, it is important that patients be informed that there may be long-term consequences for using these drugs. Although this is not altogether different from the long-term risks associated with exposure to chemotherapeutic or radiologic agents, it is an important risk factor that must be disclosed to patients taking nanomedicines or any kind of intervention involving nanomaterials. Most commentators agree that safety and risk issues must be thoroughly understood if society is to take advantage of the potential benefits of nanotechnology.

Keywords: Nanomedicine, Ethical Aspects, Environmental Contamination

P16

Patients' Rights in Medical Laboratory

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Personnel of medical laboratories are usually in the contact with patients. This is a fact that the personnel should care of ethical issues. Patients have several rights in 3 steps in the medical laboratory. -During reception and sampling: Accuracy during reception and sampling is an important fact. Patients usually are fast, and they are under stress, so the personnel of reception and sampling should accept and contact the patient with care and relax him or her. The patients need a minimum welfare facilities in the sample room. -During performing assays: In the second step patients should have no access to the Lab personnel. The most important right for the patients is a top level of accuracy during performing the assays. -After performing assays (issuing results): during issuing results it is sometimes necessary to ask some questions of the patients or his/her attendants. These questions should be minimum, with no awful inspiration in the patients. All the patients' in formations and results are private and secure. Unauthorized access should be limited.

Keywords: Patients' Rights, Medical Ethics, Clinical Laboratory

Laboratory and Biochemistry Research P17 – P65

P17

Effect of Propolis on Blood Levels of Some Biochemical Factors and Total Antioxidant Concentration in Male Rats

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Aims: Propolis has different and useful effects. The aim of this study was to investigate the effect of propolis on various blood levels of biochemical factors and also evaluating the antioxidant effect of propolis on the adult male rats. **Materials & Methods:** In this study, 40 Wistar male rats were divided into 4 groups of 10. The first group was control group and the second, third and fourth groups, respectively, were orally treated with the concentrations of 50, 100 and 200 mg/kg of propolis. After 10 daily oral administration of the propolis, the animals serum were collected and the biochemical parameters: Glucose, TG, AST, ALT were evaluated. Also the total antioxidant concentration was measured by FRAP method. **Results:** The glucose measurements were not significantly difference among the 3 propolis treated groups in comparison with control. The animals receiving oral dose of 100 mg/kg propolis showed a significant decrease in serum TG levels ($P<0.001$). Also, serum levels of AST in the groups receiving doses of 100 and 200 mg/kg showed significant change in comparison with the control ($P<0.01$, $P<0.001$). Serum levels of ALT in the groups receiving doses of 50 was significant decreased compared with control ($P<0.001$). The serum total antioxidant concentration has a significant incensement in dose of 50 and 100 mg/kg respectively compared with the control ($P<0.05$, $P<0.01$). **Conclusion:** Oral administrations of propolis can modulate some of biochemical factors including serum triglycerides and increases total antioxidant concentration.

Keywords: Propolis, Antioxidant, Alanine Aminotransferase (ALT), Aspartate



P18

Effect of Isoflavonoid on Serum Adiponectin, and Lipid Profile Levels in Diabetic Rats

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Abstract: Diabetes mellitus is a chronic metabolic disease with the highest rates of prevalence and mortality around worldwide. Isoflavones are naturally compounds in foods like Soy isoflavones. The aim of this study was to determine effective of two different doses of Biochanin A (an isoflavonoid) on glycemic control, serum adiponectin, and lipid profile in streptozotocin (STZ)-induced type 1 diabetic rats. **Material and Methods:** 30 Male Wistar-Albino rats were randomly divided into five groups (n=6). Two groups of them was selected randomly as control that one of them receive Biochanin A and diabetes was induced in the other rats by a single injection of STZ (55 mg/kg BW) freshly dissolved in 0.1 mol/L citrate buffer (pH=4.5) into the intraperitoneum. Diabetic rats randomly divided into three groups. Group1: Normal control (receiving 5% DMSO), Group2: Normal control that receive 10 mg/kg bw biochaninA, Group3: diabetic control (receiving 0.5% DMSO), Group 4 and 5 were treated with 10 and 15 mg/kg bw biochanin A for 42 days. Finally FBG, lipid profile, and adiponectin were assessed. **Results:** Serum FBG, total cholesterol, triglycerides, LDL-c, and VLDL significantly decreased and HDL-c and adiponectin increased in the two groups of treated diabetic rats in comparison to the diabetic control (p<0.05). For all the investigated factors, there was no significant difference between two treatment groups. **Conclusion:** Results showed that Biochanin A possess hypoglycemic and hypolipidemic activities and play an important role in regulating the secretion of Adipokines such as Adiponectin.

Keywords: Biochanin A, Type 1 Diabetes, Rat, Adiponectin, Lipid Profile

P19

Production and Characterization of a High-Affinity VHH Fragment against the Venom of Domestic Snakes of Iran

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Snake envenomation is a major concern in Iran. Venom causes a dramatic systemic and local pathology. Antibody-based anti-venoms, isolated and purified from venom immunized animals including, horse, sheep, goat, and rabbit are more frequently used for neutralizing venom. However, published data has shown that animal derived anti-venoms sometimes elicit immune mediated reactions and have low tissue penetration hence, reducing the chance of formation of Ab-venom complexes. In current study, we successfully isolated and purified VHH fragment through phage display technology. In vitro studies confirmed the specificity and affinity of VHH fragment against a wide range of Iranian snake toxins. Small size and high penetration rate makes VHH fragment superior. Furthermore, VHH fragment is relatively similar to the H-chain of human Abs therefore, it should be innocuous to human beings. For the enrichment of VHH fragment, phage library was panned for nine consecutive rounds and the best round was determined by ELISA. Plasmid was isolated from the best round of panning followed by the transformation of HP2151 strain of E. coli. VHH fragment in soluble form was expressed in periplasmic space of the host. The fragment was isolated, purified and finally subjected to dialysis. Expression and purification of VHH fragment was evaluated by SDS-PAGE while specificity and affinity was determined through ELISA. Phage derived SRNB94 due to its small size and non-immunogenic nature is ideal for designing anti-venom drugs on commercial scale. However, further in vivo studies are needed to establish a relationship between its biological activity and amount of dose.

Keywords: Phage Display, VHH Fragment, Snake, Venom

P20

Matrix Metalloproteinase Activity a New Key in the Diagnosis of Colorectal Cancer

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Colorectal cancer with a high mortality rate is the second cause of cancer -related deaths. The only reliable method for diagnose colorectal cancer is biopsy and histological examination that unfortunately, is totally an invasive method. In this study activity of MMP-9, MMP-2, Dimmer MMP-9, and NGAL/MMP-9 complex is examine in serum of people with colorectal cancers and control group. The aim of this study is considering these enzymes in colorectal cancer and simultaneously, as a marker at different stages of cancer pointing out their superiority partially according to being non-invasive of the method. In this study, 33 patients with colorectal cancer and 20 healthy individuals were selected. 10 ml blood of all people collected and serum was isolated. The zymography technique done to check the activities of matrix metalloproteinase. The result of comparing enzyme activity of MMP-2 between stages 1 and 2 of colorectal cancer was not significantly different, while between stages 1 and 3 as well as 2 and 3, the difference was significant. The relationship between the staging of colorectal cancer and the activity of MMP-9 and NGAL/MMP-9 was positive and direct, but its relationship with the activity of MMP-2 and MMP-9 dimmer was reverse and negative. The sensitivity and specificity of the activity of MMP-9 and NGAL/MMP-9 for the detection of colorectal cancer were 87 and 85, 66 and 65 %, respectively. we concluded that the use of this method to metalloproteinase, especially MMP-9 will be good in the diagnosis and determination of the degree of cancer.

Keywords: Colorectal Cancer, Matrix Metalloproteinase 9, Matrix Metalloproteinase 2, Dimmer Matrix Metalloproteinase 9, NGAL/MMP-9 Complex

P21

Walnut Restored Biochemical Factors and Reduced SREBP-1c Expression in Diabetic Rat

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Background: Diabetes Mellitus has appeared as a universal burden. Studies have reported that mortality from Coronary Heart Disease (CHD) in diabetic patients is 2 - 4 times higher than nondiabetics. In this respect, walnut is a treatment which has beneficial effects on CHD risk factors. SREBP-1c play an important role in the regulation of lipid metabolism. This study was aimed to evaluate the effects of walnut on lipid profile as well as SREBP-1c protein levels in rats. Methods and Materials: Animals were randomly divided into 3 groups (n = 6); Group 1: Received chow only (control), Group 2: Diabetic rats + chow, Group 3: Diabetic rats + chow supplemented with 4% of whole walnuts. After four weeks rats were sacrificed, blood was collected; lipid profiles as well as SREBP-1c protein levels were determined by western blotting. Results: Compared with diabetic rats walnut significantly decreased serum cholesterol (P < 0.01), LDL-c (P < 0.01), triglyceride (P < 0.001) and VLDL-c (P < 0.001) and also increased HDL-c (P < 0.05) compared with diabetic. Moreover, SREBP-1c protein level significantly decreased (P < 0.05) in walnut group compared with diabetic group (P < 0.05). Discussion: The findings showed that walnut administration in diet clinically decreases atherosclerosis risk factors. Lipid profile reduction might be due to the reduction of SREBP-1c by this medical treatment in liver.

Keywords: Cholesterol, LDL-C, SREBP-c1



P22

Effects of Flaxseed on Biochemical Parameters and Expression of LXR Alpha

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Background: The aim of this study is to examine the effect of flaxseed on lipid profiles in diabetic rats, focusing on intestinal LXR alpha. **Methods and Materials:** Animals were randomly divided into 3 groups of 8 rats each. group1: rats + chow diet (control), group 2: diabetic rats + chow diet (diabetic control), and group3: diabetic rats + chow diet + 4% flaxseed (w/w) (flaxseed group). After one-month rats were sacrificed, blood was collected; lipid profiles were determined enzymatically as well as mRNA and protein levels of SR-BI were determined by RT-PCR and western blot respectively. **Results:** Compared with diabetic control (group 2), total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), triglycerides, and very low density lipoprotein cholesterol (VLDL-C) (all of them $P < 0.01$) significantly decreased in flaxseed group (group 3). Intestinal LXR a mRNA was significantly increased ($P < 0.001$) in flaxseed group treatment compared with diabetic animals (group 2). Levels of LXR a significantly increased in flaxseed group ($P < 0.05$). **Discussion:** In conclusion, flaxseed significantly reduced TC, LDL-C, TG, VLDL-C and atherogenic index, as compared with the diabetic rats (group 2). On the other hand flaxseed led to up-regulation of LXR a in the intestine of rats.

Keywords: Flaxseed, Lipid Profiles, Diabetic Rats, LXR

P23

Change in the Intestinal Cholesterol Homeostasis by Opium in Normal Addicted and Hypercholesterolemic Addicted Hamsters

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This experiment was planned to study the effect of opium on lipid profile, antioxidant capacity and LXR expression in the intestine of addicted and hypercholesterolemic addicted hamsters. Syrian golden hamsters weighting between 90-110 grams were used in this experiment. Animals were randomly divided into 4 groups: 1; Normal (only chow diet), 2; Normal addicted, 3; Hypercholesterolemic, 4; hypercholesterolemic addicted. Biochemical factors were measured using a SELECTRA XL chemistry analyzer and commercial kits (Pars Azmoon Co. Iran). The mRNA and protein levels of LXR were determined by RT-PCR and western blotting, respectively. Histological changes were examined by a light microscope. Total cholesterol was reduced by opium in addicted animals, whereas other lipids did not change significantly. The mRNA and protein levels of intestinal LXR were significantly increased in the intestine of addicted animals in comparison with non- addicted animals ($P < 0.05$). MDA concentration in the serum and intestine was increased in addicted hamsters compared with non- addicts ($p < 0.05$). Total antioxidant capacity was lower in serum of addicted hamsters compared with non- addicted animals ($p < 0.05$). Opium consumption produced severe injuries such as necrosis, infiltration of mononuclear, inflammation, presence of exudate in lumen, villous atrophy, ulceration, epithelium destruction, hemorrhage congestion, villians shorted in the intestine, and destruction of intestinal glands. Our findings indicated that opium intake reduced total cholesterol, probably via LXR expression in the intestine. However, opium also reduced total antioxidant. We also showed that opium intake also changed intestinal structure.

Keywords: Addiction, Intestine, Cholesterol, Malondialdehyde, LXR, Opium, Hamsters

P24

Vitamin D Deficiency and Its Relationship to Thyroid Disease

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Aim: Vitamin D is one of the important vitamin, which not only regulate calcium, but it does many other activities. Vitamin D deficiency is considered as one of world health problem, due to its role in human immune system. The main aim of this study is to investigate the relation between hypothyroid and Vitamin D deficiency to elaborate the relation between serum calcium level and thyroid disease. **Methods:** This case-control study was done on 350 subjects contains 175 subjects with hypothyroidism (75 male-100 female) and 175 healthy subjects (85 male-90 female) aged 25-65 years and this study was performed in Gorgan in north of Iran. Vitamin D < 24 ng/ml was considered as deficiency and serum Vitamin D, TSH, T3 and T4 in case and control were determined. **Results:** Serum Vitamin D level and calcium were significantly lower among hypothyroid patients compared to controls. The serum Vitamin D and calcium level were lower among female hypothyroid patients. **Conclusion:** The finding of this study showed that, the patient with hypothyroid as presented with Vitamin D and calcium deficiency, and the degree of deficiency is related to the intensity of hypothyroidism based on this study it is recommended all hypothyroid patients put on Vitamin D supplementation, all patients with hypothyroid disorder should be screened for Vitamin D and calcium deficiency.

Keywords: Vit D Deficiency, Blood Calcium Levels, Thyroid Diseases

P25

Evaluation of Calcium Level among Vitamin D3 Deficient Type2 Diabetic Patients

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Introduction Type 2 Diabetes is a metabolic disease that is very common in Iran (7% of people). Diabetes mellitus is known to have its effect on almost all body systems causing various structural and biochemical changes. Deficient in vitamin D3 as important regulators of serum calcium and bone health a cause of the development of insulin resistance in T2DM. **Material and methods** Cross-sectional study was conducted on 80 type2 Diabetic patients aged between 40-60 years old, classified based on vit D3 results into two groups, < 30ng/ml as control and >30 ng/ml considered as cases. Vit D3, calcium and glucose were determined in fasting blood samples, using competitive ELISA and colometric. **Results** The result of present studies shown there is no significant difference between mean of calcium levels of patients when compared with control group (p-value 0.024). vit D3 result in weak negative correlation with calcium (r= -0.0125) The percentage of DM was higher among females (59%), and vit D deficiency was common among females (76%). **CONCLUSION** deficient of calcium and vit D3 lead to appearance of early complications in type 2 DM patients, which need regular monitoring for design supplementation protocols. Further studies are required to understand underline mechanism.

Keywords: Type2 Diabetes, Vit D3, Calcium



P26

The Role of Curcumin Therapy on Oxidant Parameters in Type 2 Diabetes Mellitus

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Introduction: Curcumin, as an organic extract of Curcuma, can be useful in the treatment of oxidative stress including oxidant parameters. It belongs to the family of rhizomatous herbaceous perennial plant. Reduction of oxidant parameters such as AGEs (Advanced Glycation End Products), AOPP (advanced oxidation protein products), MDA (Malonaldehyde) and oxLDL (oxidized LDL), can be known as antioxidant characters of curcumin for improving the clinical process of diseases. Present study emphasizes on recent properties in type 2 diabetes mellitus and administration of curcumin on glycemic control. **Method:** Serum AGEs, AOPP, MDA and oxLDL of 50 type 2 diabetic patients were analyzed before and after receiving curcumin for 3 months. Recent parameters were measured by related biochemical methods. However, all of patients received Metformin during study. **Result:** In comparison with before study, the data of recent parameters showed significantly improved changes after 3 months study. **Conclusion:** Decrease of oxidant factors by curcumin therapy can be happened in type 2 diabetic patients. These alterations may clarify the scenery of a beneficial therapeutic modality in recent metabolic disease.

Keywords: Type 2 Diabetes Mellitus, Curcumin, Oxidant Parameters

P27

Study of Neonate's Hypothyroid Screen During 1393 to 1394 Province of Qazvin

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Introduction: Neonatal congenital hypothyroid is a clinical syndrome due to decay in thyroid hormone. Some defects that result in this disease are anatomical deficiency of thyroid gland, iodine deficiency of thyroid gland, iodine deficiency and congenital metabolic deficiencies of thyroid. Regard to side effects as mental retardation and cretinism, screening program began in Qazvin 31425 newborns samples taken from Qazvin, Takestan, Booeen-zahra and Abyek. **Materials & Methods:** In this cross-sectional prospective Study neonatal TSH (thyroid Stimulation Hormone) test Using ELISA method, with two antibodies, simple antibody and antibody with peroxidase as a Marker. Blood Sampling was taken from newborns foot heel, 72 hours after birth on guttery 303 Paper. Kits were prepared from reliable corporations by reference laboratory approval. Results analyzed by SPSS software. **Results:** from 36 Doubted results rechecked by vein blood. Finally 19 newborns are involved in congenital hypothyroid. According to findings, prevalence of hypothyroid in Qazvin is higher than the country's mean this (about 2 folds). this recognize in test importance, personal expertness and correct sampling, more than previous.

Keywords: Screening, Hypothyroid Qazvin, Neonatal TSH



P28

Biochanin A (an isoflavonoid) Supplementation to Diabetic Rats Improves Serum Oxidative Stress Markers

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Diabetes is one of the most common metabolic disorders and is interrelated to oxidative stress-induced diseases. According to the role of dietary antioxidants in control and prevention of diabetes, this study was aimed to evaluate the effect of biochanin A on serum glucose levels and serum glutathione peroxidase (GPX), lipid (MDA) and thiol groups (SH) in diabetic rats. Experimental diabetes in rats was induced by intraperitoneal injection of streptozotocin (55 mg/Kg). Biochanin A (10, 15 mg/Kg bw) was given by oral gavage to normal and diabetic rats for 6 weeks. Finally, serum glucose and serum levels of MDA and GPX were measured and analyzed statistically. Data showed that biochanin A at both doses of 10,15 mg/Kg bw significantly decreased the serum glucose levels, and increased the serum glutathione peroxidase and thiol groups in diabetic rats ($p < 0.05$). However only 15 mg/kg bw biochanin A significantly decreased serum MDA concentration against control group. The antihyperglycemic and antioxidative features of biochanin A make it an attractive candidate for the prophylactic treatment of diabetes, although further investigation is needed to determine exact dose and duration of supplementation.

Keywords: Diabetes, Biochanin A, Oxidative stress

P29

Association of Fetuin-A with 25OH Vitamin D and Ipth in Hemodialysis Patients

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Background/Aims: Cardiovascular disease (CVD) is the main cause of morbidity and mortality in the hemodialysis (HD) patients. The purpose of this study was to investigate the association between serum gas6, Fetuin A, Intact parathyroid hormone (iPTH), 25OH Vitamin D levels in HD patients. **Methods:** 46 HD patients and 43 age and sex matched control subjects were included in a cross-sectional study. The serum levels of iPTH, gas6, FetuinA, Vitamin D were determined by the routine methods. **Results:** Vitamin D and Fetuin-A levels were significantly lower In the HD patients than the healthy controls ($p < 0.0001$, both). Serum gas6, iPTH concentrations were higher in HD patients than the control group ($p < 0.0001$, all of them). serum levels of Vitamin D and iPTH levels have correlation significantly with Fetuin-A in the HD patients ($r = 0.507$ $p < 0.0001$, $r = -0.34$ $p = 0.02$, respectively). **Conclusions:** Lower Vitamin D and Fetuin-A levels and higher levels of iPTH, GAS6 may indicate increased susceptibility of atherosclerosis in the HD patients. Calcitriol together with its cognate receptor is a 'broad spectrum hormone' presumably regulating 3% of the human genome and it might well be that Fetuin-A is also under control of calcitriol.

Keywords: gas6, Fetuin-A, Vitamin D, iPTH, Hemodialysis Patients (HD)



P30

Cytotoxicity Effects of Hypericum Perforatum L. Secondary Metabolites on the Cancerous Cell Line 4T1

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Introduction: Herbal and traditional medicine has been developed in recent years. Nowadays it is very desirable to investigate new anticancer agents from natural products. The natural products obtained from organisms such as medicinal plants that is called secondary metabolites, are known as a powerful source to supplement therapy and prevention of cancer. The aim of this study was to evaluate the cytotoxicity effects of Hypericum perforatum L. secondary metabolites on one of the cancerous cell lines. **Method:** Therefore, after collecting and drying the samples, extraction process was done by water and ethanol. 4T1 cancer cell lines were incubated with different concentrations of ethanol extract for 24 and 36 hours and cell growth inhibition was determined using MTT and TUNEL assay. All the data were analyzed by SPSS 11 software by one-way ANOVA. In all the analyses $P < 0.05$ was considered significant. **Results:** Results of MTT and TUNEL assay showed dose-dependent inhibition of cancer cell growth by ethanolic extract of Hypericum perforatum L. This extract caused a significant decrease in proliferation of treated cancer cell lines. **Conclusion:** These results revealed that the ethanolic extract of Hypericum perforatum L. possess significant anticancer activity.

Keywords: Hypericum Perforatum L, Apoptosis, TUNEL, Cell 4T1

P31

Comparison of Hepatotoxicity and Nephrotoxicity of Nerium Oleander in Balb/C Mice

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Objective. Nerium oleanderis is plant that can poison livestock and humans at any time of the year, all parts of the plant both green and dry are considered toxic. **Methods:** The present study was carried out to assess the toxic effect of oral administration of the aqueous extract of Nerium oleander leaves and flowers at doses of 10, 12.5, 15 and 25 mg/kg body weight in Balb/c mice. The toxicity of this plant parts was determined after one day by measuring of serum levels of the biochemical parameters including ALT, AST, BUN and creatinin in comparison with control group (normal saline), also clinical signs were determined. Moreover, for histopathological examination, suitable samples were collected from kidney and liver of the animals. **Results:** Significant differences were seen in the level of the ALT, AST, BUN and creatinin in various doses. Histopathological study showed more severe pathological lesions especially in liver which were including congestion, hemorrhage, necrosis and mononuclear cell infiltration. Interestingly, pathological lesions were mild to moderate in experiment group with 10 mg/kg toxicity dose. While, in experiment groups with 12.5, 15 and 20 mg/kg doses, pathological lesions were severe. **Conclusion:** Results of the present study indicated severe hepatotoxicity and moderate nephrotoxicity associated with significant changes of biochemical parameters in experimental toxicity by Nerium oleander in Balb/c mice.

Keywords: Nerium Oleander, Balb/c Mice, Histopathological Examination, Biochemical Parameters

P32

Pleural Effusion Cell Counts and Biochemical Characteristic

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Cytologic study of pleural fluid is a perfect diagnostic modality which helps at mentioning the cause of effusion and likewise, in particular cases, a means of prognostication of disease course. Our objective is to evaluate the cell counts and biochemical characteristic of pleural fluid. Materials and Methods: For this cross-sectional study data were evaluated from 100 patients who underwent pleural tap at Rajaei, Kosar and Velayat Hospitals between February 2009 and November 2012. The data from these participants were obtained by a check list and laboratory (biochemical study) findings. Both descriptive and statistical analysis methods were applied. Results: Age range of subjects in present study was 32-78 years and more common in male patients (% 67). The most common chief complains were dyspnea and cough. About 64% samples were exudative and 36% were transudative. Total leukocyte count as less than 1000 cells/ml in most (85%) of transudative effusions. Generally 52.44% of exudative effusions had total leukocyte count greater than 1000 cells/ml. It was well known that 95 % of tuberculous effusions had greater than 75 % lymphocytes, 85 % had protein more than 5 gr/dl and 90.63% had glucose more than 60 mg/dl. Nearly 33 % of pleural effusions had malignant cells. Mainly (94%) of malignant effusions were exudative. Conclusions: The differential diagnosis of exudate impersonates a more troublesome challenge for clinicians. The use of certain pleural fluid tests such as cell count and differentiation, glucose and protein level, pH and, other biochemical analysis, assists to striate the differential diagnosis.

Keywords: Pleural Effusion, Cell Counts, Biochemical Characteristic

P33

Prevalence G6PD Enzyme Deficiency or Autism in Children with Jaundice Referred to Laboratory Mehr in 1394

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Glucose-6-phosphate dehydrogenase deficiency in hemolytic anemia is caused. And in the formation of glutathione molecule plays an important role. In fact, the enzyme NADPH is produced. And NADPH by reducing the glutathione and keep it in the revival and restoration of methemoglobin to hemoglobin molecules can cope with oxidative substances forgive. So far, more than 400 variants of the enzyme have been identified in the world. 40 formula and food, as a result of deficiency in people, causing hemolytic anemia was created. Some of them include: aspirin, sulfa, Fnastyn, chloramphenicol, beans, G6PD gene on the X chromosome product. Bean consumption in a group of people after severe hemolysis occurs in this case is called Autism Methods: The study was conducted on 200 infants. CBC, a blood sample was taken from each child. The kit Saba was evaluated . The red paint is intact enzyme. The blue color is a sign of its failure. Results The general approach of G6PD deficiency in the population studied / 5%. This means that 1 in every 200 children is born with the deficiency. Given the relatively high prevalence of deficiency and its relationship with neonatal jaundice and other complications at the national level there is need for a broad screening program.

Keywords: Glucose-6-Phosphate Dehydrogenase, Hemolytic Anemia, NADPH



P34

Procalcitonin Testing Reduce Unnecessary Antibiotic Use in Bacterial Infection

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Background: There is increasing interest for strategies that could curtail antibiotic resistance in the critical care setting. The duration of antibiotic therapy in critically ill patients with sepsis can result in antibiotic overuse, increasing the risk of developing bacterial resistance. Researchers sought to determine the effectiveness and safety of procalcitonin (PCT)-guided algorithms in the management of septic patients in the intensive care unit. Procalcitonin-guided antibiotic use reduces antibiotic exposure in community acquired pneumonia. **Methods:** We searched EMBASE (from 2000 to the present), MEDLINE via PubMed and Ovid (from 2000 to the present), and the Cochrane Central Register of Controlled Trials (2000 to 2014) for articles regarding PCT levels taken into account when making decisions regarding Abx. **Results:** Based on the results of this study, we conclude that PCT testing has the potential to reduce unnecessary antibiotic use in patients with suspected lower respiratory tract infections our results suggest that a protocol based on serial PCT measurement allows reducing antibiotic treatment duration and exposure in patients with severe sepsis and septic shock without apparent harm. **Conclusions:** The implementation of a procalcitonin-based algorithm may reduce antibiotic exposure in critically ill, septic patients without compromising clinical outcomes, but further research is necessary before the wide adoption of this strategy.

Keywords: Procalcitonin, Antibiotic Therapy, Antibiotic Resistance, Bacterial Infection

P35

Evaluation of Hemoglobin A1c and Lipid and Anemia in Patients with Type 2 Diabetes

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Introduction: The results of HbA1c test show average blood glucose level in recent 2 to 3 months. according to the American Diabetes Association (in 2010), this test has been accepted as a diagnostic test and screening. Cardiovascular diseases are one of the causes of death in people with diabetes which are caused by the increase in coronary blood lipids and arteriosclerosis. Some studies also mentioned anemia as one of the laboratory findings in diabetic patients. The purpose of this study is to evaluate hemoglobin A1C and lipid factor and anemia in type 2 diabetic patients. **Materials and Methods:** This cross-sectional study was done on 110 healthy people and patients with diabetes. These people had previously referred to Parsamedical laboratory. Blood samples and CBC samples were taken from all of them and the experiment was the same for all. Fasting plasma glucose and 2-hour experiments, HbA1C, blood cholesterol and triglyceride chordal, HB and RDW blood was measured as well as age and sex. Data was evaluated by Chi Square test (Chi-squared test). **Results:** In this study, 65% of 110 patients were women and 35% were men. The largest age group was aged between 40-49. Samples were divided into two groups: HbA1C <7.0 good control and bad control HbA1C > 7.0. statistics shows dependence between HbA1C and fasting blood glucose and 2hpp, TG and CHO is (P <0.05), but there was no relation between HbA1C and anemia and RDW. **Conclusions:** The results show that the HbA1C can be used not only as a long-term glycemic index, but also it can be considered as a warning for lipid disorders.

Keywords: HbA1c-type 2 Diabetes-Ipid and Anemia



P36

Accuracy of Comparison of The Screening Tests for Gestational Diabetes with a Fasting Blood Glucose, Two-Hour Tolerance Test, Tst Challenges In Pregnant Women Without Risk Factors in the Esfarayen City in 93-92

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Introduction: Gestational diabetes is the most common metabolic disorder during pregnancy To investigate the glucose challenge test at 24 and 28 weeks of pregnancy for all women who do not care. In the event of abnormal glucose challenge test (above 130 milligrams per deciliter) of glucose tolerance test (GTT) is performed and The diagnosis as soon as possible to reduce perinatal complications such as fetal macrosomia, fetal death is, Hypoglycemia, obstetric trauma. If the test is abnormal Pregnant women with gestational diabetes diagnosis can be treated. **materials and methods:** In this cross-sectional study of 997 Iranian pregnant women during routine prenatal examination to evaluate gestational diabetes (2) the center of the Esfarāyen city They visit Had not been diagnosed with from behind diabetes were collected. **findings:** Glucose challenge test all pregnant women between 24 and 28 weeks gestation in Urban Health Center No. 2 Esfarāyen city for pregnancy care In this study, 997 pregnant women prenatal care had a fasting glucose test Among them, 4 patients had abnormal FBS, While 40 of them after eating 50 grams of powdered sugar, blood glucose greater than 140 mg, Of these, 20 cases 1 and 2-hour glucose tolerance test at the same time high, And 16 1-hour glucose tolerance test high. And 4 patients had high 2-hour endurance test. **Conclusion:** The survey found that 1 and 2-hour glucose tolerance test for gestational diabetes screening is worthwhile, FBS alone is not useful to screen for gestational diabetes

Keywords: Gestational Diabetes, Glucose Tolerance Test, Glucose Challenge Test, FBS

P37

Relationship Hemoglobin A1c, TSH, and Anemia in Patients with Type 2 Diabetes

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Introduction: Diabetes is the most common metabolic disease in the world. When people with diabetes, thyroid disease are affected, these individuals blood glucose control is disturbed. Since diabetics are at high risk for cardiovascular disease, diagnosis and treatment of thyroid diseases is important. In some studies finding anemia type 2 diabetic patients. In this study the relationship between hemoglobin A1C, TSH, and anemia in people with type 2 diabetes will be discussed. **Materials and Methods:** This cross-sectional study on 110 healthy patients with diabetes. This had previously called on a lab Since all samples of blood samples CBC was the same way on all of them and the trials were conducted. In addition to age, sex, blood sugar testing, HbA1C, TSH, HB and RDW blood was measured. Data through chi square test (Chi-squared test) were evaluated. **Results:** In this study of 110 patients, 65% women and 35% men aged between 40-49 years And. byshtryn example of data into two groups: good control of HbA1C <7.0 control group Bad HbA1C > 7.0 were divided. Statistics show that between glucose and HbA1C hormone TSH in patients with type 2 diabetes, Relation significantly (P <0.05), but the relationship between anemia and changes size Red blood cells not observed. **Conclusions:** In summary, Thyroid dysfunction is common among diabetic patients and in patients with type 2 diabetes, TSH measurement should be performed at diagnosis. In this study there was no direct relationship HbA1C with anemia and changes in RBC size that is inconsistent with some studies.

Keywords: Hemoglobin A1C, TSH, Anemia - Type 2 Diabetes



P38

The Correlation between Serum Levels of Vitamin D and CRP in Type 2 Diabetic Patients in Tabriz Imam Reza General Hospital

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Background/Aim: Due to the progressive increase in diabetes in our country and complications from inflammation in the disease symptoms that predispose patients are at risk, in this study the correlation between serum levels of vitamin D in patients with type II diabetes mellitus referred to Imam Reza Hospital of Tabriz were studied. **Design and Methods:** We measured serum CRP with qualitative method and total vitamin D using Cobas e 411 analyzer (electrochemiluminescence method) from 112 patients (male/female 61/51); median age 68 years were analyzed. Analysis of variance was performed with age, gender, inflammatory status. **Results:** The correlation between total vitamin D and CRP was highly significant ($p < 0.005$). we observed increasing total vitamin D levels are associated with decreasing CRP levels in type II diabetic patients. **Conclusion:** Our study shows that increasing vitamin D levels negatively correlated with CRP levels in type II diabetic patients. In the same study conclude that vitamin D supplementation during 6 months reduced CRP levels and insulin resistance among diabetic, postmenopausal women. It is possible to conclude that maintenance of serum vitamin D levels holds advantageous aspects in diabetic patients.

Keywords: Vitamin D, CRP, Type 2 Diabetic Patients, Inflammatory

P39

The Prevalence of Vitamin D Deficiency in Women Referred To Laboratory of Pasteur City of Babol

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Background: Vitamin D is a steroid hormone metabolism of minerals, especially calcium, phosphorus and bone strength play an important role. The aim of this study was to evaluate the prevalence of vitamin D deficiency in women referred to Babol city's Pasteur laboratory. **Methods:** A cross-sectional study was conducted in the second quarter of The study population of 373 women aged 18 to 35 years who were selected through census. For every person 5cc blood serum vitamin D levels tested to evaluate serum levels of vitamin D. The subjects were divided into 4 groups based on serum levels of vitamin D, values below 18 nmol/L severe shortage vitamin D, 23-18 deficiency, mild and values 23-36 slight deficit and levels above normal levels of vitamin D were 36. Data entered and analyzed using SPSS statistical software was used. **Results:** of the 373 women studied, 331 patients 88.7 percent of the problems of extreme were vitamin D deficient. 213 women studied 57.1 Severe shortage, 53 women studied, 14.2 Moderate deficiency and 65 women studied average of 17.4 per cent of vitamin D deficiency were mild. Only 11.3 percent of women studied, 42 patients had normal test results. Average serum vitamin D (19.55) nmol per liter respectively. There was no significant relationship between age and vitamin D deficiency. **Conclusion:** Considering the high prevalence of vitamin D deficiency in women, it is proposed that a comprehensive review be done in this regard, the population of the city of Babol.

Keywords: Deficiency of Vitamin D, Women, Pasteur Laboratory of Babol



P40

The Study of Relationship between Plasma Proprotein Convertase Subtilisin/Kexin Type 9 (PCSK9) Levels, Sterol Regulatory Element-Binding Protein-2 Gene Expression Level and Lipid Profile in the Persons with Plasma Cholesterol Concentration More Than 200 Mg/Dl

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Aim: Atherosclerosis is a condition where the arteries become narrowed and hardened due to an excessive build up of plaque around the artery wall. The disease disrupts the flow of blood around the body, posing serious cardiovascular complications. The study aim was to investigate the relationship between Sterol regulatory element-binding protein-2 gene expression, plasma Proprotein convertase subtilisin/kexin type 9 (PCSK9) levels and other factors including lipid profile in the persons with plasma cholesterol concentration more than 200 mg/dl. **Methods:** In this study, One hundred twenty six Iranian subjects (male 68, female 58) were recruited based on the study criteria. Total RNA was extracted from WBC and, the gene expression level was determined by RT-qPCR method. plasma PCSK9 levels and The lipid profile were measured by ELIZA and routine methods. The results were analyzed by statistical tests with Spss software (Ver. 16). **Conclusion:** Result showed significant relation among LDL-C, sex, plasma PCSK9 levels and Sterol regulatory element-binding protein-2 gene expression ($P < 0.05$). **Discussion:** The results showed a relationship between plasma PCSK9 levels, Sterol regulatory element-binding protein-2 gene expression and serum LDL-C level.

Keywords: Coronary Heart Diseases, Atherosclerosis, Lipid Profile, Sterol Regulatory Element-Binding Protein-2 Gene Expression, PCSK9

P41

Evaluation of Oxidative Stress and Lipid Profile in Serum and Ascite Fluid in Patients with Liver Cirrhosis in Tabriz

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Objective: Liver cirrhosis is the result of chronic inflammation of liver tissue which results for different reasons. Any kind of inflammation results in tissue destruction. One of the useful evaluation indexes for determining the reduction of liver biosynthesis capacity is checking the amount of lipid profile and oxidative stress in the liver cirrhosis patients which changes unnaturally in chronic liver diseases. Therefore, the main goal of study is to check the amount of lipid profile and oxidative stress serum and ascites fluid in liver cirrhosis patients. **Methods:** This is a cross sectional research study in which the target population is liver cirrhosis patients with infectious or non-infectious ascites fluid. The participants are 120 people which are investigated in four different groups. Two samples of blood are taken from all the people and a sample of ascite is taken from cirrhosis patients. Lipid profile and the activity of superoxide dismutase enzymes and glutathione peroxidase are measured in the samples of blood and ascite fluid. **Results:** In the above mentioned groups, the amount of lipid profile serum and ascite fluid and the amount of superoxide dismutase enzymes and glutathione peroxidase activity in the red blood cells and ascite fluid shows a significant decrease. **Conclusion:** In liver cirrhosis patients, the amount of oxidative stress and oxidized LDL shows a significant increase. We can use it for monitoring the development of disease and it shows serious damage to liver. Also we can confirm it with the significant decrease in the amount of lipid profile.

Keywords: Liver Cirrhosis, Infectious And Non-Infectious Ascites Fluid, Oxidative Stress, Lipid Profile



P42

Effect of Zinc Supplementation in the Serum Concentration Levels of Zinc, Copper, Copper/Zinc Ratio and Sputum Smear Conversion in the Pulmonary Tuberculosis Therapy

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Zinc is nutritionally essential trace element, thus deficiency may severely affect human health. The results of cross-sectional studies indicate that micronutrient deficiencies are common in patients with tuberculosis. There is no information about impact of zinc supplementation on anti-tuberculosis treatment in Iran. In this study, patients with newly diagnosed tuberculosis were divided into 2 groups. One group (n=38) received capsule contains 50mg of elemental Zinc (as zinc sulfate) daily for 6 months every other day (micronutrient group). The second group (n=38) received a placebo. Both groups received the protocol anti-TB treatment recommended by the World Health Organization. Clinical examination: body mass index (BMI), chest X-ray, direct sputum examination and culture, assessment of serum Zinc(Zn) and copper (CU) levels by Atomic Absorption Spectrophotometer and serum were carried out before and after 2 and 6 months anti-TB treatment. We found that, in the micronutrient group, Serum levels of Zn, BMI were significantly higher than placebo group after 2 and 6 months of anti-TB treatment ($P < 0.05$). Serum levels of Cu was significantly ($P < 0.05$) decreased after 2 months of anti-TB treatment. Also Cu/Zn ratio was significantly decreased after 2 and 6 months of anti-TB treatment ($P < 0.05$). sputum smear conversion was significantly ($P < 0.05$) higher than placebo group during 2,4 and 6 weeks of anti-TB treatment. zinc supplementation improved the effectiveness of tuberculosis medication and sputum smear conversion during the first 6 weeks. In additional it was successful and increased body weight 2 months in the micronutrient group.

Keywords: Pulmonary Tuberculosis, Zinc Supplementation, Copper, Sputum Smear

P43

Psoriasis: The Levels of Oxidant/Antioxidant

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Background: Psoriasis is a chronic inflammatory skin disease with an unknown aetiology that has been associated with abnormal plasma lipid metabolism and oxidative stress. There are controversial results in the previous studies investigating oxidant/antioxidant systems in psoriasis. Objectives: The aim of this work was to evaluate the plasma levels of malondialdehyde (MDA), superoxide dismutase (SOD), catalase (CAT), total bilirubin (T. Bili), direct bilirubin (D. Bili), uric acid (UA), apolipoproteins (ApoA1 and ApoB), Lp(a) and activities of paraxonase 1 (PON1) in 100 patients with psoriasis and 100 controls, and to look for a correlation between these parameters in psoriasis. Methods: PON1, bilirubin and UA were measured spectrophotometrically, MDA by the high-performance liquid chromatography method, apolipoproteins and Lp(a) by immunoprecipitation assays, and lipid and other biochemical parameters were determined by routine laboratory methods. Results: In patients with psoriasis, there was a significant decrease in PON1, SOD and CAT activities ($P < 0.05$) and an increase in MDA levels ($P < 0.01$). Also, the levels of bilirubin (total and direct) and UA were decreased in patients with psoriasis but were not significant ($P > 0.05$). Conclusion: These results suggest that psoriasis was in a state of oxidative stress and that the protective effects of high-density lipoprotein against atherosclerosis may be dependent on PON1 activity. Moreover, there is a negative correlation between antioxidant with Lp(a), apoB and MDA levels, suggesting that subjects with higher levels of Lp(a) and apoB and lower levels of antioxidant are more exposed to oxidative damage.

Keywords: Psoriasis, Oxidant, Antioxidant, Lipids



P44

Screening Neonatal Jaundice in Infants 3 – 5 Days in Point of Care by Bilimeter 3

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Neonatal hyperbilirubinemia is either unconjugated which is potentially toxic or conjugated not toxic which is always pathological. Jaundice is clinically detectable in the newborn when the serum bilirubin levels are greater than 5 mg/dL. The aim of this assessment is to identify babies at risk for jaundice testing by Bilimeter 3 which is quick and easy and cheap. Bilimeter 3 is a device for determining the total bilirubin concentration in the serum of newborns. This device, an entirely new development, is not only easy to handle but can also be used both in laboratories and as a Point of Care device. Bilirubin level measured in babies with a gestational age of 35 weeks or more and postnatal age of more than 24 hours who presents on the second or third day of life by Bilimeter 3. This study was conducted on 3282 newborns. There was 51.7 % (1700 sample) male and 48.3 % (1582 sample) female. At three years study it was 3116 positive sample (94.9%), 1635 male (49.7%) and 1481 female (43.5%). Further investigation is essential, If a bilirubinometer measurement indicates a bilirubin level greater than 5 mg/dL check the result by measuring the serum bilirubin by others method. This neonatal screening experiment at first is covered placed more infant in point of care stage and is for information only and should not be used for the diagnosis or treatment of medical conditions. Also, will be need consult a doctor or other health care professional for diagnosis and treatment of medical conditions.

Keywords: Néonatal Screening, Jaundice, Hyperbilirubinemia, Bilimeter

P45

Effect of Trazodone on Liver Function Tests (LFT)

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Introduction & objectives: Trazodone is a drugs that has potent inhibitor of the reuptake of dopamine and acts selectively on noradrenergic and dopaminergic systems. This drug causes antidepressant effects and reduces the dependence on nicotine through acetylcholine receptors. **Materials & methods:** 40 male Wistar rats, each weighting 200±20 g in 5 groups of 8 were used as follow: The control group which did not receive any drug during the experiments, the sham group received only water and alcohol as a solvent. Minimum, average and maximum experimental groups received orderly amount of 50,100,150 mg Trazodone solution orally for 28 days and after the end of this period, the blood was given to determine the level of factors such as ALT, AST, ALP, protein and albumin. Obtained results were analyzed by ANOVA, T test and Tukey test. Results showed the level of AST and ALT enzymes serum, indicate significant increase at the level of $P \leq 0.05$ compare to control group and no significant changes was observed in ALP, albumin and protein. Also the livers were collected for studying of histological changes. **Results:** Accordingly we can say that this drug effects on cells and liver tissue and leads to hepatic necrosis that itself justifies an increase in AST and ALT enzymes. Because in maximum group, acute necrosis has been occurred in the liver. **Conclusion:** We can say that this drug has a negative impact on hepatocytes cells and causes disorder of liver function and changes the concentration of some blood biochemical factors.

Keywords: Trazodone, LFT, Liver, Rat



P46

Prevalence of Hypercholesterolemia in Zanjan

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Introduction Cholesterol is a substance found in all cells of the body are made of fat and build cell walls, and hormones play an important role. the most important causes of morbidity and mortality in human societies mentioned. Given the importance of cholesterol in the area we decided to do a study in Zanjan province. **Materials and Methods** This cross-sectional study based on the findings that included 22 248 patients (8055 males and 13962 females and 231 children) who were selected through stratified cluster sampling and implemented accordingly. In this study, serum cholesterol levels desired by Autoanalyzer Hitachi 717 and using photometric measurements were recorded and analyzed with SPSS software. **Conclusion** of the total cases, 15984 cases (71.84%) have been higher than normal cholesterol, and 6264 patients (28.15%) have normal cholesterol. The study found that of 213 children, 22 women (9.5% of children), from 8055 males, the number of 1983 cases (24.61% of men) and 13962 females, the number of 4259 cases (30.50% women) cholesterol levels are high. **Results** According to figures obtained in this study, 71.84% of people (male and female) with normal cholesterol and 28.15% of people (male and female) were studied with high cholesterol.

Keywords: Hypercholesterolemia, Cardiovascular Disease, Photometric, Zanjan

P47

Correlation between Serum Ferritin Levels in Patients with Vitamin D Deficiency with Normal Controls

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Introduction: Iron and vit D deficiency are two extensive nutritional disorders in Iran. Ferritin serum level measurement is one of the best methods for evaluating iron deficiency. Some studies show vit D can stimulate hemathopoiesis. This study evaluates the ferritin serum level in vit D deficient patients and patients with normal serum level of vit D. **METHOD:** In this study 180 referred patients to the clinical laboratory are chosen after filling a questionnaire showing they have no recognized disease. After 12 hours of fasting the serum specimen was tested for ferritin and vit D levels. Vit D and ferritin have been checked by ELISA method and VIDAS system respectively. **RESULTS:** The mean age of studied population is 33.2 ± 12 which 60 of them are men and 120 are women. Serum vit D level in 25% of them are lower than 10 ng/ml (8.6 ± 0.96) and in the 75% vit D level is more than 10ng/ml (26.7 ± 5.2) The mean serum ferritin level in the first and 2nd group is 27.5 ± 16.4 ng/ml and 38.6 ± 19.3 ng/ml respectively which is statistically significant. **Conclusion:** Regarding the relationship between vitamin D deficiency and serum ferritin is recommended measurement and correction concurrently in the treatment of patients with iron deficiency done.

Keywords: Ferritin, vitamin D, Anemia

P48

Protective Effect of Borago Officinalis Extract on Almal Treated PC 12 Cells

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Introduction: Progressive neurological diseases such as Alzheimer's and Parkinson's diseases are particularly prevalent in old age. One of the contributing factors to the problem is heavy metals toxicity, especially aluminum. Borago Officinalis used in traditional medicine and the abundance of several antioxidant effect of this plant have been shown to reduce oxidative stress. The aim of this study was to evaluate the protective effect of the extract of borage on PC12 cell line treated with aluminum and oxidative Stress Changes after treatment with different doses of aqueous and alcoholic extracts of borage. Methods PC 12 cell line was cultured and treated with different concentrations of aluminum maltolate and cell viability was determined by MMT assay then chooses the best concentration. Apoptosis was analyzed using flow cytometry, Then different concentrations of aqueous and alcoholic extracts of borage added in PC12 cells treated with toxic dose of aluminum and the cell viability and apoptosis were assessed. The oxidative stress in a series of treated cells was determined by measuring Catalase enzyme activity. Result Aqueous and alcoholic extracts of borage on specified doses has a protective effect on cells treated with Almal and apoptosis is reduced. Catalase activity increased with increasing doses of aqueous and alcoholic extracts of borage. discussion Aluminum effect on the induction of oxidative stress was determined. In this study, for the first time, we have shown aqueous and alcoholic extract of borage protective effect on PC12 cells treated with Almal and cell apoptosis and oxidative stress were reduced.

Keywords: Borago Officinalis, PC12 Cells, Aluminum Maltolate

P49

Serum Albumin Levels in Acute Stroke: Correlation with Clinical Outcome

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Introduction: Lower levels of albumin is related to worse prognosis of stroke. Also evidence has shown that albumin therapy reduces mortality after stroke. Since there are so much discrepancy on the association between serum albumin levels and stroke outcome. This study was carried out to investigate the association of serum albumin levels with clinical outcome in acute stroke. **Methods:** In current case control study, 300 stroked patients aged (71.2 ± 10.8 years of both sexes entered the study consecutively) are involved. Serum albumin levels were estimated by colorimetric assay within 24h after stroke and follow-up interviews were conducted at 2 months post-event to determine stroke outcome. The association between serum albumin levels and stroke outcome was evaluated by Chi-Square Test (SPSS software 22). **Results:** Low levels of albumin were significantly associated with poor outcome (score of >3 on the modified Rankin Scale). The adjusted odds ratio was 0.522 (95% confidence interval, 0.204 - 1.336; $P < 0.05$). The recurrence of stroke and death rate also was high in patients with low levels of albumin compared with patients with elevated levels of albumin. The reduced levels of serum albumin were significantly associated with poor outcome in the stroke. **Conclusions:** low albumin levels in our study were found to be significantly associated with a negative outcome in acute stroke. so it seems that the levels of serum albumin can be predict of stroke outcome.

Keywords: Stroke, Albumin, Clinical Outcome



P50

Serum 25-Hydroxyvitamin D Levels in Patients with Asthma Compared with Healthy Individual Beheshti Hospital in Hamedan/West of Iran

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Introduction: Epidemiologic studies suggest that vitamin D deficiency and insufficiency is common throughout the world and can be associated with many diseases include: asthma. The aim of this study was to evaluate serum 25-hydroxyvitamin D levels in patients with asthma in Beheshti Hospital Hamedan west of Iran was compared with normal individuals Materail and method: This cross-sectional study on 45 patients hospitalized with asthma, lung ward Beheshti Hospital, Hamadan. That by using spirometry, asthma was diagnosed by lung specialist. Given the age of the control subjects, 45 patients were selected randomly. vitamin D was performed by ELISA CALBIOTEC USA company. Data collected were analyzed using SPSS software. Findings: Chi-square test was no correlation with serum levels of vitamin D in the two group was observed. And According to ANOVA significant difference was observed between vitamin D levels and age groups. Results: Average serum levels of vitamin D for case and control group insufficient between serum levels of vitamin D. therefore can not be defined and certain related asthma. As well as numerous confounding factors may have affected the outcome of the study.

Keywords: Asthma, Vitamin D, Beheshti Hospital

P51

Positive Association of Oxidative Stress and Serum TG/HDL-C Ratio in B-Thalassemia

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Background and Aims: β -Thalassemia (β -TM) is associated with altered lipid levels that can lead to coronary heart disease (CHD). Abnormal ratio of triglycerides to high-density lipoprotein cholesterol (TG/HDL-c) is powerful predictor of CHD. The aim of this study was to compare the level TG/HDL-c between β -Thalassemia patients and healthy control and its association with ischemia modified albumin (IMA) as a marker of oxidative stress. **Methods:** We measured the serum lipid profile including total cholesterol (TC), TG, HDL-C, low-density lipoprotein cholesterol (LDL-C) and TG/HDL-c level of 52 patients with β -TM and 42 healthy subjects. Oxidative status was evaluated by measuring serum IMA level. The relationships between these parameters and serum ferritin were examined. **Results:** Our findings revealed that the level of IMA, TG and TG/HDL-c were significantly higher while TC, HDL-C and LDL-C were significantly lower in β -TM patients compared to control group. TG/HDL-c was positively correlated with IMA ($r=0.586$, $P<0.001$). **Conclusion:** The present study indicates that β -TM patients are at higher risk of CHD compared to healthy subjects that is related to presence of oxidative stress in these patients.

Keywords: Ischemia Modified Albumin, Oxidative Stress, Serum Lipids, β -Thalassemia

P52

No Association of Vitamin D3 Receptor (VDR) Gene Rs2228570 Polymorphism with Risk of Multiple Sclerosis; a Case-Control Study in Iranian Population

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Background The fundamental role of Vitamin D cannot be denied in biological systems. Similar other steroid hormones, vitamin D acts in modulation immune responses and regulating cell proliferation and differentiation. Active metabolite vitamin D enter the cell by cross - linking vitamin D receptor (VDR). studies on VDR gene polymorphisms shown that polymorphism is implicated in several disease conditions including: diabetes, cancer, and neurodegenerative autoimmune disease i.e. multiple sclerosis (MS). **Materials and method** In current study, we analyzed Fok1 (rs228870) polymorphism, which occurs more frequently in VDR gene. The study was carried out on 115 MS patients and 120 healthy individuals through Polymerase Chain Reaction - Restriction Fragment Length polymorphism (PCR – RLFP). **Result** VDR Fok1 (rs2228570) allelic and genotype frequencies no significant difference between MS patients and healthy individuals. **Conclusion** this results suggest that VDR Fok1 (rs228570) polymorphism are not related with the risk for MS.

Keywords: Polymorphism, Multiple Sclerosis, VDR

P53

The Impact of Subclinical Hypothyroidism on Hematological Indices

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Thyroid hormones plays an important physiological role in maintain metabolism of entire human body and proliferation of blood cells. Thyroid disorders can be associated with RBC disorders and changes in hematology indices. Subclinical hypothyroidism, a hidden disease related to iron deficiency anemia and other disorders. The aim of this study was to evaluate the effect of subclinical hypothyroidism, on the blood indices and iron stores of the body. This retrospective study includes 300 apparently healthy individuals referred to private clinics in Gorgan. TSH hormone, Ferritin serum level, RBC and MCV, MCH, MCHC indices of the subjects were assessed. Among study group, 254 and 46 subclinical hypothyroidism patients were diagnosed. The results showed that, Ferritin levels mean in patients with subclinical hypothyroidism, are higher than Euthyroid. However there were no statistical correlation between TSH hormone levels and blood indices. Also a significant correlation between Ferritin levels and MCV were observed in those with low serum ferritin level. (P= 0.03) In patients with changes in Hematological Indices, thyroid hormone should be checkup.

Keywords: Subclinical Hypothyroidism, Blood Indices, Ferritin



P54

Correlation between Menstrual Disorders and Subclinical Hypothyroidism and Prolactin

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Thyroid hormone plays an important role in maintain reproduction. Thyroid dysfunction often leads to disruption of menstruation and ovulation. Prolactin is increased in patients with hypothyroidism. The aim of this study was to investigate the relationship between menstrual disorders in women with subclinical hypothyroidism and serum prolactin level. This study performed on 250 women with the menstrual disorders, without structural abnormalities and an average age of $31/32 \pm 8/9$ referred to private gynaecology clinics in Gorgan from 1393 to 1394. Blood samples were taken on the third day of menstruation. Serum levels of TSH, T3, T4, PRL, LH, FSH were determined = by chemiluminescence assay. 25 patients (10%) were diagnosed subclinical hypothyroidism with average age 29 years old. There was a positive correlation between TSH and PRL levels ($P = 0.02$). Also, according to PRL levels, patients with normal and high levels, showed significant correlation LH ($P = 0.04$) and FSH (0.01). Pituitary hormones such as TSH and PRL may be act synergistically with = LH and FSH hormones, to enhance the follicles enter the growth stage.

Keywords: Subclinical Hypothyroidism, Menstrual Disorders, Prolactin

P55

The Prevalence of 25-Hydroxy Vitamin D Deficiency in Healthy Men and Women Referred to Private Laboratories in Zanzan

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Introduction: Vitamin D is one of the essential vitamins for the body. In recent years, vitamin D deficiency is a common problem known world. The average vitamin D awareness of different ages can help us in finding appropriate solutions to improve lives. Methods: In this cross-sectional descriptive-analytic study on 17 626 patients were referred to private laboratories. Average vitamin D all subjects were evaluated by HPLC. Then the data were analyzed by the SPSS19 Software. findings: The results of tests on patients revealed that, From 17 626 cases referred (67.9 %) 11 965 patient were vitamin D deficient That a significant percentage (65.01%) women 7786 and (8.2%) 984 children (27.77%) 3195 men. Women younger than 20 years (7.34%) 572 persons and women 20-50 years (69.77%) 5433 persons and women over 50 years (14.89%) 1782 persons Conclusion: The study showed that the highest prevalence of vitamin D deficiency in women 20-50 years old. Because of this lack of receiving too little vitamin D through food and not enough of the sun enjoying the clothing of women in our society. It is suggested that as many advanced countries by adding vitamin D to address this shortcoming would be in the food chain.

Keywords: HPLC, 25-Hydroxy Vitamin D, Deficiency



P56

Hsp 27 Protein Expression in the Early Detection of Breast Cancer in Women

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Background: Identify disease at an early stage increases the chances of survival of patients and control patients. Check the status of tumor markers and protein profile as factors in determining knowledge of invasive disease, and consequently the response to treatment is very effective aid. Thus, proteomics can be a useful tool to identify proteins involved in change metabolic and signaling pathways involved in production breast cancer. The present study the protein expression of Hsp 27 in the early detection of breast cancer in women using proteomics has been. **Methods:** A biopsy of the tumor tissue were removed of 10 women with invasive ductal breast cancer with higher BMI 30. Protein separation was by two-dimensional electrophoresis, data analysis software, Image master 2D platinum6.0, and t-test at 95% and the target protein identification by MALDI-TOF MS / MS. **Results:** Among the expressed proteins, Hsp 27 protein expression was higher in comparison with other proteins ($P < 0.05$). **Conclusion:** According to the findings of this study seem high expression of HSP27 protein was by factors such as inflammation, oxidative stress and hypoxia. With proteomics method the intracellular processes that control cell division and differentiation or apoptosis in normal cells, and information about the factors disrupting cellular function achieved.

Keywords: Protein Hsp 27, Breast Cancer, Proteomics

P57

The amount of Prostate-specific Antigens in Men 90-35 Years Referred to Private Laboratories in Zanjan

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Introduction Prostate cancer is the most common cancer and the second-leading cause of cancer death in American men and the prevalence of a direct correlation between increasing age. This study aimed to determine the level of prostate-specific antigen (PSA) in men referred to private laboratories ranging in age from 35 to 90 years was conducted Bu Ali Zanjan. **Materials and methods** In this prospective study, 3436 men were referred to a private lab Bu Ali Zanjan and after the inclusion criteria, they were approved, the PSA level was determined. Serum prostate-specific antigen chemiluminescence immunoassay devices and LIAISON were measured. **conclusion** 3436 men between the studies referred to private laboratory's Bu Ali Zanjan number of 3011 cases (87.63%) than men with normal levels of prostate-specific antigen as well as the number of 425 patients (12.36%) than men also have higher levels of antibody's prostate-specific gene that age range 90-35 years. **Results** According to the findings obtained in this study, PSA levels in men 90-35 years should be stated that the study of aging, increases and due to its natural range at any age, it can be used as a factor for screening prostate cancer can be used. There is a direct correlation with patient age and prostate volume.

Keywords: Prostate Specific Antigen, Prostate Cancer, Chemiluminescence, Zanjan



P58

Evaluate the Relationship between Vitamin D and Diabetes Mellitus in Patients Referred to Private Laboratories in Zanjan

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Background: In recent years, vitamin D deficiency is a common problem known world. On the other hand the rate of diabetes and the body's ability to use the proper metabolism of glucose is reduced and therefore increased blood sugar level is called hyperglycemia arises. The aim of this study was to investigate the relationship between serum levels of vitamin D metabolism impact on blood sugar. **Methods:** In this cross-sectional analytical study was performed on 1945 patients. Vitamin D HPLC method for all subjects and hemoglobin A1C was assessed by column chromatography. Then the data were analyzed by the SPSS19 Software. **Results:** From 1945 patients (53.3%) 1036 patients had high level of hemoglobin A1C and (46.7%) 909 patients had normal hemoglobin A1C. Of patients with hemoglobin A1C above (57.9%) 600 patients had low levels of vitamin D and (42.1%) 436 patients had normal vitamin D. **Conclusion:** This study showed that people who have lower levels of vitamin D are more likely to have pre-diabetes and diabetes. It is suggested due to the stronger influence of parathyroid hormone can review this relationship as upstream regulators of vitamin D also be done.

Keywords: 25-Hydroxy Vitamin D, Diabetes, Column Chromatography, HPLC, Zanjan

P59

Assessment of Inflammatory Markers and its Relation with Clinical Status in Stroke patients

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Introduction: Acute stroke is the most common neurological disease. Stroke is the second leading cause of mortality worldwide and is a major cause of long-term disability. In addition, in occurring of inflammatory cascade, the stroke will be activated and play main role in disease separated from them. This study was carried out to investigate the association of serum TNF- α and IL-6 levels with clinical outcome in acute stroke. **Methods:** The study involved 90 patients. 45 control and 45 patients with first-time stroke aged 71.2 ± 10.8 years of both sexes entered the study consecutively. Modified Rankin Scale (mRS) for stroke severity were evaluated on 2 month. Serum IL-6 and TNF- α level was measured by ELISA on days The association between serum TNF- α and IL-6 levels in stroke patients with control values and stroke outcome was evaluated by T-test (SPSS software 22). ($P < 0.05$.) **Results:** Mean serum TNF- α and IL-6 level in the control group and Mean serum TNF- α level in the stroke patients group was (26.57 pg/ml, 45.30 pg/ml, 112.55 pg/ml, 140.02). The levels of TNF- α and IL-6 in serum were no significantly correlated with the volume of Dysphagia ($r = .099$; $P < 0.05$ and $r = .170$; $P < 0.05$). **Conclusions:** The results of this study demonstrate that increased inflammatory markers increase the severity of dysphagia and worsening clinical status of patients. Therefore inflammatory markers can be used as reliable prognostic factors for predicting the prognosis of patients with stroke.

Keywords: Inflammatory, Stroke, Dysphagia

P60

Macrophage Migration Inhibitory Factor as a Potential Biomarker of Endometriosis

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Objective: To evaluate the expression of MIF, CD74, and COX-2 during the menstrual cycle in peripheral blood. **Design:** The expressions of MIF, CD74, and COX-2 in normal, ectopic, and eutopic endometrium were evaluated with the use of realtime. polymerase chain reaction. MIF protein in peripheral blood samples was checked with the use of ELISA. **Setting:** Reproductive biomedicine research center. **Patient(s):** Sixteen normal women and 20 women with endometriosis. **Intervention(s):** Ectopic biopsies were obtained with the use of laparoscopic procedure, and eutopic and control biopsies were obtained with the use of Pipelle. Peripheral blood samples were collected before laparoscopy. **Main Outcome Measure(s):** The expression of MIF, CD74, and COX-2 in normal, ectopic and eutopic endometrium during the menstrual cycle and the expression level of MIF in peripheral blood samples. **Result(s):** Relative mRNA expression of MIF, CD74, and COX-2 were significantly higher in ectopic endometrium than in eutopic and control endometrium. Also, there were significant differences in expression of these genes in normal, ectopic, and eutopic endometrium during the menstrual cycle. Moreover, women with endometriosis had significantly higher circulating levels of MIF compared with control subjects. **Conclusion(s):** Dynamic expression of MIF, CD74, and COX-2 during the menstrual cycle could play an essential role in reproduction, inflammation, and endometrium reconstruction. A higher expression of these genes in ectopic endometrium can be considered as a molecular biomarker for endometriosis development and pathophysiology. Also, a high level of MIF in blood serum can act as a biomarker in the diagnosis of endometriosis.

Keywords: MIF, CD74, COX-2, Endometriosis, mif, CD74, COX-2, Endometriosis

P61

Role of Adipokines in Increased Risk of Breast Cancer in Women with a Body mass Index Higher than 30

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Background: it is known that in the pathogenesis and progression of breast cancer, process complicated of various factors are involved such as a hormone, genetic background, new genetic mutations and physical and chemical environmental factors. Obesity is one of the most important risk factors for this disease so that women with a body mass index (BMI) higher than 30, about 12 percent more likely. It is known that protein factors secreted by fat tissue that adipokine known can changed metabolic activity and signaling pathways involved in cancer. In the present study examines the role of adipokines in increased risk of breast cancer in women with a BMI above 30 by proteomics. **Methods:** A biopsy of the tumor tissue were removed of 10 women with invasive ductal breast cancer with higher BMI 30. Protein separation was by two-dimensional electrophoresis, data analysis software, Image master 2D platinum6.0, and t-test at 95% and the target protein identification by MALDI-TOF MS / MS **Results:** The total number of proteins produced by the tumor tissue was 1007 spots. The proteins such as hsp27, glyceraldehyde 3-phosphate dehydrogenase (GAPDH), cytochrome 19 (CK19) and albumin were the highest expression (P <0.05). **Conclusion:** It seems that with the increase in adipose tissue mass production this proteins increased. Can be proteome study and using techniques such as Mass Spectrometry, access to databases and bioinformatics for protein and their interpretation, Biomarkers that are able to predict and diagnose diseases identified.

Keywords: Adipokines, Breast Cancer, Body Mass Index

P62

Influence of Flaxseed on Biochemical Factors, Antioxidant Activity and Expression of Cholesterol Transporters in the Liver and Intestine of Diabetic Rat

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Objectives: in this respect, intestinal and liver cholesterol transporters such as liver X receptor (LXR), Niemann-Pick C1 like 1 (NPC1L1), ATP-cassette binding proteins G5 (ABCG5) and G8 (ABCG8) play vital role in cholesterol homeostasis. **Methods:** Animals were divided into 3 groups; 1: normal diet, group2: diabetic rats, and group3: diabetic rats + 4% (w/w) flaxseed. After one-month rats were sacrificed, blood was collected; lipid profiles were determined enzymatically, antioxidant enzymes such as MDA, SOD were determined according manufacture protocol. The mRNA and protein levels of SR-BI were determined by RT-PCR and westernblotting, respectively. **Results:** Compared with diabetic rats, flaxseed total cholesterol, LDL-C, triglycerides, VLDL-C and atherogenic index (all of them $P < 0.05$). Level of MDA significantly reduced in those treated with flaxseed by 36 % when compared with diabetic rats ($P < 0.05$). In this experiment SOD significantly reduced in diabetic group while flaxseed markedly increased SOD activity ($P < 0.05$). Intestinal NPC1L1 was significantly decreased ($P < 0.01$) in flaxseed group compared with diabetic animals. Intestinal ABCG5 and ABCG8 were significantly increased ($P < 0.001$) in flaxseed group treatment compared with diabetic animals. Liver ABCG5 and ABCG8 were significantly increased ($P < 0.01$) in flaxseed treated-animals compared with diabetic group. The reduction of liver NPC1L1 in flaxseed treated animals was not significant compared with diabetic animals. Intestinal LXR α ; was significantly increased ($P < 0.05$) in flaxseed group compared with diabetic animals. Levels of intestinal regulatory protein of LXR α ; significantly increased in flaxseed group ($P < 0.05$). **Conclusions:** This plant reduced cholesterol levels by change the expression of cholesterol transporters in diabetic rats.

Keywords: ABCG5, ABCG8, Cholesterol, Diabetes, Flaxseed, LXR, MDA, SOD

P63

Investigation of Relationship between LPL Gene Variants (Rs285 and Rs320) with Biochemical Variants in Patients with Premature Acute Myocardial Infarction and Normal Subjects

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Introduction: Acute myocardial infarction (AMI) is one of the leading causes of morbidity and mortality in the world. The most common cause of AMI is coronary artery disease (CAD) that is a multifactorial disease, resulting from genetic and environmental factors interaction. Evidences suggest lipoprotein lipase deficiency is one of the major contributors to cardiovascular pathologic state such as CAD. In this research we aimed to assess the association between rs285 and rs320 genotypes AMI risk factors. **Methods:** The study population consisted of 100 patients before the age of 50 years, with a diagnosis of premature AMI, and 100 age-matched controls with normal coronary angiograms. Total genomic DNA was extracted from 3ml of blood, forward and reverse primers were designed by Gene.Ex software and Primer3 databases. Genotyping of polymorphisms were performed by the polymerase chain reaction and restriction fragment length polymorphism (PCR-RFLP). Statistical analysis was carried out by SPSS 18.0 (Chicago). **Results:** There was no association between genotypes and allele frequencies of rs320 and rs285 polymorphisms and premature acute myocardial infarction ($P > 0.05$). Furthermore, the triglyceride levels were found to be elevated in individuals with HindIII (+/+) and PvuII (+/+) genotypes in comparison with HindIII (-/-) and PvuII (-/-) genotypes ($P < 0.05$). **Conclusions:** Our findings indicated that rs320 and rs285 polymorphisms are associated with the premature AMI risk factors such as triglyceride levels.

Keywords: Acute Myocardial Infarction, LPL, Polymorphism, rs320, rs285



P64

Lipids and Psoriasis: Correlaion of methylenetetrahydrofolatereductase (rs1801133) polymorphism and Lipid Peroxidation

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Background: Psoriatic patients are at greater risk of oxidative stress and inflammation which is associated with abnormal plasma lipid metabolism. Objectives: This study is the first investigation to examine the association of MTHFR (rs1801133) C677T polymorphism, serum level of MDA, VAP-1, lipid-lipoprotein and apolipoproteins with the risk of psoriasis. Methods: This study consisted of 100 psoriatic patients and 100 gender- and age-matched unrelated healthy controls from west population of Iran. MTHFR-C677T (rs1801133) polymorphisms were detected by restriction fragment length polymorphism (PCR-RFLP), VAP-1 by ELISA, apolipoproteins by immunoprecipitation, lipid and apolipoproteins were measured enzymatically and MDA by HPLC. Results: We found that T allele of MTHFR-677 alleles significantly 1.76 times increased risk of psoriasis, respectively. The psoriasis patients with MTHFR-677-T (C/T + T/T) allele had significantly higher serum MDA, VAP-1 and apolipoproteins APOB concentrations and ratio of APOB/APOA1 than the control subjects. The MTHFR-677-T allele frequencies in psoriasis patients were significantly higher than that in control group (28.5% vs. 18.5%; P = 0.018). Conclusion: In the present study, we demonstrated that the psoriatic patients with MTHFR-677-T allele had higher serum levels of MDA, VAP-1, APOB and ratio of APOB/APOA1 and T allele of MTHFR-677 are significantly more common in psoriasis and increased risk of psoriasis by 1.76 fold. These data suggest that psoriasis patients carrying of TT genotypes and T allele of MTHFR-677 may be more susceptible to cardiovascular disease and myocardial infarction.

Keywords: Psoriasis, Lipid, MTHFR

P65

Measurement of Lead in The Normal and Cancerous Tissue And Blood of Patients with Lower Gastrointestinal Cancer Compared to Normal Blood T

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Intruduction: Cancer is the third leading cause of death in the developing countries. Gastrointestinal cancer caused by several factors that heavy metal elements can be of this disease. In this study, measuring lead in normal and cancerous tissue and cancerous blood of patients with lower gastrointestinal cancer compared to normal blood and tissue is evaluated. Materials and methods: In this assessment, 50 pateints with lower gastrointestinal cancer, that 25 pateints were male and 25 were female, compated and evaluated. Lead concentrations in tumor tissue and normal tissue of patients using the atomic absorption spectrometer (AAS) and statistical soft ware samples. Results: The results of TT-test show a singnificant difference (confidence level=95%, P<5%) between the concentration gastrointetinal cancer. Conclusion: Since the concentration of lead in the cancerous blood and tissue is more than in the normal tissue and blood, it can be assumed that the accumulation of this metalin the cancerous blood and tissue were higher and the rally may raise cancer risk.

Keywords: TT-Test, Heavy Metal



Laboratory and Hematology Research P66 – P79

P66

Evaluation of Polymerase Chain Reaction Assays for Routine Diagnosis Jak2v617f Mutation in Patients with Essential Thrombocythemia and Polycythemia Vera in the Clinical Laboratory

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Background: Molecular genetics assays for the detection of the JAK2V617F (c.1849G>T) within JAK2 exon 14 are part of the routine diagnostic workup for patients presenting with erythrocytosis, thrombocytosis or otherwise suspected to have a myeloproliferative neoplasm. Many different techniques have been designed for the quantification of JAK2V617F mutation, sometimes producing discrepant results. In this study we compared two methods to evaluate JAK2V617F mutation patients with essential thrombocythemia (ET) and polycythemia vera (PV). Methods: JAK2V617F quantification techniques were compared using 2 assays based on polymerase chain reaction including allele-specific polymerase chain reaction (AS-PCR) and amplification refractory mutation system (ARMS- PCR) in 45 patients with a known or suspected diagnosis of a myeloproliferative neoplasm. Results: The JAK2 V617F mutation was detected in 86.6% (26/30) of PV patients by ARMS-PCR and AS-PCR. But 46.6% (7.15) of ET patients were positive using ARMS- PCR and 53% (8.15) of them were positive by AS- PCR. Conclusions: simple and reliable assays for detection of JAK2 V617F mutations are needed, and we have found both assays described here to be very suitable for routine clinical laboratory testing.

Keywords: JAK2V617F Quantification, Allele-Specific PCR, ARMS-PCR



P67

Status of Anemia in Pregnant Women Referred to the Birjand Health Center Laboratories in 2015

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Background Anemia is one of the public health problems worldwide that has significant consequences for human health and Socio-economic development and its treatment is one of the factors reducing deaths of pregnant women and increasing individual work efficiency. The aim of this study was to determine status of anemia in pregnant women referred to the Birjand health center laboratories in 2015. Methods In this descriptive-analytic study, 450 pregnant women referred to the Birjand health center laboratories were studied using non-random simple sampling. Maternal anemia results were extracted using C.B.C test. Data analysis was performed using SPSS (version 18) and descriptive and analytical statistics. Results were interpreted at 0/05 significant level. Results the mean hemoglobin level of the subjects was 13.25 ± 1.22 mg/dl and the mean hematocrit level of the subjects was 40.01 ± 2.67 percent. 16 subjects (3.6 percent) had anemia. There was no significant relationship between maternal anemia and mother's age, resident location, Body Mass Index, spacing between pregnancies, occupation ($p > 0.05$). But there was significant relationship between maternal anemia and mother's history of anemia ($p < 0.05$). Conclusion According to results, Continuation of iron supplementation programs and education on diets recommended for the prevention of anemia in pregnant women.

Keywords: Anemia, Prevalence, Pregnant Women

P68

Provide Hematology Algorithms for Screening Beta Thalassemia and Iron Deficiency Anemia

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The high prevalence of beta thalassemia trait (BTT) in many countries (such as Iran) has made them to codify some screening planning. And by finding the heterozygote cases in the population they are advised not to marry with other heterozygote persons. So they try to prevent the outbreaks of beta thalassemia major cases. But because that there has not been any screening program for differentiation of BTT from other microcytic anemia, specially the iron deficiency (ID), diagnostic laboratory tests are used instead of screening tests. We reviewed the data of the erythrocyte indices in 100 patients with BTT and 100 patients having ID in Esfahan. Using integral and multiple regression methods, we edited a software which can predict the probability of each of these anemia with the data that exists in a CBC report. When we reexamined the software with the data we had from our patients in Esfahan, the sensitivity and specificity of our software was more than 90% in all of the patients' groups. This software is an easily accessible, affordable tool with no any waste of time which can be used in different countries as a screening instrument for diagnosis and differentiation of BTT from ID.

Keywords: Beta Thalassemia Trait, Iron Deficiency, Screening, Softwar



P69

Study of TSH Levels in the Population with (A, B, AB, O) Blood Group Referred to Shafa Lab of Shushtar

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Background: The ABO system remains the most important of all blood groups in transfusion practice. In 1900 Karl Landsteiner described human blood group ABO. In addition to red cells, ABO antigens can be found on other tissue cells and in the secretions. The substances are glycoproteins and glycolipids. The aim of this study was to evaluate TSH levels in the population with (A, B, O) blood group referred to Shafa Lab of Shushtar. **Method:** In the present study, the sera of all population with blood group (A, B, AB, and O) who referred to Shafa Lab of Shushtar, were collected. The sera were tested (by Elisa) for detection of TSH levels. The statistical tests were used. **Results:** The TSH range of patients were in female O blood group (5.3- \geq 30), male O blood group (6.2-11.9), female A blood group (5.2- \geq 30), male A blood group (5.6- \geq 30), female B blood group (5.3- \geq 30), male B blood group (8.7- \geq 30), female AB blood group (6.1-8.4), male AB blood group (5.2-8.9). The mean & SD TSH in female blood group O (17.65 \pm 8.74), male O blood group (9.04 \pm 2.02), female A (17.55 \pm 8.8), male A (17.78 \pm 8.64), female B (17.60 \pm 8.76), male B (19.34 \pm 7.54), female AB blood group (7.21 \pm 0.80), male AB blood group (7.02 \pm 1.30) and aged 1-73 years. **Conclusion:** The results of present study showed the mean TSH levels in male people with blood group B, was higher than other groups.

Keywords: Blood Group, TSH, Mean

P70

The Survey of Prevalence of β Thalassemia Gene in Marriage, Applicants Refer to Bolandian Health Center in Qazvin During 1393

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The success rate in the prevention of β thalassemia major in Qazvin central laboratory during 01/01/1393 to 30/12/1393 couples references. **Background and Aim:** Thalassemia is a genetic disease that occurs with autosomal pattern. In couples whose MCH is under 27, MCV is less than 80, and hemoglobin A2 is higher than 3 are considered to be carriers for β thalassemia that prevented to get married. The aim of this study is to find the amount of β thalassemia carrier in marriage applicant in Qazvin. From 5720 patients 222 couples MCH and MCV were less than the area and HbA2 68 people of them were higher than 3%. They do electrophoresis test, finally one couple was carried the β thalassemia gene. According to statistics for preventing of laboratories has critical role. These tests were done by hemoglobin analyser cell counter KX_21N sysmex and HbA2 were done by Biosystem kit.

Keywords: Thalassemia, HbA2-Autosomal, Major



P71

Spurious Leukocytosis; a Case Report

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Background: The results provided by hematology analyzers are often rapid and precise. Spurious results, however, in various parameters of CBC has been observed in some situations. There is some pre-analytic factors, Causing erroneous results on the automated CBC test. Here we describe a case with cold agglutinin as a rare cause of spurious leukocytosis. **Method and Material:** A 59 year-old woman with anemia, dyspnea, fatigue, listlessness and weakness was referred. Her routine tests revealed leukocytosis, anemia and irregular results related to hemoglobin, hematocrit and erythrocytic parameters. There was some abnormal findings such as lack of differential WBC count, unconventional leukocytic histogram and various flags on her CBC test. The patient's symptoms were attributed to cold agglutinin and sample was analyzed again after incubation at 37°C for 30min. Complementary tests including immunohematology, Biochemistry, Serology and studying of blood film were performed. **Results:** The Lack of virtual RBC Count and erythrocytic parameters is often known as the first Sign of cold agglutinin. With respect to correction of CBC count using warmed sample and return of WBC count to normal range and results of additional tests, cold agglutinin disease was established. **Discussion:** Cold agglutinins may cause various interferences in blood cell and routine blood banking tests. Spurious leukocytosis is one of the probable cold agglutinin interference, reported rarely. **Conclusion:** Knowledge of interferences produced by cold agglutinin and how to eliminate them can be useful in presenting correct responses to clinician, preventing misdiagnosis and unsuitable treatments.

Keywords: CBC, Spurious Leukocytosis, Cold Agglutinin, Interference

P72

New Pathogenicity, Diagnosis and Treatment of Paroxysmal Nocturnal Hemoglobinuria

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Introduction: Paroxysmal nocturnal hemoglobinuria (PNH) is a rare bone marrow failure disorder that manifests with hemolytic anemia, thrombosis, and peripheral blood cytopenias. The absence of two glycosylphosphatidylinositol (GPI)-anchored proteins, CD55 and CD59, leads to uncontrolled complement activation that accounts for hemolysis and other PNH manifestations. The absence of two GPI anchored proteins, CD55 and CD59, leads to uncontrolled complement activation that accounts for hemolysis and other PNH manifestations. PNH can be either primary or in another primary disorder of the bone marrow, such as myelodysplastic syndrome. Diagnosis requires confirmation of the absence or reduction of GPI anchor proteins. Due to the clinical importance of detecting and differentiating it from other disorders such as aplastic anemia and myelodysplastic syndrome, in this most recent study findings about the prevalence, classification, pathophysiology, genetics, diagnosis and new treatment of PNH. **Method and material:** To find articles from the English language, by searching electronic databases PubMed and Google Scholar InterScience and studied all the available literature. **Result and conclusion:** Improved knowledge of the molecular and cellular underpinnings of PNH over the last 2 decades has resulted in greater understanding of the biology and natural history of PNH and it is based on the diagnosis of PNH. In the coming years, novel inhibitors of the alternative pathway of complement and complement inhibitors with extended half-lives are likely to further improve quality of life for PNH patients.

Keywords: PNH, Bone Marrow Disorder, Treatment



P73

Minimal Residual Disease Assessment in AML Patients

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Despite all attempts to treat AML patients, there are many cases of relapse after treatment. Therefore we need to predict relapse. MRD defined as the presence of leukemic cells after treatment. MRD monitoring in different stages of treatment has a significant effect on guide to treatment and improvement of outcomes in AML patient. Therefore MRD assessment is considered from different aspects, including: methods, standardizing, determination of prognostic levels and timing. Presence of leukemic cells among normal can be detected based on chromosomal changes, mutations, rearrangements, gene expression, cell growth, and immunophenotypic abnormalities. In this review we summarize some informations about MRD detection in AML patients. we searched Scientific Information Database for English sources. Two sensitive methods, multiparameter flow cytometry (MFC) and real-time quantitative PCR (RQ-PCR), are used to monitoring MRD in AML. Several targets are available for PCR including, mutations, translocations, gene overexpression etc. their application being dependent on the type of disease. In flow cytometry, leukemia-associated immunophenotypes (LAIPs) are used. RQ-PCR is more sensitive than MFC. In contrast, MFC has an applicability in most patients with AML. Studies showed that not all abnormalities are equally suited. Molecular relapse has been demonstrated to precede hematologic relapse by some weeks. MRD monitoring is useful when extra treatments are available and also is efficient to estimate an individual leukemia's susceptibility to chemotherapy. Many studies have shown that MRD cell frequency after different cycles of therapy offers a highly independent prognostic factor, both in adult and childhood AML.

Keywords: MRD, AML, Flowcytometry, Rq-PCR

P74

Molecular Diagnosis for Screening and Early Diagnosis of Acute Myeloid Leukemia (AML): a Systematic Review

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Background: Acute Myeloid Leukemia (AML) is the most common cancer in adults. AML is mostly diagnosed by immunoflow cytometry during the progressive stage. Finding other diagnostic methods in the early stages of the disease can be very helpful and make the treatment more effective and practical. The current research is done to review genetic mutation, detectable gene product and epigenetic factors in this type of cancer. Method: The research was carried out in SID, Ebsco, Magiran and PubMed using the keywords Acute Myeloid Leukemia, receptor Tyrosine Kinase gene, epigenetic, methylation. We looked in to the researchers' scientific work in the past 10 years (2005-2015) and 27 of them were chosen to be analyzed because of having the research criteria. The data was categorized into the 3 sections including: genetic mutation, biomarkers and epigenetic disorders. Results: Considering the results of the research, FLT3 mutation is the most common in AML. The mutation includes FLT3-ITD somatic mutation and D835 point mutation. Epigenetic disorders include promoter methylation of tumor gene suppressor such as Secreted Frizzled Related Protein (SFRP) or P15 gene expression in the early stages of AML. Conclusion: Early diagnosis of AML would be of tremendous help to AML patients and they can be included in diagnostic programs considering the significant progressive and purposeful treatment programs. Epigenetic variations as early disorders can even be included in preventive and purposeful treatment programs. We hope for better diagnosis and treatment through identifying these variations by AML researchers. More analysis in these areas of study seems necessary considering this research.

Keywords: AML, Molecular Diagnosis, Mutation, Biomarker, Epigenetic

P75

Survey of Coagulation Tests (Ptt and PTT) Among Inpatients at the Internal Medicine Ward and Intensive Care Units (ICU) of Imamreza Hospital in Tabriz

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Introduction: Coagulation tests are done during admission or hospitalization of patients routinely. These tests are performed to diagnose important and unexpected problems. The PT and APTT tests are often performed to evaluate the performance of haemostatic situation of patients. The purpose of this study is the survey of importance of these tests in different wards of the hospital. **Method:** This study was done according to the 665 recording files. By extraction of the PT and APTT test results, the data is classified as the following three categories and then the statistical analysis was performed. A) Normal limits B) abnormal range C) critical area **Results:** The 277 files were related to the pulmonary intensive care units (ICU) and the 288 files were belonging to of the lung diseases patients. The results of tests within the normal limits were seen in (5%), (34.3%) at the intensive care units (ICU) and of the lung diseases ward respectively. The results with abnormal range at (ICU) was seen in (50%) and among of the lung diseases patients was observed in (30%). The critical results were seen among 35% of the intensive care unit patients and 35% in the lung diseases patients. **Conclusion:** This study shows that coagulation tests at the pulmonary wards of the hospital for identifying the causing and severity of diseases are necessary. Due to the high percentage of abnormal results especially at ICU patients doing of these tests are very important. Because of using various drugs in the ICU ward, PT and APTT tests should be performed routinely for follow up of the patients' situation and these tests could not be removed from routine testing.

Keywords: Coagulation Tests, Inpatient, Internal, Intensive Care Units (ICU)

P76

Effect of Microvesicles Derived from K562 Cells on Proliferation and Apoptosis of Mesenchymal Stem Cells

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Background: Microvesicles are small membrane-bound particles released by different cells including healthy and tumor types. Microvesicles can transfer their contents, proteins and RNA, to target cells and thereby transform them. This may induce apoptosis or survival depending on cell origin and the target cell. **Methods:** Microvesicles were isolated from K562 cell line by ultra-centrifugation and were added to mesenchymal stem cells. Also, mesenchymal stem cells without microvesicles were cultured as control group. After 7 days, cell count, cell viability by MTT assay and qPCR for BAX gene expression were performed. Results showed lower cell number, lower cell viability rate and higher Bax gene expression in leukemia group in comparison with control groups. **In conclusion,** this study showed apoptotic effect of K562 cell line derived microvesicles on bone marrow mesenchymal stem cells. **Conclusion:** Microvesicle's ability to change cells phenotype is one of the most controversial issues today. This is crucial as healthy and leukemic cells are in connection in bone marrow microenvironment. Microvesicles transport in microenvironment, by all normal and leukemic cells. So, microvesicles derived from leukemic cells may be possible to change healthy cells. It could be a better understanding of the behavior of leukemic cells in the bone marrow and lead to disease progression path understanding leukemic cells behavior and their effects on healthy cells is important to realize disease progression.

Keywords: Microvesicle, Mesenchymal Stem Cell, BAX Gene Expression



P77

Distribution of ABO-Rh Blood Group among Patients Admitted to Sayedolshohadaei Hospital in Sanandaj 1392-1394

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Introduction Distribution of ABO and Rh blood groups is different in different regions, races and ethnicities. This study aimed to investigate the prevalence of blood groups ABO and Rh patients referred to the Sayedolshohadaei hospital in Sanandaj in the years 1392-1394. **Materials and methods** this descriptive study was performed on 3136 patients Sayedolshohadaei Hospital in Sanandaj during 1394-1392. Blood Group referred to two methods, cell method (Cell type) and serum method (Back type) for ABO blood group and cell method for Rh, blood group was determined according to standard procedure. Data was analyzed by statistical software spss. **Results** The results showed that the frequency of blood groups A, B, O and AB referred to in this population was 32.4%, 17/6%, 2/41% and 8/8% respectively, the highest and lowest blood group in Rh positive was O and AB respectively, and in Rh negative group was O and AB respectively. The frequency of Rh-positive and Rh negative 94.2% and 5.8% respectively was reported. **Conclusion** This study showed that the distribution of blood groups in patients during the years 1392-1394, respectively, O, A, B and AB may indicate that the outcome of its distribution in the city of Sanandaj.

Keywords: Frequency, Blood Group, Distribution

P78

Thymoquinone Induce Apoptosis in Leukemic Lymphoblastic Cell Line (Jurkat) in Time and Dose-Dependent Manner

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Background and Objectives: T-cell acute lymphoblastic leukemia (T-ALL) is described by the strange expansion of pre-T cell clones obstructed at a juvenile stage. Apoptosis is an ordinary physiological procedure which happens amid the upkeep of tissue hemostasis. It can be actuated by an assortment of medications, for example, cytotoxic chemotherapy. Thymoquinone (TQ), got from the therapeutic flavor *Nigella sativa*, has been analyzed concerning the restraint of multiplication and affectation of apoptosis in a several cancerous. **Materials and Methods:** Jurkat cells were seeded in 96-well plates at a density of 10^5 per well 24 hours before experiment and treated with the following: vehicle control (DMSO), TQ at 10-100 μ M, untreated cell as control, and cell-free well as blank. Cell viability was measured by MTS assay after 24, 48 and 72 hours. Amount of apoptotic cell was examined by apoptosis kit (flow cytometry) after 24, 48 and 72 hours incubation with TQ. **Results:** Findings show that incubation with TQ for 24, 48 and 72 hours exhibited an IC50 (inhibition concentration) about 20, 16, 14 μ M, respectively. Also amount of apoptotic cell after 24, 48 and 72 hours incubation at concentration of 10 μ M of TQ, were 42, 51, 61 respectively. **Conclusions:** The study showed that TQ is successful proliferation inhibition and induction of apoptosis in Jurkat lymphoblastic cell line in a time and dosage dependent manner. Consequently, the investigation of apoptosis systems could be a stage toward advancement for remedial objectives, and could be considered in future studies.

Keywords: Acute Lymphoblastic Leukemia, Jurkat, Thymoquinone, Apoptosis



P79

Investigation the Redundancy of Vitamin B12 Deficiency in Different Ages and Sexes in Mashhad City in 2014-2015

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Introduction: vitamin B12 is one of the water soluble Vitamins that is needed for cell's natural operation and growth. Deficiency of this vitamin is involved in different conditions such as Megaloblastic anemia, Pernicious anemia, neural defects, coroner defects and etc. In this article, we investigate the vitamin B12 deficiency redundancy in Mashhad city in 2014-2015. **Materials and methods:** this descriptive article, investigated 1170 patients referred to Mashhad medical centers. These patients, separated to different age groups. After the measuring serum vitamin B12 by Siemens (RIA), the data's was analyzed by SPSS12. After measuring B12, 98 patients (60.females / 38.males) were deficient for B12. First place of B12 deficiency was for patients between 40-60 (14.28). The most deficient patients were females between 20-40 years old with average 31.54 ± 7.11 and the deficient males were between 30-40 years old with average 36.16 ± 2.89 . **Conclusion:** as the result shown, the B12 deficiency is so prevalent in women, actually in gestation ages of their life. It is suggested that, they have to use Vitamin B12 in their daily diet to prevent from anemia and other conditions associated with B12 deficiency. So it is necessary to introduce vitamin B12 and its advantages to families.

Keywords: Vitamin B12, Anemia, Mashhad

Laboratory and Immunology/Serology Research P80 – P95

P80

Immunogenicity Hepatitis B Vaccine in Patients Admitted in the Referrer of Yahyanejad Hospital Laboratory in Babol, Iran

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Background and aim: Hepatitis vaccination, is one of the most effective measures to control the disease and reduce the incidence it. Due to the different vaccines provide immunity against the virus factor and differences, different studies on different groups in different locations is essential. Hence, present study aimed to determine the was to Immunogenicity hepatitis B vaccine in patients admitted in the referrer of Yahyanejad hospital laboratory in Babol. Methods: study, which is descriptive-analytical one, was carried out in six-months using serological tests during this period in 1393. The study population of 238 samples were gathered referrer of Yahyanejad hospital laboratory. Hepatitis B surface antigen, Antibodies against hepatitis B surface antigen ELISA method using the kit Pyshtaztb and Pastor. The collected data were analyzed using descriptive-analytical SPSS and K2 test. Results: Among the study, which is 155 (65.1%) were surveyed, 83 (34.9%) were ambulatory patients, 97 patients. (40.8%) men and 141 (59.2%) were female. Frequency surface antigen Hepatitis B, to the 15 (6.3%) were positive and 223 patients (93.7%) were negative. the Antibodies against hepatitis B surface IgG antigen, 69 (29%) hepatitis B without title protection patients (Anti HBS < 10MIu/mL), 127 (53.4%) title protection full patients (AntiHBS<20MIu/mL) and 42 (17.6%) relative protective titers respectively (10mIu/mL). Conclusion: People vaccinated against the hepatitis B virus have a good immune status, with regard to the safety of people is reduced over time, training, control and ultimately inject the appropriate dose vaccination course people recommended.

Keywords: Hepatitis B Surface Antigen (Hbs Ag), Antibodies Against Hepatitis B Surface Antigen (Anti Hbs), Immunization, Vaccination

P81

Detection of Brucellosis in Haemodialysis Patients in Shahre Rey, Tehran

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Introduction: Brucellosis is an important zoonotic disease. more than 500,000 human cases are reported in world wide each year. four main brucella species are causing disease in human but most human infections are caused by *Brucella melitensis*. Iran is an endemic country. The symptoms of brucellosis are various. one of the most frequent complication in brucellosis is musculoskeletal but, musculoskeletal involvement is in haemodialysis patients, too. in this study we considered 2 groups, first group undergo dialysis and second group with no chronic renal failure disease that have joint bone pain and musculoskeletal pain. 100 people considered in each groups. **Methodology:** In this study performed serological tests like as rose bengal, wright, 2ME and coomb's wright. **Result:** In haemodialysis' patients found one patient who had positive rose Bengal plate test and the titer of wright test were and 2ME and coomb's wright were negative. And another group did not find any positive serological test. therefore both groups did not find any significant positive serological test that confirming had antibody against brucella. we did not find any positive serological tests' result in our samples but we should not ignore brucellosis with involvement kidneys. medicine should pay more attention to symptoms in renal failure patient because malta fever is a thousand-face disease. performing this study in another cities using serological test instead of blood culture because it is simple, cheap and not time-consuming is recommended. public wide education for controlling and preventing of brucellosis is necessary considering prevalence of brucellosis in spring and summer.

Keywords: Brucellosis, Malta Fever, Haemodialysis, Wright Test

P82

The Comparison of Four Methods for the Isolation of Human Peripheral Blood Neutrophils

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Background and Objectives: Peripheral blood is the main source of neutrophils for immunologic and biological investigations. Several different methods are currently used by numerous laboratories for the isolation of human neutrophils. So, selection of isolation method of these cells are the most important issue. In this study, four methods of isolation and purification of human peripheral blood neutrophils are compared. **Methods:** In this study human peripheral blood was obtained from healthy donors. Whole blood was collected in a vacutainer consisting of heparin as anti-coagulant. Four laboratory protocols for purification of peripheral blood neutrophils were carried out as stated below: (1) Purification by Dextran T 500 sedimentation. (2) Purification procedures utilizing discontinuous density gradients using Ficoll Highpau coupled with dextran sedimentation. (3) Isolation by Ficoll Highpau/Dextran T 500 Sedimentation. (4) Separation using Ficoll Highpau Technique. A microscopic inspection was made on cells prepared by each procedure in order to determine the degree of erythrocyte contamination. Neutrophil purity for each method was assessed by staining the cells with Gimsa, counting the leukocytes and expressing neutrophil purity as the percent of neutrophils to total leukocytes. The percent yield of neutrophils for each experiment was determined. **Results and discussion:** Ficoll/Dextran Sedimentation technique provided the highest number of isolated neutrophils/mL of blood (86%) when compared with Dextran/Ficoll method (41%), Ficoll (66%) and Dextran sedimentation (55%). **Conclusion:** The Ficoll/Dextran Sedimentation technique used for neutrophil purification is the best method with and highest purity and yield compared with methods used in this study.

Keywords: Neutrophil Isolation, Purification, Sedimentation, Dextran, Ficoll



P83

Induction of Apoptosis in Leukemia Cell Lines by CD-14 Radio Labeled Antibodies (Mabs)

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Introduction: chemotherapy is the standard treatment method for Leukemia patients, although it has not been fully effective. Leukemia becomes progressively more chemo resistant while remaining responsive to external beam radiation therapy. Radio immunotherapy (RIT) is a logical strategy for the treatment of leukemia because this disease is multifocal and radiosensitive. **Methods:** 3-(4,5-dimethyl thiazol-2yl)-2,5-diphenyl tetrazolium bromide (MTT) colorimetric assay used for measuring the cytotoxicity cell of HL-60, U937 cell lines and PBMN cells in 0.5, 2.5, 5, 10 µg/ 100 µl concentrations of anti-CD14 mAb at 12, 24 and 36 hours. Also, ELISA was used to measure apoptosis in different concentrations within 24 hours. Flowcytometry was used to evaluate apoptosis in different concentrations within 24 hours and morphologic changes were evaluated. **Our finding** showed that the 2 µg/ 100 µl mAbs labeled with 90Y and 5 µg/ 100 µl mAbs labeled with 131I changed morphology of cancer cell lines into apoptotic cells in 24 hours but after 36 hours proliferation and viability decreased significantly in 0.5 µg/ 100 µl. mAbs labeled with 90Y had higher cytotoxicity than 131I in HL-60 and U937 cell lines and there was no significant effect on PBMN viability and characteristics. This mAb induced mostly apoptosis but little necrosis in cell death. **Conclusion:** By increasing concentration of mAb and treatment time, cell viability reduced significantly. Also, mAbs labeled with 90Y and 131I induce apoptosis in HL-60 and U937 cell lines. Generally these leukemia selective effects depends on concentration mAbs labeled with 90Y and 131I (P<0.01) with no effect in normal PBMN.

Keywords: mAbs Labeled with 90Y and 131I, Cytotoxic Activity, Apoptosis, Leukemia Cell Lines

P84

Frequency of Abnormal Prostate-Specific Antigen (PSA) in Mashhad; Experiences of a Center

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Prostate specific antigen (PSA), a glycoprotein in the cytoplasm of epithelial cells, naturally is found on the prostate cells. PSA is present in small quantities in the serum of men with healthy prostates, but is often elevated in the presence of prostate cancer or other prostate disorders. PSA test is usually done at the age of 40 and repeat at the age of 45 to 50 and then every 2 years. It can be in various forms. The normal form of this marker named PSA total. A part of PSA in the blood is free PSA. The most part of PSA is connected to plasma proteins. **Methods and patients:** We collected laboratory data on 350 patients who admitted to our laboratory during last 9 month (March to November) of 2015 in Mashhad. The PSA test was done by chemiluminescence method by Siemens (Deutschland). The normal range is up to 4.2 ng/dl. **Results:** Among 350 patients who studied the mean PSA level was 15.05 ng/ml. There were 100 (28.5%) abnormal results which among them 5.7% seemed to have cancer and the rest of them seem to have inflammation in prostate. **Conclusion:** Our study showed that frequency of abnormal PSA test is noticeable among patients who referred to us. Periodical screening males above 40 years old is recommended twice a year.

Keywords: Prostate Specific Antigen, PSA, Cancer, Inflammation, Chemiluminescence

P85

Sexual Assault, Laboratory Diagnosis

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Sexual assault is an important issue in human societies. Physical injuries and psychiatric disorders followed by rape or sexual assault result in many problems for the victim. Detecting semen residues by laboratory methods in victim body or in crime scene play the key role in judicial procedures. In this lecture, first we will talk about the definition of sexual assault, psychedelic agents used by rapist (rape drugs), and finally we will discuss about different laboratory methods such as blood and saliva stain detection, examination of vagina and anal swabs, determination of semen ABO group, ACP, P30 and DNA typing for identification of the perpetrator.

Keywords: Sexual Assault, Semen, Laboratory, Psychedelic agents

P86

Comparison of Immunofluorescence and Chemiluminescence Methods for ANA Detection

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Introduction: The large number and variety of autoantibodies can be seen against nuclear and cytoplasm antigens in rheumatic diseases. The selective and sensitive method for detection of these autoantibodies is immunofluorescent technique. In this technique lower titration of 1/100 considered to be negative and higher titers are positive. The second method for detection of autoantibodies is chemiluminescence, the results of which are reported as positive or negative. The aim of this study was to compare the two methods. **Methods and materials** In this study, sera from 87 patients referred to Razi Pathobiology laboratory for ANA testing was used. ANA-IFA of patient samples using the kit Euroimmun in according to manufacturer's protocol. Criteria for patients selection was ANA-IFA titer higher than 1/100. For these patients ANA-CLIA test was done using kit DiaSorin with LIAISON automated analyzer. Results 10 patients were male and 77 were female of the 87 samples. In ANA-IFA method, 7/28 % of patient has had titre 1/100, 2/17% titre 1/320, 4/26% titre 1/1000, 4/18% titre 1/1000, 3.3% titre 1/10000 and 6% were negative. In ANA-CLIA method 33/3% and of patients have been positive and the others were negative. **Discussion** In this study the data was shown that there are false positive results in chemiluminescence method in comparison to immunofluorescent method. So it is better FANA test is requested by physicians.

Keywords: ANA, Chemiluminescence, Immunofluorescent, Rheumatic Diseases



P87

Self-Renewal and Proliferation Potential of Human Amniotic Fluid Stem Cells

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Background: Amniotic fluid as available and unique source of mesenchymal stem cells gets the best candidate for stem cell research. Also AFSCs with special self-renewal and potency is located between embryonic and adult stem cells, without ethical issue. Therefore in this study we assessed proliferation features of amniotic fluid stem cells (AFSCs) in cell culture. **Methods and Materials:** 5ml of amniotic fluid was obtained from 15-20w pregnant women after reading and signing the informed consent form. Efficient isolation and characterization of AFSCs was done. Morphology by inverted microscope, doubling time (DT) and proliferation rate with cell counting by hemocytometer was analyzed at different passages ranging from primary culture to passage 10. **Results:** At first week of proliferation, AFSCs had round shapes. After the first week they became elongated and turned into fibroblast like shapes. They had a multilayers growth pattern and this proliferation pattern was conserved at early passages (3-6). Doubling time from early to late passage became high, at passage 3 was 36h and passage 10 more than 60h. Proliferation rate at early passage was more than late passage. **Conclusion:** According to this study AFSCs are more active in early passages. We confirmed the self-renewal future by indicating AFSCs multilayers growth pattern and high proliferation rate at early passages. This finding recommends AFSCs in research projects should be used between 3-6 passages for useful experiments. We suggest further investigation to find the unique properties of these cells to get the best results in cellular and molecular research.

Keywords: Amniotic Fluid Stem Cells (AFSCs), Self-Renewal, Ethical Issue, Doubling Time (DT)

P88

Differential Pattern of Cytokine Production in Uveitis Disease

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Background: The studies revealed that the immune responses of uveitis patients can be affected by alteration of immune system factors; however, the main influenced immune genes are yet to be fully understood. Therefore, the main aim of this study was to identify serum levels of drastic inflammatory cytokines including IL-17A and IFN- γ amongst patients suffering from uveitis in comparison to healthy controls. **Material and methods:** This study was designed cross-sectional study. Peripheral blood specimens were collected from 38 Iranian uveitis patients along with 43 healthy students as control subjects. The serum levels of IL-17A and IFN- γ were assessed using enzyme-linked immunosorbent assay (ELISA) technique. Results were analyzed by SPSS software package version 18. **Results:** The results showed that serum levels of IL-17A and IFN- γ were significantly increased in uveitis patients in comparison to healthy controls. **Conclusions:** According to the results of the present study, the increased IL-17 levels in the uveitis patients may be responsible for the increase of inflammation in patients and disease progression and increase INF- γ can critical regulatory role in suppression of IL-17A and immunity response adjustment.

Keywords: Uveitis, il-17a, ifn-y, Elisa, Cross-Sectional



P89

Detection of Human Growth Hormone Using Sandwich ELISA Technique

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Introduction: One of the best, reliable and accurate techniques for the measurement and detection of human growth hormone (hGH) is the ELISA method. For this purpose, antibody production against hGH is very important and necessary. In this work, polyclonal anti-hGH, produced and purified for hGH detection using a sandwich ELISA technique. **Material and methods:** Rabbit polyclonal anti-hGH was produced following 12 weeks of immunization by hGH injection. The purified antibody was achieved using protein G affinity chromatography and its purity and affinity confirmed by SDS-PAGE and indirect ELISA, respectively. Then, purified antibody carried out for detection of hGH using sandwich ELISA technique. **Results and conclusion:** The data was shown; rabbit polyclonal anti-hGH was produced and purified successfully. The function of this antibody confirmed by western blot and ELISA methods. On the other hand, sensitivity of this method for the trace amount of hGH was determined.

Keywords: Human Growth Hormone, Polyclonal Antibody, Purification, ELISA

P90

Study of Toxoplasma Prevalence in Thalassemia Patients with Allo-Antibody

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Introduction Blood transfusion is intended to be a beneficial medical intervention, but various adverse effects must be considered. Transmission of infectious diseases and allergic reactions, including chills, fever and hives are the common adverse reactions. Thalassemia is one of the most common human genetic diseases. Thalassemia genes commonly present in all parts of the world, especially in countries located on the thalassemia-belt, such as Iran. *Toxoplasma gondii* (T. gondii) is an opportunistic parasitic infection in immune compromised hosts and estimates indicate that up to one third of the world's human population are infected. **Material & Methods:** In this study, 50 thalassemia patients who were frequently receiving blood from the specific serological aspect were selected. Once antibody screening was conducted and positive samples obtained, from the antibody screening test, an additional Panel Test was performed. Then the samples of alloantibody-positive patients were evaluated for anti-*Toxoplasma* IgG. **Results:** Pertinent to our findings, 60% of the examined thalassemia patients were positive and 40% were negative, in terms of antibody screening. In 30 patients the type of antibody was specified. Among 30 cases having alloantibody, only 6 patients were positive for toxoplasmosis. Type of the antibodies is including: D,C (1 patient) - Kell (7 patient) - S (1 patient) - E,c,kell (4 patient) - CDE, kell (2 patient) - Kell,E (4 patient) - Kpa, kell (2 patient) - E (2 patient) - Jkb, E (2 patient) - Cw, kell (1 patient).

Keywords: Thalassemia, Allo-antibody, *Toxoplasma*



P91

Study of Prevalence of Enteroviral Infection in Type I Diabetic Patients in Chaharmahal and Bakhtiari and Esfahan Provinces and Comparison with Healthy Individuals

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Background and Objectives: Type 1 diabetes is a multifactorial disease with unknown triggering events that combination of genetic and environmental factors. Viruses, Enteroviruses in particular, are major environmental candidates in the pathogenesis of type 1 diabetes. In order to clarify the relationship between enteroviruses and type 1 diabetes mellitus in Iranian population we investigated Enteroviral RNA in serum from children with type 1 diabetes mellitus. **Materials and Methods:** To detection Enteroviral RNA in serum in type 1 diabetes mellitus patients, we used Nested-PCR and direct sequencing PCR product. The Nested-PCR was done by using the primers for the region, which is the consensus region within all enteroviruses. The serum samples were kept at -80 °C until the use for Nested-PCR for the detection of enteroviruses. As controls we carried on the same assay in 35 serum samples obtained from healthy people age-sex matched to patients. **Results:** Nested-PCR for enterovirus was positive in 27 (77.1%) from 35 samples while only 4 healthy control (11.4%) was positive and there is a significant relationship ($P < 0.05$). The sequences of the positives Nested-PCR product, also, were similar to Enteroviruse family, specially coxsackie B viruses. **Conclusions:** The study indicated some correlation with type 1 diabetes mellitus and enterovirus in Iran and it was founded enterovirus infection rate in patients with type 1 diabetes is similar to European countries. Additional studies on enterovirus viral load in type 1 diabetes, correlation with viral load and autoantibodies, and also virus effect on CTLs in diabetic patients can be vulnerable.

Keywords: Type 1 Diabetes Mellitus, Enterovirus, Nested-PCR

P92

The Detection of Quantitative Serum P53 Protein in Esophageal Cancer

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Introduction: Esophageal cancer (Ec) is one of the six most common malignancies in the world. p53 protein, which accumulates intracellularly in over half of all human tumors, has been reported to be variably present in the sera of patients with various malignancies. In this study, it was aimed to detect p53 protein in the sera of esophageal Cancer patients, and to verify its value as a marker of p53 alterations in esophageal Cancer. **Materials and Methods:** during this case control study, 44 patients with esophageal Cancer and 44 normal subjects were selected. Serum samples were collected. A quantitative ELISA technique was used to detect serum p53 protein in all samples. finally data were compared with t test between two groups. SPSS v20 was used for data analysis **Results:** the mean serum p53 protein level in the patient group was found to be 33.36 ± 3.89 Pg/ml, whereas it was 40.13 ± 7.18 in healthy controls. although serum level of p53 was decreased in patients compared to the control group, this difference was not statistically significant **Conclusion:** In conclusion; prognostic value of detectable serum p53 protein levels could not be define, because of increased serum level of p53 protein was not observed in patients group. The use of quantitative serum p53 protein analysis with ELISA is of very limited value as a marker in evaluating p53 changes in esophageal cancer patients, despite the fact that is an easy technique to perform.

Keywords: Esophageal Cancer, Protein p53

P93

The Evaluation of Sensitivity and Specificity of ESR Based on CRP in Diagnosis of Infection

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Introduction: CRP is being used as the first and the most accessible parameter in diagnosis of infection. Besides of CRP, ESR can be used as a diagnostic tool too. In this study, the sensitivity and specificity of ESR based on CRP in diagnosis of infection were evaluated. **Materials and methods:** A cross-sectional study was performed on 500 patients admitted to the hospital Syyed Al shohdaie of Sanandaj. ESR and CRP levels were measured in those patients. Based on formulae, sensitivity, specificity, PPV (positive predictive value) and NPV (negative predictive value) were calculated. **Results:** Of 500 patients admitted to hospital, 200 (40%) were women and 300 (60%) were men. CRP values between 1+ to 4+ were considered to be positive and an indicator of infection and the ESR values higher than 20 in women and 15 in men was considered as an indicator of infection. The sensitivity and specificity of ESR were 53% and 40% respectively. Also PPV and NPV values were 57% and 36%, respectively. **Conclusion:** In conclusion, due to the sensitivity and specificity values obtained for ESR, it may shows that this test alone can not be used as a factor in diagnosis of infection.

Keywords: CRP, ESR, Infection, PPV, NPV

P94

The Relationship between Helicobacter Pylori Infection and Iron Deposits in the Patients Referred to Private Laboratories in Zanjan

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Background: Helicobacter pylori is a major cause of gastrointestinal diseases and gastric cancer. Many studies have noted a link between infection and iron deficiency anemia due to iron deposits that measure of iron deficiency anemia is one of the evaluation criteria. The aim of this study was to investigate the relationship between serum ferritin levels and H. pylori infection. **Methods:** In this cross-sectional descriptive-analytic study was conducted on 227 patients. For all the people of IgG antibodies against Helicobacter pylori testing electro-chemiluminescence and serum ferritin by chemiluminescence method was evaluated. Then the data were analyzed by the SPSS19 Software. **Results:** 227 patients (69.2%) of 157 patients infected with Helicobacter pylori (30.8%) of 70 healthy persons frequently regardless of gender mean serum ferritin with the above-mentioned equal ng / ml 54.3 and ng /ml56.6 that the groups were not significant. **Conclusion:** Given that in this study the relationship between serum ferritin, iron stores so check with H. pylori infection was observed in people infected with H. pylori, and recommended more extensive research is needed to confirm a prospective study of Helicobacter pylori stronger role in attracting or take iron.

Keywords: Helicobacter Pylori, Ferritin, Chemiluminescence, Zanjan



P95

Prevalence of Peripheral Blood Cells in Patients with Rheumatoid Arthritis among Patients Micran221 Participants to Hajar Hospital

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Introduction: As a disorder rheumatoid arthritis CD4 + T cells is mediated immunity. One of the subsets of CD4 + T, Th17 cells due to secretion of IL-17 pathogenic role is. miRNAs, a new group of RNA from noncoding single-stranded long look almost 20 to 25 nucleotides that play a central role in regulating processes cellular and developmental. In this research project to determine the relative expression of miR-221 as a candidate differentiation of Th17 cells in peripheral blood mononuclear cell subclass of patients with rheumatoid arthritis currency or restless. **Methods:** In this study, 25 patients and 7 patients as the control group. Isolation on ficole. And then total RNA was performed by Trazvl. And finally adding poly-A tail-specific cDNA synthesis was performed and then miroRNA-21 was evaluated by Real-time PCR. **Conclusion:** The expression of miR-21 in patients with RA compared to healthy subjects decreased expression. Th17 cell differentiation subclass number and in the peripheral blood of patients compared to control increases, the miroRNA-21 in patients with rheumatoid arthritis by affecting different pathways within the cell, including: FOXO1, SMAD2, PTEN, SMAD4, TSC, STAT1 triggers a change in the Th17 cell subclass.

Keywords: Rheumatoid Arthritis, Th17, IL-17, miRNAs

Laboratory and Microbiology Research P96 – P176

P96

An Evaluation of Antibiotic Resistance Pattern and Existence of Beta-Lactamase SHV Gene in ESBL-Producing Klebsiella Strains in the Clinical Samples of Yahyanejad Hospital in Babol, Iran

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Background and aim: Resistance to Extended Spectrum Beta-Lactamase is one of the most widespread enzymatic beta-lactamase in those bacteria which cause infections in hospitals. One major reason for resistance seems to be the arbitrary and/or excessive use of antibiotics. Hence, present study aimed to determine the antibiotic resistance patterns and bacterial strains and investigate the presence of Beta-lactamase SHV gene in those Klebsiella strains which produce ESBL. The clinical samples of the study were collected from Yahyanejad Hospital in Babol. Methods: This study, which is descriptive-analytical one, was carried out in six-months and 2075 clinical samples were gathered during this period in 1393.39 Klebsiella strains were identified among the hospitalized and out-patients of Yahyanejad Hospital using disk diffusion method and CLSI instructions. Antibiotic allergy tests were given, and all the strains were separated using synergic double discs to check the presence of ESBL. In the next phase of the study, the extracted DNA were examined in terms the presence of SHV by using specific primers and employing Real Time PCR method. The collected data were analyzed using Threshold Cycle (Ct), SPSS and K2 test. Results: Among the isolated Klebsiella stains 19 (48.72%) were resistant to cefotaxime, 14 (35.90%) to ceftazidime. Also, among the 39 isolated Klebsiella Pneumonia, there were 10 (25.64%) isolated positive ESBL, all the 10 (100%) isolated strains having SHV gene. Conclusion: Considering the high rate of resistance to third generation cephalosporin, it is imperative to perform accurate antibiogram and avoid irrational prescription of antibiotics in treating infections due to organisms which produce ESBL. In addition, it is of vital importance to screen the clinical samples in terms of resistance to ESBL, and to prepare guidelines for physicians to help realize the disease and treat the patients properly.

Keywords: Klebsiella Pneumonia, Antibiotic Resistance, Extended Spectrum Beta Lactamase (ESBL), Polymerase Chain Reaction Real Time



P97

Inhibitory Effect of Fluphenazine and Thioridazine on Toxoplasma Gondii Cystogenesis in Mice

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Background: Toxoplasma gondii is a brain chronic infection with worldwide spread. In recent years, associated has been found between chronic toxoplasma infection and some brain diseases and symptoms. It has been shown that some antipsychotic drugs are able to inhibit the proliferation of protozoan in cell culture. There is very limited information regarding the inhibitory effect of antipsychotics on toxoplasma invivo. **Objective:** We have investigated the inhibitory effect of fluphenazine and thioridazine on non-virulent strain Toxoplasma cystogenesis in mice. **Material and Method:** In this study, sixty male BALB/c mice were divided into 6 groups of 10. There were inoculated intraperitoneally with 0.5 ml of brain suspension containing approximately 20 tissue cysts of Toxoplasma Tehran strains for each mouse. Three days after inoculation, the mice were injected with drugs. In the vehicle group, sesame oil was administered to each mouse every other day. In the control group, mice only received toxoplasma without any drug. In other groups, fluphenazine 0.06 and 0.60 mg/kg and thioridazine 10 and 20 mg/kg were injected every other day. At the end of the second month after inoculation, the mice brains were divided into 3 parts including the right lobe, left lobe and the cerebellum with brainstem and medulla. All the brains of mice were provided with crush smear and counted cysts. **Conclusion:** This study showed that fluphenazine and thioridazine have no inhibitory effect on toxoplasma cystogenesis in mice.

Keywords: Toxoplasma Gondii, Fluphenazine, Thioridazine

P98

Comparison of a Nucleic Acid Sequence-Based Amplification (NASBA) and Real-Time Reverse Transcriptase PCR Methods for Detection of Toxoplasma Gondii in Rat Blood Samples

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The numbers of RNA amplification methods for detection of Toxoplasma spp. are increasing, however comparative studies on the performance of these different assays are lacking. The aim of this study was to compare two molecular assays for detection and quantification of Toxoplasma spp. in blood samples collected from experimentally infected rats. A set of specific primers and beacon probe were selected from the B1 rRNA gene of Toxoplasma. The assays using real-time detection proved to be both sensitive and specific. NASBA method for detection of Toxoplasma spp. have advantages regarding sensitivity and potential quantitative population dynamics of Toxoplasma gondii in comparison with RT-PCR method but it is not often routinely used at present. NASBA had a detection limit of 1 parasite/ml of blood, while RT-PCR detected 10 parasites/ml. The results of real-time NASBA can be obtained 12h earlier. Therefore, sooner than the ordinary real-time RT-PCR the use of real-time NASBA is preferred to the ordinary real-time RT-PCR.

Keywords: Toxoplasma Gondii, NASBA, Real-time RT-PCR, B1 rRNA Gene, Rat Blood Samples

P99

Effectiveness of Spiramycin for Treatment of Experimental Toxoplasmosis in Rats by the Real-Time NASBA Method

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Background and Objective: Toxoplasmosis is a main parasitic disease and may cause significant damage to the developing fetus and is a life-threatening opportunistic infection in immunocompromised persons. There are definite drugs available for the treatment of *T. gondii* infections. These drugs regimen, however, can cause side effects, however the macrolide antibiotic spiramycin is also used as a drug against *T. gondii*. This study tried to study the effectiveness of spiramycin in the treatment of toxoplasmosis. **Materials and Methods:** The experiments in the present study, fifteen rats received spiramycin 400mg/kg thrice, 15 rats received pyrimethamine-sulfadiazine 150mg/kg once treatment for only one week and 15 rats untreated any drug and were evaluated as the control group. The effectiveness of spiramycin for the treatment of rats experimentally infected with *Toxoplasma gondii* before and after treated, were analyzed by Real-time NASBA method. **Results:** Result of this study showed that spiramycin could be eliminating parasites after 5 days after initiation of treatment in infected rats. **Conclusion:** Spiramycin is effectiveness drug in eliminating *Toxoplasma gondii* in rat's blood and use in pregnant woman.

Keywords: Toxoplasmosis, Spiramycin, Real-time NASBA Method

P100

External Ophthalmomyiasis Caused by *Lucilia Sericata* Larva from Iran

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Myiasis is an animal or human condition initiated by parasitic dipterous fly larvae feeding in the host's necrotic or living tissue. In this study we report a case of external ophthalmomyiasis caused by *Lucilia sericata* in an old man with a vascular tumor of the retina and surgery history, from Bijar city of Kurdistan Province, Iran.

Keywords: Ophthalmomyiasis, *Lucilia Sericata*, Iran



P101

Case Report of Human Intestinal Myiasis Caused by *Lucilia Illustris*

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Myiasis is an animal or human condition initiated by parasitic dipterous fly larvae feeding in the host's necrotic or living tissue. Intestinal myiasis is usually an accidental phenomenon, which occurs due to the ingestion of eggs or larvae present in food. We report a case of human accidental intestinal myiasis caused by *Lucilia illustris* larva in a 45-year-old rural woman in west Province of Iran. This is the first reported case of *Lucilia illustris* larva causing human intestinal myiasis in Iran.

Keywords: Intestinal Myiasis, *Lucilia Illustris*, Iran

P102

Sensitivity and Antibiotic Resistance of *E. coli* Isolated from Urine Samples of Pregnant Women with Symptomatic and Asymptomatic Urinary Tract Infection Referred to Clinical Laboratories in 94 Orumiyeh

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Urinary tract infection is the most common human diseases at different ages. The average rate of infection in girls and women is higher. Statistics prevalence of urinary tract infection in women of reproductive age has been reported 50 times in males. Pregnancy favorable conditions for pregnant women with urinary tract infections that cause the infection. An accurate diagnosis of the cause of the illness in pregnant women due to the importance of the health of mother and child is necessary. In Urmia. In order to determine the prevalence of symptomatic and asymptomatic bacteriuria, the community consisted of 50 samples and 50 samples of *E. coli* with positive symptoms without signs of pregnant women admitted to medical diagnostic laboratories in Urmia. The antibiotic susceptibility to common antibiotics was determined by disk diffusion. The results showed that the rate of resistance and susceptibility of *Escherichia coli* isolated from the urine of pregnant women with symptomatic and asymptomatic urinary tract infections to antibiotics ampicillin and nitrofurantoin were dedicated in the city of Orumiyeh.

Keywords: *Escherichia Coli*, Urinary Tract Infection with Symptomatic and Asymptomatic, Pregnant Women, Antibiotics

P103

Prevalence of Intestinal Parasites in Refereed Patients to Shahid Ghazi Hospital of Sanandaj Province During 2014

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Background and Objectives: Parasitic diseases are among the most important problems of many countries in the world, especially developing ones. Since the first step of controlling measurements is epidemiological survey, therefore these studies for each province will be necessary. This study was aimed to investigate the prevalence of intestinal parasites in 3000 refereed patients to Shahid Ghazi hospital of Sanandaj province during 2014. **Material and Methods:** In this cross sectional study, fresh samples of 3000 persons with different ages were studied for intestinal parasitic infestation using the direct spreading method on all samples. **Results:** 392 (13.1%) of participants were infested with at least one type of intestinal parasites (pathogenic/non-pathogenic protozoa/helminth). The most common intestinal protozoa were *Entamoeba coli* (6.7%), *Giardia lamblia* (3%), *Blastocystis hominis* (2%), *Endolimax nana* (1%), *Iodamoeba bütschilii* (0.3%), *Entamoeba histolytica* (0.06%), *Fasciola hepatica* egg (0.03%) and *Ascaris* egg (0.03%). **Conclusion:** Results of this study revealed a high prevalence of intestinal parasites in Sanandaj province and seems that attempting for hygiene education is necessary.

Keywords: Intestinal Parasites, Sanandaj, Iran

P104

Prevalence of *Strongyloides Stercoralis* Infection in Villages of Kamyaran, Kurdistan Province

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Background: *Strongyloides stercoralis* is a nematode that causes severe infections in immunocompromised patients. *Strongyloides stercoralis* widely distributed in tropical and sub-tropical regions. Infection usually results in asymptomatic chronic disease of the gut, which can remain undetected for decades. However, immunocompromised patients may serious and often fatal hyperinfection syndrome. Considering to increasing of immunocompromised person, strongyloidiasis could be a health threatening problem. The main objective of this study was to determine the prevalence of *Strongyloides stercoralis* infection in Kamyaran (a city in Kurdistan province). **Material and Methods:** During a field study in eight semi-rural province of Kamyaran in 2014, 32 samples contain 14 stool samples and 18 soil samples were collected and examined by microscopic examination (direct smear) and formalin-ethyl acetate concentration. **Results:** The highest prevalence was in Paniran village, lowest prevalence were in Ramsht, Eshkaftan, Gaeder villages with one report from soil and no cases were reported for rhabditiform larvae in Ghoragh, Marnj, Kanisavaran and Sarkariz villages. Overall, larvae were observed in 43.75% of samples, including 12.5% feces and 31.25% soil samples. **Conclusion:** Results of this study revealed a high prevalence of *Strongyloides stercoralis* (especially in summer) in the Kamyaran and seems that strongyloidiasis could be a health threatening problem are also attempting prevention, elimination, early diagnosis and treatment is necessary.

Keywords: *Strongyloides Stercoralis*, Prevalence, Kamyaran, Kurdistan



P105

Evaluation of ZnO Nanoparticle Effect on Staphylococcus Aureus Growth and A-Hemolysin Gene Expression

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Background: Staphylococcus aureus, particularly methicillin-resistant S. aureus (MRSA), is an important pathogen in the health. Nanoparticle metal oxides such ZnO-NPs represent a new class of important materials which effect on both gram positive and gram negative bacteria and that are increasingly being developed for use in research and health-related applications. Materials and methods: 85 isolates (patients and health care workers) of S. aureus were studied in this research. For determining MIC all of isolates was assessed using Agar dilution technique with different concentrations of ZnO NPs (156, 312/5, 625, 1250, 2500 and 5000 µg/mL). After determining MIC, MIC₅₀, MIC₉₀, and sub-MIC, the effective of sub-MIC concentration of ZnO nanoparticle on hemolyse was assessed with phenotypic & genotypic way. For evaluation of phenotypic effect was assessed, changing in hemolyse in blood agar medium with & without ZnO NPs. In genotypic way, expression of α-hemolysin gene were performed in sub-MIC concentration of ZnO NPs & without ZnO NPs by Real Time-PCR. Results: MIC all of isolates was determined in different concentrations of ZnO NPs. Minimum concentration of ZnO NPs that inhibited growth of Staphylococcus aureus was 625 µg/mL. In phenotypic way hemolyse inhibited completely in sub-MIC concentration of ZnO NPs. Change fold hla gene expression in sub-MIC ZnO NPs medium was 0.29 by Real Time-PCR, that 3 time decrease than to ZnO free medium. Conclusion: ZnO NPs inhibited growth of Staphylococcus aureus and concentration of sub-MIC ZnO NPs inhibited hemolyse in blood agar medium. Section of this inhibition maybe decrease transcription of α-hemolysin gene expression.

Keywords: Staphylococcus Aureus, ZnO Nanoparticle, Antibacterial Effect, Gene Expression, α-Hemolysin

P106

Assessment of Drug Sensitivity of E.coli in Patien Infection Ts with Urinary Tract

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E. coli bacteria is a normal flora of the gastrointestinal Organisms which is the most common causes of urinary tract infection. According to the importance of urinary tract infections and risk of their expansion to the bloodstream and then to other parts of the body, their Proper and efficient treatment have always been taken into account. The aim of this study was to evaluate drug sensitivity in E. coli strains isolated from urine samples of urinary infected patients in Khatamolanbia hospital. 550 urine samples from the patients with urinary tract infection were collected in Khatamolanbia hospital of Gonbad Kavoo. Specimens were cultured in blood agar and EMB medium by standard loop and then by using differential tests in cloude MR, VP, TSI, urea production and citrat Simon, were investigated for the presence of E. coli. Then and drug sensitivity was performed on Muller Hinton medium with discs SXT, CTX, CRO, CP, FM, and AN. Results From 550 urine samples, 40 samples were separated according to E. coli differential tests. From 40 samples about 50% were sensitive to FM-drug (Nitrofurantoin), and 40% to AN (amikacin), 25% to CRO (ceftriaxone), 27.5% to SXT (trimoxazole), 27.5% to CTX (cefotaxime) and 37.5% to CP (ciprofloxacin), were sensitive, respectively. Discussion the results of this study indicate that in patients with E. coli urinary tract infections, Fm and AN had the most sensitivity and CRO and SXT had the least sensitivity. Considering the importance of antibiogram tests, it is recommended to prescribe antibiotic should be performed according to this test.

Keywords: Urinary Tract Infection (UTI), E. coli, Sensitivity, Antibiotic

P107

Oral Cavity Candidiasis as a Complication of Fungal Diseases in Diabetic Patients in South-East of Iran

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Oral candidiasis is a common opportunistic infection in diabetic patients. *Candida albicans* is colonized on different oral surfaces such as tongue, palate, dental caries and plaques. Different factors like age, sex, denture wears and smoking play role in amount and severity of colonization of this microorganism. Our goal was to determine the relationship between the existences of *Candida Albicans* in oral diabetic patient. This cross - sectional study was performed on 120 diabetic patients. After completing the questionnaire and collect saliva samples and smears from the mouth were cultured directly on sabouraud agar medium containing 0.005% chloramphenicol and for identified use of specific tests. Data were statistically analyzed using Chi-Square, Mann-Whitney, t-test and correlation tests. Overall, in this study from 120 patients, 61 cases (50.8%) had a positive culture for *Candida*. In this study, Based on observations *Candida* infection rates were relatively higher in older patients and in women. Infections among participants who used dentures (0.001P <) and have smoking (P <0.038) had significant relationship. The infection in people with type II diabetes is more than subjects with Type I diabetes. *C. Albicans* was the most common isolated *Candida* species in both groups. This study showed a high prevalence of Candidiasis and *Candida* colonization in oral samples of diabetic patients. Our goal was to determine the relationship between the existences of *Candida Albicans* in oral diabetic patient.

Keywords: Candidiasis, Diabetic, Oral Infection, South-East, Iran

P108

Sero Molecular Prevalence Study of Toxoplasma in Beta-Thalassemia Major Patients Using ELISA and LAMP Method in 2015

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Introduction Toxoplasma infection is one of the most prevalent and serious infectious diseases in immunodeficiency persons such as in beta-thalassemia major patients. The study was carried out to determine the sero-prevalence of anti-Toxoplasma antibodies in beta-thalassemia major patients. Method A total of four hundred and seventy serum samples were collected from beta-thalassemia major patients referring to Hajar hospital in Shahr-e-kord, Iran as the test group and healthy individuals as the control group (i.e. each group consisted of 235 samples). The demographic data were collected via questionnaire forms and the sera and blood samples were examined for specific anti-Toxoplasma antibodies (IgM, IgG) using ELISA and LAMP method. The processing of data was accomplished by the software, SPSS ver.20 and analysed by the Chi-square test, Independent T test and Logistic regression model. Results Out of 235 sera belonged to the beta-thalassemia major patients, 122 (51.9%) and 8 (3.4%) sera were positive for anti-Toxoplasma IgG and IgM antibodies, respectively. However, these positivity rates were 82 (34.8%) and 5 (2.1%) for anti-Toxoplasma IgG and IgM in the control group. There were significant differences between sex, age, contact with cat, job, Meat consumption in case group (p<0.001) and also There were significant differences between sex, age and Meat consumption in control group (p<0.001). also molecular results showed that 14 (5.95%) positive in control group and 23 (9.78%) positive in case group. Conclusion It is likely that the majority of Toxoplasma infections in beta-thalassemia major patients have been occurred prior to their malignancy. However, malignancy may reactivate the latent Toxoplasma infections.

Keywords: Toxoplasma Infection, Major Thalassemia, ELISA, LAMP



P109

Multi-Drug Resistance (MDR) E.coli in Patients with Urinary Tract Infection in Gorgan, North of Iran

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Introduction: Due to the lack of a rational antibiotic policy in clinical medicine, antibiotics are misused more often than not in developing countries and less often than not in developed countries, which lead to the increased emergence of multidrug resistant (MDR) strains of pathogenic bacteria and even of commensals. The aim of this study is, Frequency of multi-drug resistance in patients with UTI in Gorgan. **Material and methods:** This study carried out in Gorgan on 259 Escherichia coli isolate from urine with standard of microbiologic methods. Antibiotic susceptibility considered with Kirby-bauer disk diffusion methods (DDM). **Results:** 32.4% of patients with E.coli were hospitalized. 9 classes of antibiotics (18 antibiotics) were considered, the most of antibiotics resistance in this study were seen in clindamycin (98.5%) and then Fleuroquinolons (65%) and the most sensitivity belonged to Carbapenems (99.2%) and Amikacin (95.4%). 74.5% had resistant to multi drugs (MDR) simultaneous. 34.7% to 3-4 Classes (Clindamycin, Cephalosporin, Nitrofurantoin, Fluoroquinolone) and 11.6% was resistance to most of 7 classes of Antibiotics. 81% of hospitalized patients had MDR. **Conclusion:** In this study, were seen high frequent of multi drug resistant in uropathogens in both inpatients(81%) and outpatient (71.4%).

Keywords: Multi-Drug Resistance, E.coli, Urinary Tract Infection, Gorgan

P110

Identification of the Bacteria Cause of Ventilator Associated Pneumonia from the Patients Who Have Been Hospitalized in the Intensive Care Unit of Shahid Rejaei Hospital of Tonekabon

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Background and Aim: Ventilator Associated Pneumonia is the most prevalent of the mortality of patients in the ICU. Risk of infection with this disease is 3 to 10 times more than the patients who have been hospitalized in the other wards. **Methods:** In this research which has been carried out 1 years (2010-2011), among 35 patients hospitalized in the ICU who had used the mechanical ventilation. After the drawing out of the Nedator from the patient's lung, the tube was cut by the sterile scissor and transferred into the brain heart infusion broth and incubated for 48 hours under 37°C. Following the incubation period samples was transferred to the blood agar and DNA extraction was carried out using the phenol-chloroform's technique through the appearance of the grown colonies. In order to reproduce the DNA, the PCR test was performed using the 16s rRNA universal primers. The PCR's product was sequenced in order to identify the isolated bacteria. **Results:** Out of thirty sample collection, 46 strain of bacteria isolates 11 had belonged to Staphylococcus aureus, 2 to Corynebacterium, 2 to Staphylococcus hominis, 1 to Staphylococcus epidemitis, 1 to Staphylococcus lungodensis and 1 to Staphylococcus intermedius species and from gram negative bacteria, 7 to Pseudomonas aeruginosa, 6 to klebsiella pneumonia, 5 to Acenitobacter boomani, 3 to Enterococcus faecalis, 2 to Alcaligenes faecalis, 2 to Enterobacter cloace, 1 to Enterobacter aeruginosa, E.coil, 1 to Shigella flexeneri observed.

Keywords: Pneumonia, ICU, Ventilator, Prevalence



P111

Prevalence of Virulence Genes of Biofilm Producing Strains of Staphylococcus Epidermidis Isolated from Clinical Samples in Shahrkord University Hospital

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The virulence genes in *S. aureus* were investigated using polymerase chain reaction (PCR) with primers. Out of 80 isolates studied, 40 isolated (50%) formed black colonies (biofilm-forming strains) on CRA. In 22 of these isolates (25%) reaction was strongly positive; in 12 isolates (15%) reaction was moderately positive, and in the remaining 6 isolates, reaction was weakly positive. In the 22 isolates that had strong positive reaction and produced black colonies on biofilm, all virulent genes (*icaC*, *icaD*, *icaA*, *icaB*, *icaR*) were expressed. In the 12 isolates that had moderate positive reaction, 8 expressed all genes (*icaC*, *icaD*, *icaA*, *icaB*, *icaR*) expressed while the remaining 4 expressed only *icaA*, and *icaD* genes. Of the 6 isolated which had weak positive reaction, only 1 isolate (2.5%) expressed all the genes, in the other 5 isolates no gene was observed. Urinary isolates more frequently form biofilms than the isolates from other clinical samples. Statistical analysis using Chi square test showed that there was a significant correlation between the type of sample and the biofilm production ($P < 0.05$). The results of biofilm production on CRA were largely in agreement with microtiter plate assay and PCR assay. The capacity of bacteria to produce biofilm is an important factor in infectivity and happens via expression of *ica* genes. Recognition of bacteria that produce biofilm is thus important to control infection due to these bacteria.

Keywords: Staphylococcus Epidermidis, Clinical Isolates, Biofilm, Virulence Genes, Microtiter Assay Plate

P112

Effect of Antibacterial Extracts, Sorrel and Pumpkin, on Pseudomonas Aeruginosa Bacteria

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Introduction: Increasing bacterial resistance is noticed. In this study, antibacterial effects of extracts of sorrel and pumpkins, *Pseudomonas aeruginosa*, a Gram-negative bacteria on and opportunistic. **materials and methods:** In this study, fresh fruit plant leaves or dried and turned into powder, then within a few steps of the extract obtained in organic solvents. By evaporation of the solvent, extract broth microdilution test was reconstituted in sterile saline. And the MIC, MBC was determined. **Conclusion:** sorrel extract of *P. aeruginosa* MIC = 350 µg / ml and MBC = 700 µg / ml *Pseudomonas aeruginosa* bacteria. And pumpkins on MIC = 450 µg / ml and MBC = 850 µg / ml is. According to the above results, it can be hoped that the bacteria *Pseudomonas aeruginosa* extract both can be treated in hospital, including burn unit used in the food industry.

Keywords: *Pseudomonas Aeruginosa*, Medicinal Plants, Plant Extracts



P113

Survey of Enterobius Vermicularis Infection Prevalence in Urban and Rural Kindergartens of Orumieh by Graham Method in the Year 1392

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Introduction: due to predisposing factors for parasite growth in winter, the aim of this study was to investigation of the pinworm infection in urban and rural kindergartens of Orumieh in the year 1392. **Method:** Orumieh city was divided to 6 clusters that number of 14 urban kindergartens and rural 12 kindergartens were chosen. Children 1 to 6 years (820 children) were selected, then after training parents and fill out the questionnaire by them sampling by Graham method (scotch tape) was carried out in two stages. In the questionnaire, the variables of gender, age, educational level and hand washing frequencies during the day were considered. The data collected were analyzed using SPSS software. **Results:** A total of 820 samples collected, totally, 9 sample were the positive [%1.09 (7 boys and 2 girls)]. Positive cases were between the ages of 5 to 6 years; the infection level in children was greater which the education level of their parents was less than the Diploma. All positive cases were related to rural kindergartens. In addition, there is no significant difference between hand washing frequencies during the day and level of contamination ($p > 0.05$). **Conclusion:** Considering to the sanitary importance of Oxyuris in children and especially among urban and rural kindergartens; improving the quality level of health especially in rural areas can be effective in prevention and reducing parasitic complications. Conducting of periodic tests and continuous training seems to be necessary for personal and public hygiene in kindergartens.

Keywords: Prevalence, Oxyur, Kindergartens, Orumieh

P114

Survey of Antibiotic Multi Resistance of Gram Negative Bacilli Isolated from Pulmonary Infection in ICU Rajae Hospital in 2015

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Introduction Nosocomial infection are one of the most important health problems in admission patients in ICU. pneumonia is the most common nosocomial infections in ICUs. The goal of this study is to determine drug Resistance Pattern of gram negative bacilli isolated from hospitalize patients with pulmonary infection in ICU. **material and methods** This study is during 8 mounths (2015), the 58 samples of trachea tube or pulmonany fluids of patients. Samples were transported into TSB medium, and incubated in for 24 hours. Then subculture on Blood agar, chocolate agar, EMB. After 24h growth, differential and microbiological specific tests were done for determining of bacterial pathogens. Antibiotic resistant testing was performed on Muller Hinton agar by using disk diffusion (Kirby-Bauer) method, according to CLSI. results of the 58 cultures, isolated microorganisms in order of frequency included: Enterobacter sp17 (29.3%), klebsiella 13 (22.4%), Pseudomonas 4 (6.8%), Acinetobacter 4 (6.8%). Drug sensitivity tasting performed, results indicate the highest sensitivity Amikacin 5/78%, Ceftazidim 28 /5%, Ciprofloxacin 26/1. **Conclusion** The present study shows high prevalence of antibiotic resistance in gram negative bacilli isolated from patients admitted in ICU. It seems that irregular usage of antibiotics is the reason of high resistance. To overcome this problem it need to develop new antimicrobial agents, limiting the unnecessary use of antimicrobial and increasing compliance with infection control issue.

Keywords: Antibiotic Resistance, Respiratory Infection, ICU



P115

The Relationship between Antibiotic Resistance of E. coli Strains Isolated from Urine Samples of Patients Admitted to Aliasghar Hospital in the Spring of 1394 And Beta-Lactamase ESBL Genes, Ampc, Blactx-M bla SHV, bla TEM By Multiplex PCR

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Background: The enzyme beta-lactamase AmpC, CTX-M, TEM, SHV enzymes that are located on the removable elements. ESBL are hydrolysis of the beta-lactamases cephalosporins and Penicillins broad-spectrum. The purpose of this study was to determine the prevalence of ESBL-producing E. coli genes for beta-lactamases AmpC, CTX-M, TEM, SHV by Multiplex PCR and their relationship with E.coli strains were antibiotic resistance. Methods: A total of 55 strains of E. coli in urine samples of patients admitted to Aliasghar hospital. Isolation and susceptibility testing of isolates tested by the disk diffusion method were determined. The presence of genes AmpC, blaCTX-M, bla TEM, blaSHV by Multiplex PCR was performed using specific primers. Results: Most of penicillin and erythromycin resistance to antimicrobial respectively 90% and 85% the frequency and the highest sensitivity to antimicrobial ciprofloxacin imipenem 60% and 50% prevalence has been reported. Of the 55 samples tested, 20 samples (36%) have TEM gene in 35 patients (63%) were identified CTX-M genes. In 5 cases (9%) SHV, 15 samples (27%) AmpC 15 samples (27.2%) both TEM and CTX-M gene was observed. In 3 cases (5.4%) did not identify any of these genes. Conclusion: The results showed that the enzyme beta-lactamase producing strains ESBLs study shows over 60%. To prevent the spread of ESBL-producing E. coli strains should be careful medical care and use of appropriate antibiotics is done correctly and on time.

Keywords: E.coli, ESBL, Multiplex PCR, blaCTX-M, bla TEM, blaSHV, AmpC

P116

Reviews and Changes in Antibiotic Resistance of The Samples Referred to the Shahid Rahimi Hospital Khorramabad During the First 6 Months and 93 Is 94 Years

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Aim: To bacterial resistance to antibiotics is often a major cause of treatment of infectious diseases. In order to avoid treatment failure inducing bacterial identification and antibiotic resistance is required. The aim of this study was to investigate common bacteria isolated from blood cultures, reviews and changes in antibiotic resistance of the samples referred to the Shahid Rahimi hospital Khorramabad during the first 6 months and 93 is 94 years. Methods: The study on blood samples collected from patients admitted to hospital during the first 6 months of 1394 and 1393. Antibiotic resistance by disk diffusion method in accordance with Protocol CLSI was conducted. Results: During the two years of positive blood culture positive cases was 11% and was higher in men than women. Most pathogens isolated coagulase-negative staphylococci and Streptococcus pneumoniae was the least of it. Gram-negative bacteria showed maximum resistance to Ampicillin (82.15%), a Gram-positive bacteria Clindamycin and Erythromycin (60.97%), maximum sensitivity of Gram-positive bacteria Cefazolin (93.34%), Cefalexin (86.1%) and Gram-negative bacteria to Amikacin (91.3%) Gntamycin and Imipenem (84.78%) is. Conclusion: Due to high resistance to some antibiotics in bacteria and increase the resistance over the past two years, more attention to the correct use of antibiotics and antibiogram test is recommended for administration.

Keywords: Blood Culture, Antibiotic Resistance, Coagulase-Negative Staphylococci, Cefazolin



P117

Evaluation Epidemiology of Giardiasis Referral Specimens to Central Lab of Qazvin City from 2014 to 2015

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Introduction & Aims: The diseases of parasitic is a problem healthy in the world. Giardia lamblia pathogenic intestinal protozoa that causes both endemic and epidemic disease. This organism may also cause infectious in children. Particularly those in day - care facilities. It was the most frequent pathogenic parasite identified in fecal specimens by state health laboratories. Giardia lamblia causes an infection of the small intestine. There are often asymptomatic individuals and the disease may vary from mild diarrhea with vague abdominal complaints to a full malabsorption syndrome with diarrhea and steatorrhea similar to sprue. Giardiasis should be considered in any patient presenting with diarrhea of over ten days duration. The major of aim of this study is epidemiology of giardiasis in Qazvin from 2014 to 2015. **Method & materials:** In this prospective of cross sectional we tested the stool prepared smear with normal salin and lugol and check by microscope (HPF). **Result:** From 1870 samples of stool only 46 causes (2.5%) was positive of Giardia **Conclusion:** With this percent positive is a risk for infected personnel workers in restaurants and we ought to check periodically. Thus we offered education is necessary for solving one of this problems of healthy.

Keywords: Giardia, Diarrhea, Education

P118

Evaluation Study of Helicobacter Pylori Stool Exam Antigen Test in the Diagnosis of Helicobacter Pylori Infection

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Background: There are several tests for the detection of H. pylori infection which can be classified as invasive and non-invasive methods. The invasive tests are normally expensive which need endoscopic procedure. It is also not available everywhere, Therefore, there is a need for a quick, inexpensive and reliable non-invasive test to detect H. pylori. This study aimed to evaluate the enzyme immunoassay for the detection of H. pylori antigen in stool in the Ardabil population. Results of tests were compared with gold standard: histology and RUT. **Methodology:** 60 patients who had been referred to bras clinic by gastroenterologists due to dyspepsia were recruited. The subjects underwent endoscopic examination and twcbiopsies were taken from antrum, the first specimen was used for RUT and the second was used for histology. Meanwhile, a questionnaire was administered and a stool sample were taken and sent for HpSA (Helicobacter pylori Stool Antigen test). **Results:** If two tests of histology and RUT were positive, patients were considered as H. pylori positive. Thirty patients were positive for H. pylori and equal numbers were negative using gold standard. HpSA was positive in 29 of 30 and negative in 28 of 30. The sensitivity and specificity of the HpSA were 96.6% and 93.3% respectively. The positive and negative predictive values were 93.5% and 96.5% respectively.

Keywords: Helicobacter Pylori, Stool Exam Antigen Test

P119

Reports of Mucormycosis in Kashan Shahid Beheshti Hospital

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Introduction & aim: Mucormycosis is a life-threatening disease, which typically occurs in patients with diabetes mellitus and conditions of organ transplantation, neutropenia and malignancies. Rhinocerebral mucormycosis is the most aggressive fungal infection and causes death in more than 80% of cases with diabetic ketoacidosis and immunocompromised status, it affects nose and paranasal sinuses by direct invasion or through the blood vessels patients. **Methods:** This descriptive study involved 18 tissue samples were suspected to Mucormycosis were referred to the fungi section during years of 1389 to 1394. For mycology diagnosis, they were cleared and examined microscopically by KOH 10-20% and cultivated on sabouraud's dextrose agar. As well as pathology survey was done simultaneity. **Result & discussion:** In 8 cases were growth Mucoraceae spp, 5 cases was Aspergillus spp, 1 case was candida spp and in 4 cases fungus were not observed. Average of mucormycosis patients age was 45 ± 0.8 years- old. Five of them were male and three female. 7 cases were diabetic, 2 patient had kidney disorder and 2 cases were AML. Antifungal therapy and surgical debridement for necrotic tissues was done. one of patients was death and other were recovered partly. A prompt diagnosis is crucial to improve the survival and reduce the sequela of patients with rhinocerebral mucormycosis. Diabetic patients are predisposed to mucormycosis because of the decreased ability of their neutrophils to phagocytize and adhere to endothelial walls. Furthermore, the acidosis and hyperglycemia provide an excellent environment for the fungus to grow.

Keywords: Mucormycosis

P120

Evaluation of Effect of Sucrose on Biofilm Phenotypic Expression of Clinical Acinetobacter Baumannii Strains

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Introduction: Acinetobacter baumannii is an opportunistic pathogen specially in immunocompromised patients. It is medically important because of the increasing number of nosocomial infections produced by it. In addition, they forms biofilms on abiotic surfaces such as polystyrene and glasses well as biotic surfaces such as epithelial cells and fungal filaments. The aim of this study was to investigate effect of sucrose on biofilm formation of clinical A.baumannii isolates, by two methods. **Material and methods:** After specimen collection, Acinetobacter baumannii strains were identified with molecular & different identification tests. These strains were cultured on CRA Plate (BHI Agar base, Sucrose, Congo Red) and inoculated in 10 mL of TSB with 1% sucrose in test tubes. Biofilm production evaluate after 4 days. **Result:** Among 85 A.baumannii isolates, there were, 82% of strains formed biofilm and 21%, 39% and 21% belonged to weak, moderate and high biofilm producers in TSB tubes with sucrose. In CRA method, only 2% strains were biofilm positive (strong black colony) & the remnant was biofilm negative (red colony). **Discussion:** Our research showed high percentage of biofilm positive A.baumannii and ability of biofilm formation in the presence of sucrose in the tube method was better than Congo red agar. It seems that different environmental factors can be effective on expression phenotype of biofilm. Since A.baumannii is a multidrug resistance nosocomial infection pathogen, bacterial exposure to different media such as human body or hospital surfaces provide condition for spreading of this organism.

Keywords: Acinetobacter Baumannii, Biofilm Formation, Sucrose



P121

In Vitro Effect of Methanol Extract of Moringa Peregrina against Trichomonas Vaginalis

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Background: Trichomoniasis is a very common sexually transmitted disease (STD) that is caused by *Trichomonas vaginalis*. Metronidazole is yet used widely in the treatment of *T. vaginalis*, but some resistant strains to this treatment have been identified. Moreover, treatment with metronidazole is associated with several side effects. Thus the search for new drugs to overcome these problems is needed. **Objective:** This study aims to evaluate the effect of *Moringa peregrina* on *T. vaginalis* in-vitro. **Materials and Methods:** A clinical isolate of *T. vaginalis* was cultured in TYM (Trypticase Yeast Extract) medium supplemented with 10% bovine serum. The effect of *Moringa peregrina* extract on *T. vaginalis* were evaluated in concentrations of 375, 750, 1500, 3000 and 4000 µg/ml in two time points; 24h and 48h. Metronidazole drug is used as positive control at concentrations of 0.03, 0.06, 0.12, 0.25, 0.5 and 1 µg/ml. Live parasites were stained with trypan blue and their numbers were counted using a hemocytometer. Then the value of IC50 was calculated using Prism software for both groups. **Results:** *M. peregrina* extract in concentration of 4000 µg/ml has the most effect in *T. vaginalis* inhibition after 48h. The IC50 values of *Moringa peregrina* extracts and Metronidazole were calculated as 1.18 and 0.62 respectively. **Conclusion:** Due to the effect of *Moringa peregrina* extract on *Trichomonas vaginalis*, this plant could be a good candidate to replace metronidazole with that.

Keywords: Methanol Extract, Moringa Peregrina, Trichomonas Vaginalis

P122

Non-Decompensated Liver Cirrhosis: another Risk Factor for Invasive Pulmonary Aspergillosis?

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Introduction: Invasive pulmonary aspergillosis (IPA) is a rare and fatal disease usually occurring in patients with neutropenia resulted from chemotherapy for malignancy. The other risk factors include consuming corticosteroids, organ transplant, and advanced AIDS. Recently, the incidence of IPA in the immunocompetent patients without any history of organ transplant or malignancy has been increasing. The patients suffering from advanced cirrhosis are one of the cases involving this infection. **Case Presentation:** In this case, we report invasive pulmonary aspergillosis in a 50-year-old patient who was suffering from gradual abdominal pain and ascites, cough and respiratory distress. Radiographic signs showed a round infiltration in the upper part of the right lung. Despite receiving 48-hours antibiotics therapy, the fever was not subsided. In CT-guided needle lung biopsy, septate and acutely angled hyphae (dichotomous) were seen. Direct examination of sputum showed septate hyphae compatible with a filamentous fungus. According to morphological and molecular characterization, *Aspergillus fumigatus* was confirmed. MICs value of antifungal agents were determined based on CLSI M38-A2. Treatment with intravenous Amphotericin B was changed to oral voriconazole 200 mg twice a day. The patient did not have any kind of residual lung lesion within six-month follow-up and the cirrhosis is under control and now she has no respiratory symptoms or signs. **Conclusions:** Rapid bronchoscopy, biopsy and culture for fungi with Radiological evidence are recommended.

Keywords: Invasive Pulmonary Aspergillosis (IPA), Cirrhosis, Liver Failure



P123

An Effect of Several Comm Antifungal Drugs (Clotrimazole, Miconazole, Fluconazole) on Candida Species Isolated from Chronic Vulvovaginitis

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Objective: Candidal vulvovaginitis occurs in female genital by the over growth of candida especially candida albicans. This infection maybe resistance to therapy and occasionally becomes chronic. **Importance:** With attention to relaps of this infection and resistance of this strains to antifungal drugs, this projet has done. **Materials and methods:** This study carried out on 19 strains of candida albicans that were isolated from recurrent vulvovaginitis and the effects of clotrimazole, miconazole, fluconazole were assessed separately with microdilution broth methods. **Result:** The mean minimum inhibitory concentration (MIC) of clotrimazole, miconazole, fluconazole after 48 hours incubation were 7.05, 10.7, 21.47 µgr/ml and the minimum fungicidal concentration (MFC) of these drugs consequently were 24.7, 20.89, 54.47 µgr/ml. **Conclusion:** In this study clotrimazole with the least MIC had the best antifungal effect and fluconazole with most MIC had the least antifungal effects. The most MFC were for miconazole.

Keywords: Chronic Vulvovaginitis, Microdilution Broth, Fungicide, Strain

P124

Isolation and Molecular Diagnosis of Enteropathogenic E. coli by Phenotypic and Molecular Methods from Surface Waters of Fars Province

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Introduction: Enteropathogenic E. coli is one of the most important pathotypes of diarrheagenic Escherichia Coli, which is one of the most important causes of mortality in children under five years in the world. Phenotypic methods of enteropathogenic E.coli have several disadvantages such as false-positive results. Given the transmission of enteropathogenic E. coli by food and water, the goal of this study was design and set-up of PCR and comparison of it with phenotypic methods as well as determining the prevalence of this agent in surface waters of Fars Province. **Material and Methods:** This cross-sectional study was conducted on a water sample from a river (surface water) in Fars Province. Isolation of enteropathogenic E. coli from 46 collected samples was done using phenotypic method. PCR was designed and conducted on isolated samples. The results were analyzed using SPSS software. **Results:** Using sero-grouping and PCR, 6 (13%) and 4 (6.2%) samples were positive for enteropathogenic E. coli, respectively. There was a significant correlation in detection of enteropathogenic E. coli between the two methods of sero-grouping and PCR ($p < 0.05$). **Discussion:** This study is the first report of enteropathogenic E. coli in surface waters of Fars Province. PCR method to detect enteropathogenic E. coli has a high sensitivity and specificity compared with phenotypic methods; therefore, the use of PCR as well as sero-grouping is suggested in clinical and research laboratories.

Keywords: Enteropathogenic E. coli, Phenotypic, PCR, Surface Waters, Fars Province



P125

Isolation and Molecular Diagnosis of Enterotoxigenic *E. coli* by Phenotypic and Molecular Methods from Surface Waters of Fars Province

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Introduction: Enterotoxigenic *E. coli* pathotype (EPEC) forms the second large group of *E. coli* associated with diarrhea and responsible for more than 25% of pediatric diseases in the world. Pathogenic enterotoxigenic *E. coli* is transmitted by contaminated food and water. Accordingly, this study was conducted to set up a diagnostic PCR method for EPEC to compare with conventional phenotypic methods and to determine the prevalence of this agent in surface waters of Fars Province. **Material and Methods:** This cross-sectional study was performed on 46 samples collected from surface waters in Fars Province. After identification of EPEC by phenotypic method and sero-grouping, amplification of heat-labile enterotoxin A subunit gene with a 351 bp PCR product was designed and implemented, and the results were analyzed using statistical tests. **Results:** Using sero-grouping and PCR, 4 (8.69%) and 3 (6.52%) samples were positive for enteropathogenic *E. coli*, respectively. Statistical analysis showed a significant correlation between diagnostic PCR and sero-grouping in diagnosis of EPEC ($p < 0.05$). **Discussion:** This study is the first study to confirm the existence of EPEC in surface waters of Fars Province. The prevalence of EPEC in surface waters of Fars Province was significant, especially in the areas close to human communities. PCR method of diagnosis is superior to phenotypic methods in detection of pathogenic EPEC; therefore, it is suggested to use PCR for laboratory diagnosis of EPEC along with phenotypic methods.

Keywords: Enterotoxigenic *E. coli*, Phenotypic, PCR, Surface Waters, Fars Province

P126

Phenotypic and Molecular Detection of *Acinetobacter Baumannii* in Respiratory Specimens of Patients Referred to Specialized Hospitals in Karaj

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Introduction: *Acinetobacter baumannii* is a gram-negative bacterium and a causative agent of nosocomial infection with high prevalence, affecting a wide range of patients, including those with defective immune system. There is a correlation between early and rapid detection of *Acinetobacter baumannii* pneumonia in respiratory specimens and early treatment as well as saving the life of patients. The aim of this study is to design and set up *Acinetobacter baumannii* detection by PCR, compare it to the current gold standards of detection and determine the molecular epidemiology of this agent in respiratory specimens. **Material and methods:** This cross-sectional descriptive study was conducted on patients with respiratory problems referred to specialized hospitals in Karaj. In compliance with all principles of medical ethics, 80 pulmonary lavage samples and 156 provocative sputum samples were collected from patients. Phenotypic identification of *Acinetobacter baumannii* was done based on the guidelines stipulated by Ministry of Health. Molecular identification of *Acinetobacter baumannii* in clinical specimens was carried out using primers designed for acriflavine resistance protein B. **Results:** The incidence of *Acinetobacter baumannii* in clinical specimens was reported 23.72% using phenotypic methods. PCR test indicated 27.11% incidence of *Acinetobacter baumannii* in the specimens. Statistical analysis showed a significant correlation between the use of molecular and phenotypic methods in *Acinetobacter baumannii* detection. **Discussion:** PCR-based molecular detection has a higher value and validity compared to phenotypic methods; therefore, it is recommended to use PCR as a complementary method in clinical laboratories given the importance of rapid detection of pneumonia caused by *Acinetobacter*.

Keywords: *Acinetobacter Baumannii*, Respiratory Specimens, Phenotypic, PCR, Karaj



P127

Investigation of Bloodstream Prevalence of Methicillin Resistance Staphylococcus Aureus (MRSA) in Admitted Patients in 2012-2015

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Background: Staphylococcus aureus is a leading cause of Bloodstream infections (BSIs) world wide. Treatment of Bloodstream infections is becoming difficult due to the increasing trend of antibiotic resistance. Rational and correct use of antibiotics requires identifying of microbial pathogens and its drug resistance patterns in a community. This study was carried to identify the microbial profile in the blood culture isolates and their antibiotic susceptibility patterns. **Material & Methods:** study was carried out in Milad hospital at from April 2012 to March 2015. A total of 21945 samples were included in the study. The antimicrobial susceptibility testing was performed by Kirby-Bauer disk diffusion method. The isolates were tested for methicillin resistance by using Cefoxitin disk by disk diffusion method and confirmed by agar screen test. The results were interpreted according to CLSI criteria. **Results:** from among the isolates about 124 samples were Staphylococcus aureus and 44 Strains were MRSA, all (100%) were resistant to Penicillin. In view of the high prevalence of MRSA in the hospital environment, there is a need to regularly monitor and implement adequate control measures to reduce the morbidity and mortality of the infection. **Conclusion:** MRSA can enter the normally sterile bloodstream either from a local site of infection. It is a highly contagious strain of the Staphylococcus aureus family of bacteria, which cause a number of infections, some of which are serious. The reason that MRSA is such a problem for hospitals and care homes and why it has become known as a superbug that it is resistant to common antibiotics.

Keywords: Bloodstream Infections, MRSA, Antibiotic Resistant

P128

Expression Assay of RND and MATE Family Pumps Genes in MDR Clinical Samples of Acinetobacter Baumannii in Patients From Tabriz Special and General Imam Reza Hospital in 2014 With Molecular Methods

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Background and Objectives: Acinetobacter baumannii as opportunistic hospital pathogens responsible for severe infections. Efflux systems are widely found in these microorganisms and confer resistance to various compounds, including antibiotics, by extrusion of the drug. Therefore detection of these organisms is very important. The aim of this study was to determine expression of RND and MATE Family pumps genes among A. baumannii isolates from hospitalized patients in Imam Reza hospital in Tabriz, Iran from year 2013 to 2014. **Methods:** Antibiotic susceptibility tests were performed by Kirby-Bauer disc diffusion and E-test methods. The expression of RND and MATE family pumps genes detected by Real-Time RT-PCR. **Results:** The resistance of A. baumannii isolates against tested antibiotics analysed as follows: 51 (84%) to trimethoprim-sulfamethoxazole, 59 (98%) to ceftazidime, 29 (48%) to amikacin, 46 (77%) to gentamicin, 30 (50%) to tobramycin, 60 (99%) to imipenem, meropenem, ciprofloxacin, ceftriaxone, cefepime and ofloxacin, 6 (11%) to colistin. Using E-test 45 (73.3%) to imipenem, 57 (93.3%) to ciprofloxacin, 23 (38%) to amikacin. The prevalence of adeA, adeB, adeC and abeM genes was 54 (88.5%), 61 (100%), 57 (93.9%), and 60 (98.3%), respectively. The gene expression analyses of Real-Time RT-PCR show that the respective levels of adeB and abeM were found to be 0.67 fold and 4.7 fold higher than in reference gene. **Conclusions:** The result of this study shows high expression of adeABC efflux pump in MDR A. baumannii and the growing number of nosocomial infection associated with XDR A. baumannii complex leading to difficulties in antibiotic therapy.

Keywords: Acinetobacter Baumannii, Gene Expression, Real-Time RT-PCR



P129

Determination of the Dominant Serogroup of Non-Typhoid Salmonella in Asymptomatic Carriers Referred to Health Center of Shahid Ghodsi Mashhad

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Introduction and Objectives: Non-Typhoid Salmonella (NTS) commonly causes acute gastroenteritis, a major Cause of morbidity, worldwide. There is very little information available from IRAN regarding the status of Salmonella serogroups. This study aimed to determine the dominant serogroups of Non-typhoid Salmonella isolated from asymptomatic carriers referred to health center of Shahid Ghodsi Mashhad and may provide epidemiological data about NTS in our region **Materials and Methods:** The study was performed on 33 Non-Typhoid Salmonella was isolated and identified by using standard microbiology methods. Salmonella O specific antisera was used to identify serogroups by slide agglutination method. All culture media and antisera were quality control by standard strain **Results:** 4 cases of NTS isolates were A serogroup (12.1%), 4 cases of B serogroup (12.1%), 7 cases of C serogroup (21.2%) and 4 cases were D serogroup (12.1%). 14 of the isolates (42.4%) were negative in the reaction with antisera **Conclusion:** In this study the majority of the isolates did not react with the available antisera. The results showed that the dominant serogroups in our region are different from reports in other countries. The result of this research reveals, the necessity of design and production antisera for other serogroups. The study suggest further investigation in order to identify common serogroups in Iran.

Keywords: Non-Typhoidal Salmonella, Dominant Serogroups, Iran

P130

Prevalence of Multidrug Resistant Staphylococcus Aureus in Clinical Specimens, Southeast of Iran (Rafsanjan) 2015

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Introduction The widespread use of antibioticss has been responsible for multidrug resistant (MDR) bacteria. Methicillin resistance Staphylococcus aureus (MRSA) is the bacteria that have a dramatic increase in resistance to antibiotics in the last decade. This study was conducted to evaluate the prevalence of MDR among MRSA isolates collected from different clinical specimens in Rafsanjan. **Material and methods** In this cross-sectional study, 114 non duplicated s aureus samples from patients attending the Ali Ebne abitaleb hospital in Rafsanjan were assessed during 2015. Culture isolation, identification was done on the basis of standard bacteriological methods. Susceptibility to antibiotic were carried out using Kirby Bauer method. Methicillin resistance was detected by oxacillin disc diffusion tests. Multidrug resistance (MDR) rate were identified based on resistance profile against three or more classes of antibiotics **Result.** A total of 44 (37.6%) MRSA strains were isolated from studying clinical specimens. The prevalence of MDR strains was 34.21% among all samples. The rate of MDR phenotype in cases of MRSA and MSSA isolates were 88.63% and 0.1% respectively. The most common phenotype was resistance to clindamycin, erythromycin, ciprofloxacin, doxycycline and trimethoprim-sulfamethoxazole. Antibiotic sensitivity pattern of isolates revealed no resistance to vancomycin and teicoplanin although the lowest levels of resistance rate were observed to linezolid and fusidic acid. **Discussion** the study showed a high level of MRSA with a majority of MDR isolates in southeast of Iran. Therefore, in order to prevent increased resistance, it is necessary to withhold prescriptions and unessential use of available antibiotics.

Keywords: Staphylococcus Aureus, Mrsa, Multidrug Resistant , Southeast of Iran



P131

The Antagonistic Effect of *Lactobacillus Plantarum* and *Fermentum Anthropogenic* against the Growth of Vancomycin Resistant Enterococci (VRE) Cause Nosocomial Infections

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Background: Enterococci are the fourth cause of nosocomial infections, and these infections are responsible for 10% of the total. Increased morbidity, mortality and costs are treated. The aim of this study antagonistic properties of *Lactobacillus plantarum* and *Lactobacillus fermentum* of human origin against vancomycin resistant enterococci infection was hospital. materials and methods: Initially, 105 nosocomial infections samples were collected. Then vancomycin resistant enterococci were isolated and identified. Antagonistic effect of lactic acid bacteria against pathogenic isolates was conducted using wells. Growth inhibition zone diameter <11, 16-11, 22-17 and 23> respectively; Ineffective (-), medium (+), strong (++) and very strong (+++) was considered. Results: Of the 105 samples, 9 *Enterococcus faecalis* were isolated and 6 of them were resistant to vancomycin. These isolates showed high resistance to Clindamycin and Ampicillin but were sensitive to Linezolid. Antagonistic effect of *Lactobacillus plantarum* against all isolates of Enterococci was moderate (+) and *Lactobacillus fermentum* had average effect (+) against 55% of the pathogen isolates. Conclusion: Due to the zone of growth inhibition (antagonistic action) against isolates of enterococci, that created by lactobacilli, so the consumption of products containing probiotic lactobacilli especially those used in this study could be useful in the prevention and treatment of these infections.

Keywords: Nosocomial Infections, Enterococci, *Lactobacillus*, Antibiotic Susceptibility

P132

Chemical Composition and Antifungal Activity of Iranian Endemic Mint (*Mentha Mozaffarianii*) Essential Oil against Six Fungal Strains

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Bacteria and fungi are capable of developing resistance to drug use as therapeutic agents. Medicinal plants have been used for centuries in traditional medicine because of their therapeutic value. Mint species have been exploited by man for more than two thousand years. *Mentha mozaffarianii* Jamzad is an endemic mint species from Iran. Distribution of this species is exclusive to Hormozgan province (south of Iran). The aim of this study was to investigate the antifungal effects of essential oil of *Mentha mozaffarianii* Jamzad from the aerial parts on the growth of six strain of fungi due to the anti fungal activity of subspecies of this genus. The aerial parts of the *M. mozaffarianii* were hydrodistilled. Using an all-glass Clevenger-type apparatus. The essential oils were dissolved in 10% aqueous dimethylsulfoxide and the anti fungal activity was performed by disc diffusion method. 200 µl of the essential oils were added on the disc. In this work the chemical composition of essential oil and their main components were determined by GC-MS as a potential antifungal agent. The main compounds in the oil were piperiton (51.04), 1,8-cineol (11.69), LINALOL (11.9). The disc-diffusion method showed antifungal activity (no growth) in concentration of 20 and 2mg/disc against *Candida albicans*, *Trichophyton mentagrophytes*, *Aspergillus flavus*, *Trichophyton rubrum*, *Microsporon canis*, *Epidermophyton floccosum*. This finding revealed that *Mentha mozaffarianii* essential oil indicated considerable antifungal activity. According to the phytochemical results cineol (11.69), LINALOL (11.9) might be responsible for this observed activity and could represent a source of natural products with modifying antifungal activity.

Keywords: Phytochemical, GC/MS, *Mentha Mozaffarianii*, Lamiaceae, Antifungal Activity, Essential oil



P133

The Antagonistic Effect of Lactobacillus Plantarum and Fermentum Anthropogenic against the Growth of Hospital-Acquired Methicillin-Resistant Staphylococcus Aureus (HA-MRSA)

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Background: Hospital-acquired methicillin-resistant Staphylococcus aureus (MRSA) is the one of the most important causes of nosocomial infections. Increased morbidity, mortality and costs are treated. The aim of this study was survey antagonistic properties of Lactobacillus plantarum and Lactobacillus fermentum of human origin against HA-MRSA materials and methods: Initially, 105 nosocomial infections samples were collected. Then MRSA isolates were recovered and identified. Antagonistic effect of lactic acid bacteria against pathogenic isolates was conducted using wells. Growth inhibition zone diameter <11, 16-11, 22-17 and 23> respectively; Ineffective (-), medium (+), strong (++) and very strong (+++) was considered. Results: Of the 105 samples, 8 MRSA were isolated. These isolates were sensitive to vancomycin, resistant to ceftazidime, erythromycin and clindamycin. The antagonistic effect of lactobacilli as follows: both lactobacillus plantarum and Lactobacillus fermentum have moderate (+) effect against the growth of MRSA isolates. Conclusion: Due to the zone of growth inhibition (antagonistic action) against isolates of enterococci, that created by lactobacilli, so the consumption of products containing probiotic lactobacilli especially those used in this study could be useful in the prevention and treatment of these infections.

Keywords: Nosocomial Infections, Staphylococcus Aureus, Lactobacillus, Antibiotic Susceptibility

P134

Consideration of Septicemia in Neonatal Ln NICU Section of Sina Hospital

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Introduction: Septicemi is one of the most common reasons of mortality and morbidity around the world. Antibiotic is the main approach for curing this disease and quick diagnosis can decrease level of mortality. The aim of this study is to investigate the frequency of the bacteria isolated from neonatal and diagnosis sensitivity or antimicrobial resistance in patients with septicemia. Materials and Methods: In this study 287case of neonatal in NICU section of Sina in 1392 (2013- 2014). have been studied. Blood extraction from neonatal has been performed using sterile method and blood has been cultured in TSB medium, then subculture in MAC and blood Agar for 24 hours. Finally we considered cultures and in some cases, bacteria types have been identified by using bacteriological biochemical tests. Antibioqram has been performed using disc diffusion method. Result: We considered 34 patients affected by septicemia among 287 neonatal. The abundance of isolated bacteria is as following: staphylococc 25 case (73/52%), E. coli (8%), Klebsiella (8 %), reptococci (4%), proteus (4%) the results, it has been showed that Staph has the greatest sensitivity to vancomycin and Amikacin high resistance to Ceftraxon. Conclusion: Frequency of Staph coagulase Posetive has been found more than other bacteria. Therefore more epidemiologic studies in sensitivity of this bacteri to antibiotics and its frequency should be performed.

Keywords: Septicemia, Antibiotic, Neonatal



P135

Comparison of E.Test and Disk Diffusion Agar in Detection of Antibiotic Susceptibility Test of E.coli Isolated from Patients with Urinary Tract Infection

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Introduction: UTI is one of the most common bacterial infections and E.coli is known as an important cause of UTIs. Since bacterial resistances of antibiotics are increasing, reliable methods of antimicrobial resistance detection are of paramount importance in treatment and management of UTIs. The objective of the present pilot study is to compare and to evaluate the performance of disk diffusion agar and E.Test (Epsilometer Test) for antimicrobial susceptibility testing of E.coli isolated for UTI. **Material & Methods:** This pilot study was done 68 isolated of E.coli from patients with UTI in Bou Ali Sina Hospital, Mazandaran University of Medical Sciences during 2015. Antibiotic susceptibility testing was performed by Kirby-Bauer disc diffusion method using Iranian disc for Imipenem, Gentamycin, Ciprofloxacin, Nitrofurantoin and Ceftazidim; and Minimum Inhibitory Concentration (MIC) determination was performed by Sweden E.Test for the same set of antimicrobial. All tests were performed on Müller Hinton agar. **Results:** Comparison of E.Test and Iranian disk diffusion agar showed that paramount differences in antibiotic agreement. Whereas E.Test is the most sensitive that disk diffusion agar. **Conclusion:** The results of this study showed that Iranian disk diffusion agar may be used as a preliminary screen for antibiotic susceptibility testing of E.coli and is less sensitive than E.Test. Comparisons of 2 methods have showed that E.Test is the most sensitive and show is the effective dose of antibiotic for treatment and prevention of antibiotic resistance.

Keywords: E.coli, UTI, E.Test, Disk Diffusion Agar, Susceptibility Test

P136

The Relationship between Phylogenetic Environmental Samples of Aspergillus Flavus Originated from Environment by Microsatellite Typing

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Introduction: Aspergillus flavus occur most frequently in soil, water, decaying vegetation and organic debris. It sporulates abundantly and the spores are simply dispersed into the environment by air. As a result of this ubiquitous presence, people are probably constantly exposed to A. flavus spores. Microsatellite genotyping was used to determine and analysed the genetic distances between A. flavus isolates. **Material and methods:** We used a panel of nine microsatellite markers to analyze the genetic relatedness of A. flavus isolates. Microsatellite typing of 24 environmental isolates was performed. All strains were preliminarily identified as A. flavus by colony morphology and microscopic characteristics and confirmed by partial sequencing of the β -tubulin gene fragment. The A. flavus isolates were genotyped by using a microsatellite typing scheme that consists of three multiplex PCRs that target each three loci. **Result:** The collection of 24 isolates was analyzed by using the complete panel of nine STR markers. The Simpson's diversity index for the individual markers ranged from 0.4812 to 0.9457. The panel of all nine markers combined yielded a diversity index of 0.9948. The high genetic diversity of Iranian A. flavus isolates with isolates from other countries was also observed in STR typing. **Discussion:** In previous studies in Iran, multiple molecular methods have been developed to trace the spread of particular A. flavus strains. Several studies have shown that microsatellite typing of A. flavus species has emerged as a reproducible, high discriminatory method with easy exchange of results between different laboratories.

Keywords: Aspergillus Flavus, Environment, Phylogenetic



P137

Mobile Cell Phone Devices, Reservoirs of Bacteria

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Introduction: Mobile phones are close contact with the hand, and environment. They are becoming important devices for communication, alternatively could serve as reservoirs of bacteria. The aim of present work was to check whether the mobile phone of first year nursing student act as a pool of bacteria. **Materials and Methods:** Swabs were taken from surfaces, side and back of nursing students mobiles (randomly) and immediately inoculated on blood agar. Growth was identified using cultural, morphological and biochemical techniques. **Results:** It was revealed that only 7 out of 44 (15.9%) mobile phone of nursing students were free of bacteria and 37 out of 44 (84%) mobile phone were contaminated by bacteria. In total 109 bacteria were isolated from 44 mobile phone, Coagulase negative Staphylococcus 40 (36%), Diphtheroid 18 (16.5%), Staphylococcus aureus 34 (31%), Citrobacter 12 (11%) and Enterobacter 5 (4.5%). **Discussion:** In less than 20 years mobile cell phones have been used as communication technology devices which could become a reservoir of bacterial. In present study the use of mobile phones by nursing student not only demonstrated a high contamination by normal flora, nevertheless, also more importantly showed pollute with pathogens. In conclusion nursing students should decontaminate their mobile cell phone with alcohol disinfectant and they should follow hand washing strictly to reduce risk of spreading bacterial contamination.

Keywords: Mobile Cell Phone, Bacteria, Nursing Student

P138

Determination of Relative Frequency of ABO/Rh Blood Groups in Patients with Bacteremia in Shahid Sadoughi Hospital

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Introduction: As regards the role of genetics in susceptibility to various diseases and similarity of microorganisms' superficial monosaccharide to blood group antigens, blood group antigens maybe considered as a risk factor for bacteremia. **Purpose and importance of research:** The present study aimed to determine the association between ABO blood groups/Rh and bacteremia risk. **Research methods:** This study is a cross-sectional research consisting of 100 patients with symptoms of bacteremia from March to December 2014. Blood group was determined through tubular method, Cell Type and Back Type. Data were analyzed by using the SPSS 22 software. **Results:** Among 100 patients with bacteremia, 48 and 52 were males and females, respectively. The patients' mean age was 44.34±31.91 years. Enterobacteriaceae (58%) and Staphylococcus aureus (27%) were the most common causes of bacteremia among these patients. In this study, Blood group A was found in 31% of patients, B in 33%, AB in 12% and O in 24%. 91% of patients were Rh positive and 9% were negative. We compared the relative frequency of blood group O with A, B and AB groups (in comparison with normal population) and the difference was significant (P-Value=0.036). **Conclusions:** Our results show that there is an association between blood group antigens and chance of developing bacteremia.

Keywords: Bacteremia, ABO Blood Group System, Rh Factor

P139

Antifungal Effect of the Extract of the Echinophora Platyloba and Rosmarinus Officinalis on Candida Albicans

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Introduction: Candida albicans is an oral commensal flora that causes opportunistic local and systemic infections in immunocompromised individuals. Fluconazole is frequently used for treating patients with active infections or preventing recurrent infections. The emergence of resistant strains encouraged scientists to search for compounds that have antifungal property and can overcome the usual microbial resistant mechanisms to antimicrobial agents. This study aims to investigate the antifungal effects of the extracts of the Echinophora platyloba and Rosmarinus officinalis on Candida albicans. **Material and Method:** The extracts of the Echinophora platyloba and Rosmarinus officinalis were prepared using a rotary device. The inhibitory concentration against Candida albicans was determined using incubation in media. **Result:** The results showed that minimum inhibitory concentration of Echinophora platyloba in ppm 25 that a fungus strains inhibited while maximum inhibitory concentration ppm 250 and two strains of Candida albicans in the concentration inhibited. The result show that highest MIC of R. officinalis against C. albicans was 150 ppm and low MIC was 25 ppm against C. albicans. **Discussion:** Echinophora platyloba and Rosmarinus officinalis extract was effective in women with candida vaginitis. More multicentral studies are needed to evaluate the effects in more details.

Keywords: Antifungal, Echinophora Platyloba, Rosmarinus Officinalis, Candida Albicans

P140

Urinary Tract Infection in Spinal Cord Injuries

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Objective: Spinal cord injuries are typically associated with major trauma from motor vehicle accidents, falls, sports injuries, and violence. Urinary Tract Infections (UTI) is one of the most frequent conditions seen in spinal cord injuries patients. Diagnosis is not always easy due to lack of symptoms. Present study is survey about urinary tract infection and pyuria in these patients. **Methods:** All of patients with spinal cord injuries, who admitted to "Brain and Spinal Injury Repair Research Centre" in Imam Hospital in duration one year, were included in this study. Clean catch midstream urine samples were collected of patients and were analyzed by biochemical and microscopically surveys. **Results:** In total 103 patients, 22 patients have cervical spinal cord injury, 52 patients have thoracic spinal cord injury and 13 patients have lumbar spinal cord injury. 83 patients were urine culture positive with urinary tract infection and pyuria were seen in 65 patients. the highest incidence of UTI and pyuria were demonstrated in patients with cervical spinal cord damage. E.coli, Klebsiella pneumoniae and Enterobacter cloacae were isolated in urine samples respectively. the high incidence of resistancy to Nitrofurantoin and Imipenem in E.coli were seen. **Conclusion:** Patients with spinal cord injuries have to use catheter for long time and or for all of life, and they are high risk to recurrent urinary tract infections and other infections. These patients need to monitor for urinary tract infection although without any symptoms of infections and sometimes they need to take prophylactic antibiotics.

Keywords: Pyuria, Spinal Cord Injury, Urinary Tract Infection



P141

In Vitro Study of Antibacterial Effect of Some Plants Extract on Pseudomonas Aeruginosa and

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Introduction: As drug resistance continually increase, scientists are seeking for an appropriate alternative for curing of infection from resistant bacterias. This research aims to discover function of some medicine plants on pestiferous Pseudomonas aeruginosa and Escherichia coli in human. **Material and Method:** Evaluate the antibacterial activity of the plant extracts were investigated using strain of bacteria Pseudomonas aeruginosa ATCC27853 and E.coli ATCC25922 and antibacterial effect of Peganum harmala and Heracleum Persicum using broth microdilution method. **Result:** The minimum density of prevention of Pseudomonas aeruginosa is 100ppm. Whereas the maximum of this is 200ppm. Which one strain of this bacteria has been demolished. **Conclusions:** Plant extracts inhibit bacteria Pseudomonas aeruginosa and Escherichia coli are good. The purified plant extracts and trace substances or ingredients that are recommended.

Keywords: Antibacterial Activity, Pseudomonas Aeruginosa, E.Coli, Extract Plant

P142

The Effects of Few Plant Extracts on In Vitro Formation of Pseudomonas Aeruginosa Biofilm

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Introduction: Pseudomonas aeruginosa is an opportunistic bacterium that causes diseases in human beings, animals, and plants. It is one of the most important factors of the nosocomial infections in a wide range of patients with immunodeficiency including patients with malignant diseases, cystic fibrosis, and burns. Biofilm production in this kind of bacterium is one of the pathogenic factors. This study aims to investigate the effects of few plant extracts on in vitro formation of pseudomonas aeruginosa biofilm. **Materials and Method:** Using the rotary system, the extracts of various plants were concentrated and prepared. Standard bacteria strains were provided and growth and biofilm formation of strains were determined using the microtiterplate method. **Results:** Results show the desirable antimicrobial effects of the silver nanoparticles and plant extract on the formation of the Pseudomonas aeruginosa biofilm so that the highest effect was observed for silver nanoparticles and the lowest inhibitory effects were observed for Bucks beard and Prangos Ferulaceae. **Discussion:** Medicinal plants in this study decrease the rate of the biofilm formation. Since the biofilm formation is one of the pathogenic factors in mucoid strains, further studies will more probably help to control the infections using the findings of this study.

Keywords: Biofilm, Pseudomonas Aeruginosa, Plant Extract, Inhibitory Effects



P143

The Epidemiological Study of Brucellosis in Khash City from 2009 to 2014

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Introduction: Brucellosis patients has is one of zoonotic disease .The transmitted to humans from infected animals .Brucellosis in most parts of the world, especially in developing countries terms of public health and socio-economic status is of great importance. This pays study of investigates epidemiological status Brucellosis in the Khash city. **Methods:** This retrospective study based on data available in patients with brucellosis during the past 6 years Khash city was a center of health care. Detection of brucellosis in accordance with 2ME test Wright, the Rose Bengal. Then the patients by age, gender, place of residence, occupation, the extraction were investigated. **Results:** 336 people were infected with brucellosis. That were 149 males %44 and 189 women, %56. The lowest age group with 9 months to 9 years and highest top 50 years. were people areas %91 rural and %9 urban. Most people were involved in early disease, housewives and the lowest employee. Most spring and winter were the lowest in patients with brucellosis. The most was patients with brucellosis spring season and winter least. **Conclusion:** The results of this study showed brucellosis is one of the most important health problems in the city of Khash and control needs engaged in a concerted effort, especially Ministry of Health and Medical Education and the Ministry of Agriculture.

Keywords: Epidemiology, Brucellosis, Khash City

P144

Antifungal Effects of Silver Nanoparticles and Amphotericin B on Aspergillus Flavus; In Vitro and Animal Model

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There is a limited range of antifungal agents available to treat disease caused by Aspergillus including the polyenes, flucytosine, azoles and more recently the echinocandins. There for it is necessary to find new ways for destroying Aspergillus Flavus. The purpose of this study was to investigate the antifungal effects of Amphotericin B and silver nanoparticles on A.Flavus in vitro and in vivo. Different concentrations of Amphotericin B and silver nanoparticles were prepared. Antifungal effects of AmB and SNPs against A.flavus investigated by agar dilution method. Then minimum inhibitory concentration (MIC) and minimum fungicidal concentration (MFC) determined by the broth microdilution method. The second stage was a stage animal model, the mice after infection with MFC concentration of drug and silver nanoparticles were treated and then the spleen was removed to determine the reduction of spores. The results of the agar dilution showed that silver nanoparticles at 2000 ppm and drug at 80 µg/ml can inhibit the growth of A.flavus. In the broth microdilution method MIC for the silver nanoparticles equal to 31/25 ppm and MFC for SNPs 62/5 ppm were obtained, and for amphotericin B MIC was equal to 3/9 µg/ml and MFC was 7.9 µg/ml. In animal models, silver nanoparticles can inhibit the growth of fungi were identified by 45 percent. Amphotericin B to inhibit mold growth rate of 85% and 2% in the control group were able to eliminate the fungus. So silver nanoparticles can be control A.flavus.

Keywords: Silver Nanoparticles, Aspergillus Flavus, Amphotericin B, Antifungal Effect, Animal Model



P145

Evaluation of Diagnostic Molecular Techniques by Loop Mediated Isothermal Amplification (LAMP) in a Fast and Accurate Detection of Bacillus Anthracis in Comparison to Other Molecular Methods

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Introduction: Anthrax is caused by *Bacillus anthracis* which is categorized in very dangerous biological agents group. Methods of detecting this agent classically include culture, Immunodiagnosis detection of capsule shape and lysis by gamma phage, that these methods lack sufficient functionality. Loop-mediated Isothermal Amplification is a new generation of molecular amplification method where in this method an amount of 10⁹-10¹⁰ DNA copy is created in 1 hour and the result of the reaction is detectable through using simple methods like turbidity or discoloration due to fluorescence colors. **Purpose and importance of research:** The applied aim of the study is to describe the excellences and abilities of LAMP technique compared to other molecular methods for rapid and accurate detection of anthrax. **Research methods:** This study is a cross-sectional research which has dealt with the detection of *Bacillus anthracis* over the previous reported documentations on the use of LAMP technique. **Results:** This molecular techniques has features such as 100% specificity and high sensitivity, simplicity in a process of detection, lack of necessity to extract the DNA from the sample, less affection by the non-activator substances in different samples, the high-speed diagnosis, mobility and lack of necessity to expensive equipment. **Conclusions:** Based on this study, the LAMP method provides an accurate, fast and low-cost tool to search and detect *B. anthracis* in cases of bioterrorism.

Keywords: *Bacillus Anthracis*, Rapid and Sensitive Detection, Loop Mediated Isothermal Amplification

P146

Detection of *Cryptosporidium* spp. In One-Hump and Two-Hump (Dromedary and Bactrian) Camels of Ardabil Province, Northwest Iran: Implication for Zoonosis Transmission (2015)

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Background and Aim: *Cryptosporidium* is one of the important zoonotic parasitic disease that infect a wide variety of mammal and bird species. However, limit information is available about prevalence of *Cryptosporidium* spp. in camel hosts in Iran. **Aim of this study** is detection of *Cryptosporidium* spp. in camels of Ardabil province: implication for zoonosis transmission (2015). **Material and Methods:** In this study 42 samples were collected from camels (20 samples from Bactrian camels and 22 samples from *Camelus dromedarius*) of Ardabil province. The Samples were kept in a 5% solution of potassium dichromate. After the samples were transported to the laboratory, the samples to be smooth with using two layers of sterile gauza that removed the additional materials and grasses until to obtain smooth stool of samples. In the next step we strew some of the samples on the lam after the samples were deried on the lam we fix them with methanol and then the samples were stained (colored) with modified Ziehl-Neelsen. In the final step, we detected microscopically painted samples. **Results:** Totally from 20 Two-Hump camel samples, 14 samples (70%) were found to be infected *Cryptosporidium* and from 22 One-Hump camel samples, 22 samples (100%) were found to be infected *Cryptosporidium*. **Conclusion:** Since the *Cryptosporidium* is parasitic and opportunities disease and on the other side because the camels living near the human so there is a possibility of human infection and zoonotic disease.

Keywords: *Cryptosporidium*, Camels, Detection



P147

Antibacterial Effects of Piperacillin/Gentamicin and Imipenem/Gentamicin against Resistant Isolates of Pseudomonas Aeruginosa

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Introduction: The combined treatments prevent rapid and multiple resistances in nosocomial infections associated with *Pseudomonas aeruginosa* by providing higher antibacterial effects. **The purpose and importance of the study:** The aim of this study was to evaluate the antibacterial effects of Piperacillin/Gentamicin and Imipenem/Gentamicin compounds against resistant isolates of *Pseudomonas aeruginosa*. **Method:** Antibacterial effects of Piperacillin/Gentamicin and Imipenem/Gentamicin compounds against 30 resistant isolates and 10 sensitive isolates of *Pseudomonas aeruginosa* were measured using disk diffusion agar and microdilution broth techniques and analyzed as the single dose and in combination. **Results:** Fifteen percent of resistant isolates were treated by Piperacillin/Gentamicin were able to show complete or partial synergistic effects while only 0.16% (one sample) of the resistant isolates presented partial synergistic effects against Imipenem/Gentamicin. Most of the resistant isolates (77%) presented different effects and did not show any additive effect. On the other hand, almost 27% of the resistant isolates showed antagonistic effects to the antibacterial compounds tested. **Conclusion:** The results of this study while confirming the previous comments present a rapid growth of resistance to the standard antibiotics in *Pseudomonas aeruginosa*. While combination therapy such as Imipenem/Gentamicin or Piperacillin/Gentamicin could be one of the best strategies resulting in the dramatic reduction of resistance to antibacterial agents.

Keywords: Imipenem/Gentamicin, Piperacillin/Gentamicin, *Pseudomonas Aeruginosa*

P148

The Study Used Antibiotic Resistance in E. coli Urine Culture Samples Patients Zanjan Farabi Laboratory Clinic in 2015

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Introduction: *E. coli* is one of important causes of illness in children, elderly and people with weakened immune systems in the developing countries This Bacterial Agent several illness such as sepsis, UTIs, meningitis, gastroenteritis. **The purpose of this study** was to evaluate the antibiotic resistance of *Escherichia coli* urine culture sample used in Zanjan Farabi laboratory Clinic to achieve rapid and appropriate treatment information for patients **Methods:** This cross-sectional study was conducted in 2015 in Zanjan Farabi laboratory Clinic. Between 1606 urine samples were evaluated by bacteriological tests of 143 samples were infected with bacteria *E. coli*. The antibiotic resistance *E. coli* strains were assessed disk diffusion method and then the data were analyzed by software spss18. **Results:** Among the samples that were obtained in 143 patients (%0/089) and *Escherichia coli* by testing for microbiological and chemical isolated and then from 10 antibiotics that were used Amikacin (AN) %0/02 and Nitrofurantoin (FN) %0/03, the lowest resistance and the highest resistance Co-trimoxazole (SXT) %58 and Ampicillin nalidixic acid (NA) %43. **Conclusion:** According to a study was conducted antibiotics in the treatment of disease caused by the *E. coli*, which can be used have been successfully Amikacin (AN) and Nitrofurantoin (FN).

Keywords: Urine Culture, *Escherichia Coli*, Antibiotic Resistance, Zanjan Farabi Laboratory Clinic



P149

Molecular Diagnosis and Identification of Causative Agent of Cutaneous Leishmaniasis in Mosyan (Ilam Province South West Iran)

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Introduction: Cutaneous leishmaniasis is one of most important parasitic disease in Iran. Disease in Ilam province (southwest of Iran) specially in Mosyan a burden region create great hygienic problems for inhabitant and passengers **Aim:** The aim of this study was recognition of demographic criteria and molecular identification of leishmania isolated from patients referred to mosyan health centers with polymerase chain reaction. **Materials and methods:** A total of 117 samples in 92-91 years were collected with demopheraphic data. All the smears stained with Gimsa staining and graded based on parasite frequency after microscopic examination. DNA from samples extracted and molecular analyseis performed by using NESTED-PCR and sequencing methods. All data were analyzed using SPSS software. **Results:** The results showed that patients in the study were 89% male and 11% female. The most frequent disease was in the age group of 24- 15 years. The most affected organs were hands (50.4 %), and feet 37% respectively. Molecular analysis showed that all cases are related to Leishmania major. Results of Nested-PCR confirm by sequencing method. Leishmania major is endemic in Mosyan ilam (southwest Iran). The results presented in this study shows that the genetic characteristics of the parasite has Important role in the incidence of clinical signs, pathogenesis and epidemiology of leishmaniasis. These findings will be more complete by additional studies for Causative agents identification of disease reservoirs and vectors.

Keywords: Cutaneous Leishmaniasis, Identification, Iran

P150

The Study Used Antibiotic Resistance in Staphylococcus Epidermidis Urine Culture Samples Patients Zanjan Farabi Laboratory Clinic in 2015

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Introduction: Staphylococcus epidermidis gram-positive cocci and an opportunist pathogen for the replacement the foreign bodies such as intravascular catheters, cerebrospinal fluid shunts and prosthetic heart valves is. Staphylococcus epidermidis is a member of coagulase-negative staphylococci (CONS) and is the most common blood culture isolate. The purpose of this study was to evaluate antibiotic resistance sample Staphylococcus epidermidis used in urine culture Zanjan Farabi laboratory Clinic patients in order to achieve rapid and appropriate treatment information for patients. **Methods:** This cross-sectional study was conducted in 2015 in culture Zanjan Farabi laboratory. Between 1606 blood samples were evaluated by bacteriological tests of 30 samples were infected with bacteria: Staphylococcus epidermidis. The antibiotic resistance Staphylococcus epidermidis strains were assessed disk diffusion method and then the data were analyzed by software spss18 by chi-square test. **Results:** Among the samples that were obtained in 30 patients (%0/018) and Staphylococcus epidermidis by testing for microbiological and chemical isolated and then from 8 antibiotics that were used Cefixime (%0/012), ceftazidime (%0/009), cefuroxime, highest resistance and Novobiocin (%0/016), Vancomycin (%0/013), had the highest sensitivity. **Conclusion:** According to a study was conducted antibiotics in the treatment of urine infection caused by Staphylococcus epidermidis are more appropriate Novobiocin, vancomycin are cephalotin.

Keywords: Urine Culture, Staphylococcus Epidermidis, Antibiotic Resistance, Zanjan Farabi Laboratory Clinic

P151

Investigation of IgG and IgM Antibodies against *Toxoplasma Gondii* among Diabetic Patients

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Background: *Toxoplasma gondii* is an important opportunistic parasite in immunocompromised people. Diabetic patients have an increased susceptibility to protean infections. The aim of the current study was to determine the serum levels of toxoplasma antibodies in diabetic patients. **Patients and Methods:** In this cross-sectional study, 205 serum samples were collected from diabetic patients referred to diabetes center in Ali Asghar Hospital in Zahedan (southeastern Iran). We evaluated the levels of IgG and IgM antibodies against *T. gondii* in the patients' sera using the Enzyme-Linked Immunosorbent Assay. **Results:** A total of 205 blood samples obtained from diabetic patients (42 men and 163 women with age range 13 - 60 years) were examined for the presence of toxoplasma antibodies. Among patients, 60 cases (29.3%) were seronegative and 145 patients (70.7%) were seropositive, included 53.145 (36.6%) (IgG+, IgM+) acute phase, 72.145 (49.6%) (IgG+, IgM-) chronic phase and 20.145 (13.8%) (IgG-, IgM+) false positive. The relationship between diabetes and toxoplasmosis was evaluated using the chi-square test ($P < 0.05$). The difference between age, gender, meat consumption, Fasting Blood Sugar (FBS) and the presence of toxoplasma antibodies was statistically significant ($P < 0.05$). There was no relation between optical disease and abortion with infection. The highest seroprevalence rate of *T. gondii* IgM and IgG antibodies was observed in the group of women. **Conclusions:** Diabetes and consumption of half-cooked meats increase the chance of toxoplasmosis. Thus, it is recommended to study the serum level of antibodies against toxoplasmosis in diabetic patients and repeat it periodically.

Keywords: Diabetes Mellitus, *Toxoplasma*, ELISA, IgG, IgM

P152

The Prevalence of Salmonella in 38 Thousand Samples Collected from Workers In Food Supply and Distribution Centers

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Introduction and objectives: salmonella is the most important causes of gastroenteritis and one of the major causes of human diseases associated with the consumption of food. A number of cases could be permanent or temporary carriers of bacteria in the digestive system and it's carrying. Employed carriers in food supply and distribution centers increases the risk of spreading the disease to society. The aim of this study was to evaluate the prevalence of Salmonella among those who work in food production and distribution centers **Materials and Methods:** The study is done from 1391 to 1394 in the SHahid GHodsi health center of Mashhad. In this study Stool cultures were performed on 38 thousand fecal samples collected from people who worked in the food supply and distribution centers. All samples enriched in selenite F and GN broth and cultured on appropriate culture media including Mac Conkey, SS and XLD agar and organisms were identified using biochemical tests and antisera methods. **The results:** Of 38 thousand Stool cultures, 61 samples were positive for Salmonella non typhi **Conclusion:** The results showed that the prevalence of salmonella in this study was 0.16% that show a lower prevalence compare to previous studies in Iran. But with regards to the potential risk for community is essential to improve the knowledge of Workers in these jobs

Keywords: Salmonella, Salmonella Carriers, Workers in Food Supply and Distribution Centers



P153

Comparison the Results of External Quality Control of Antibiotic Discs in Clinical Labs of Health Center of Mashhad University of Medical Sciences

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Introduction and Objectives: The discovery of antibiotics revolutionised the management of infectious diseases. However, the Resistance to a variety of antimicrobial agents is emerging in bacterial pathogens throughout the world. Consequently, it is now imperative for clinical labs to provide clinicians with accurate information required for selecting antibiotics. The choice method for in vitro antimicrobial susceptibility test is still the disc diffusion method that has been recommended by the CLSI and WHO. This study aimed to Control the Quality of antimicrobial discs applied in clinical labs of health center of Mashhad University of Medical Sciences **Materials and Methods:** Three standard strains of Escherichia coli (ATCC 25922), Pseudomonas aeruginosa (ATCC 27853) and Staphylococcus aureus (ATCC 25923) were tested for their sensitivity to 5 different antibiotics as per CLSI guidelines. Antibiotics discs with identical potency, from Padtan Teb company were used for testing sensitivity and Mueller-Hinton agar medium was used for growing the isolates. The reproducibility of each antimicrobial discs was checked by repeating antibiotic sensitivity testing 20 times and per cent coefficient of variation (%CV) was calculated. **Results:** Contrary to expectation, the obtained diameter of inhibition zone from some of labs, was different from the standard strains and also the CV were different at various labs. **Conclusion:** This study show that in some of labs, Reproducibility was unsatisfactory (per cent CV for a disc was more than 5%). Discordant results show that routine and regular quality control of discs is strongly essential in clinical laboratories

Keywords: Antibiotic Discs, Quality Control, CLSI Guidelines

P154

The Prevalence of Gram Negative Bacilli Isolated from the Equipment and Surfaces in Hospital, West of Golestan

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Background & objectives: Nosocomial infections due to mortality and economic cost, are one of the causes of mortality in hospitalized patients. Gram-negative bacilli infections acquired in hospitals and hospital environment is one of the most important places of residence and publication of this type of bacteria. This study aimed to investigate the prevalence of gram-negative bacilli from the equipment of hospital in West of Golestan, 2015. **Methods and Materials:** This Descriptive study was carried out on 1210 devices and equipments used in various wards of 7 teaching hospitals of Golestan province. Identification of the isolated colonies were based on biochemical standard tests. **Results:** 352 positive microbial cultures (29.1%) were for the presence of gram-negative bacilli. The highest bacterial contamination is related to Enterobacter (10.7%). The among different hospital wards highest bacterial contamination is related to ICU (19.32%). The equipment under test, the highest contamination is related to laryngoscope blades (10.51%), phone (7.1%) and ECG sensor device and the monitoring interface (6.25%). **Conclusion:** The findings of this research showed that microbial contamination with gram-negative bacilli of hospitals equipment is high in West of Golestan. Periodic assessments can be effective in the prevention of nosocomial infections.

Keywords: Gram Negative Bacilli, Nosocomial Infection, Hospital Equipments

P155

Effect of Prebiotic Composition on Viability of Probiotic Bacteria Bifidobacter Lactic and Lactobucillus Acidophilus in Cheese Pasteurized

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The aim of this study was to investigate the effect of the prebiotic inulin, Lactalose and Galactooligosacharide mixed on the viability of probiotic bacteria include Lactobacillus acidophilus and Bifidobacter lactic in cheese pasteurized. To achieve the goal of prebiotic compounds listed, respectively, in quantities of 0.4%, 0.6% and 1.6% and probiotic cultures 10⁹ cfu / ml at a rate of 0.01 and 0.1% were added separately and mixed with pasteurized cheese so that the bacteria count receipt at 60 days maintenance in intervals of 1, 15, 30, 45 and 60 to a multiple of 10⁷ cfu / ml. Then physico-chemical characteristics were investigated such as pH, moisture, protein, fat and sensory evaluation. The number of live bacteria in all samples up to 45 days to make maintenance more beneficial effects on human health as Speciality products. In all the samples during ripening, pH reduction and increased acidity and salt. But the percentage of fat and solid were not changes. Time sensory evaluation treatment of dry matter 1.6 % taste won best Score.

Keywords: Probiotic, Prebiotic, Cheese, Lactobucillus Acidofilus, Bifidu Bacter Lactic

P156

The Synergistic Effect of the Salvia Hypoleuca Extract and Antibiotics on Escherichia Coli Isolates from Urinary Tract Infection

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Background: In recent year, different studies have reported the efficacy of antimicrobial agents can be improved by combining them with plant extracts against several pathogens including E. coli. In this study, we evaluated the synergistic activity of Saliva hypoleuca extract and commonly used antibiotics against isolated uropathogenic E. coli collected from patients. Methods: In this experimental study, first the minimum inhibitory concentrations (MIC) of methanol extraction of Saliva hypoleuca were determined by the tube dilution method. Eight Commonly used antimicrobial agents were assessed for combination effect. Antibiotic sensitivity of all collected samples was evaluated against eight antimicrobial agents alone and by combining with Saliva hypoleuca extract by disk diffusion method. Results: The results of the conducted experiments using disc diffusion method demonstrated that this plant showed in vitro interactions between antimicrobial agents and plant extracts against the tested isolated E. coli. Conclusion: The antibacterial activity of Saliva hypoleuca extract against E.coli isolates was confirmed and synergistic activity of extract of Saliva hypoleuca and tested antibiotics could suggest an alternative manner to overcome a problem of bacterial resistant.

Keywords: Antibacterial Activity, Synergistic Effect, Salvia, Plant Extracts



P157

An Epidemiology Survey on Candida Species Isolated from Vulvovaginitis Suspected Vaginal Samples

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Background Vulvovaginal candidiasis is a very common infection caused by Candida species as opportunistic yeasts affecting over 50% women at least once in their lifetime. Chrom agar Candida is increasingly being reported as a medium used to differentiate Candida albicans from non-albicans Candida (NAC) species. Rapid identification of NAC can assist the clinician in selecting appropriate antifungal therapy. We follow-through this study to determine epidemiology and pathogenesis of this infection, and also discuss management strategies. Methods 780 suspected Sample of women with gynecology disorder were collected and smear slides was prepared. 240 patients with culture-confirmed symptomatic vulvovaginal candidiasis. Recovered yeasts were then streaked for isolation onto Sabouraud dextrose agar plates and incubated at 30°C for 24–48 hours and subcultured a second time prior to inoculation in duplicate onto prepared CHROMagar Candida plates. Inoculated plates were incubated in parallel at 30°C and 37°C for 7 days. Used chromogenic medium allowing the presumptive identification of Candida species. Results: Among whole 4000 referred women to gynecology clinics Positive samples were 0.06% rate of Candidal infection. While infection index was 30.76% within symptomatic samples. Presumptive identification of C. albicans, C. glabrata, C. tropicalis, C. krusei and C. parapsilosis on chromogenic medium was respectively; 72.5% (174), 16.25% (39), 6.25% (15), 4.16% (10), 0.83% (2) based on color and shape of the colonies, almost correspond previous reports. Conclusion C. albicans was still the most frequent species involved in either sporadic and recurrent VVC, followed by C. glabrata. Infection rate of NAC Species determine their pathogenicity trend. For example C. tropicalis and C. glabrata rates was more than reported index. With considering inherent resistance of some species to antifungal drugs, Azole susceptibility tests is recommend to better understand the correlation between profile and response to treatment.

Keywords: Candida spp, Vulvovaginal Candidiasis, CHROM Agar Medium

P158

High Resistance of Sporothrix Schenckii Complex to Three Azolic Antifungal Drugs

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Background: Sporotrichosis is a wide spread subcutaneous mycotic infection caused by members of the Sporothrix schenckii complex. Aims & purposes: The aim of this study was to investigate the susceptibility of isolates of the Sporothrix schenckii complex to the voriconazole, fluconazole and itraconazole. Materials & methods: Five isolates of the Sporothrix schenckii, four isolates of the Sporothrix globosa, and two standard strains of Candida parapsilosis ATCC 22019, and Candida krusei 6258 as quality control strains were included in the present study. Drug stock solution, serial dilutions, and fungal suspensions were prepared according to the clinical laboratory standards institute (CLS) M38-A2 document. Results: The reliability of our results was confirmed by the minimum inhibitory (MIC) values of two standard strains. The MIC range and geometric mean of the fluconazole were 64->64 µg/ml and >64 µg/ml against isolates of the S. schenckii and 32->64 µg/ml respectively and >64 µg/ml against isolates of the S. globosa. The geometric mean values of Voriconazole against strains of S. schenckii and S. globosa were >16 µg/ml and 16 µg/ml, respectively. Also three strains of S. globosa had MIC values ≥4 µg/ml. Discussion and conclusion: High MIC values of studied isolates to fluconazole and voriconazole reveals lack of activity of these drugs against this fungal complex. Also resistance to first line drug of sporotrichosis (itraconazole) was observed in three isolates.

Keywords: Sporothrix Schenckii, Sporothrix Globosa, Antifungal Agent

P159

Antibacterial Activity of Methanolic Punica Granatum (Pomegranate) Peel Extract against Oral Bacteria

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Background and Aim: Medical herbs with anti microbial activity have always been important in traditional medicine and might be useful in the control of adherence of different bacteria in the oral cavity. Thus, search of effective Medical herbs for this control, reducing pathogenic dental bacteria are necessary. The aim of this study was to determine the antibacterial activity of methanolic extract from peel of Punica granatum (Pomegranate) against some oral bacteria in vitro **Methods:** At first a sample of methanolic extract of peel of Punica granatum was prepare in three different concentrations at 4 mg/ml, 8 mg/ml, 12 mg/ml and then its antibacterial activity against 5 standard strain bacteria (Lactobacillus acidophilus, Streptococcus mutans, Strep. salivarius Strep. sanguis and Strep. mitis) was tested for the determination of MIC (minimum inhibitory concentration) using well diffusion and agar serial dilution assays. Also the antibacterial activity of Vancomycin antibiotic was tested by the disk diffusion method **Results:** Statistical methods were using to analyze the data. The results demonstrated that the Punica granatum methanolic extract been effective against all of the 5 standard strain bacteria. The MIC for L. acidophilus, Strep. mutans and Strep. salivarius were 8 mg/ml. Strep. mutans was sensitive to Vancomycin **Conclusion:** This study demonstrates that a methanolic extract of Punica granatum have excellent anti bacterial activity against the 5 standard strain oral bacteria. These results suggest that pomegranate methanolic extract might be useful in the control of adherence of different bacteria in the oral cavity. Further investigations will be necessary.

Keywords: Oral Bacteria, Antibacterial Activity, Punica Granatum

P160

The Roles of Host and Pathogen Factors and the Immune Response in the Pathogenesis of Clostridium Difficile Infection; Review of the Evidence

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Introduction: Clostridium difficile infection (CDI) is the most common infectious cause of healthcare-acquired diarrhea, and the etiological agent of pseudomembranous colitis. The most puzzling aspects of CDI is the wide spectrum of clinical presentation which ranges from asymptomatic carriage, to mild self-limiting diarrhea.severe colitis occurs due to interplay between the Clostridium virulence factors and the host immune responses. **Method and Material:** For this review, we explored published papers in English, from November 2002 to August 2014. Among 114 published articles about clostridium, 43 papers were reviewed. **Results:** Recent studies suggest that the change of the intestinal microbiota and impaired innate immunity may play a important role in the development of CDI. C. difficile expresses two key virulence factors; the exotoxins (toxin A, toxin B) and C. difficile transferase. Some studies showed that toxin A and B led to Rho inactivation, release of inflammatory mediators (such as IL-12, IL-18, IFN- γ , IL-1 β , TNF- α , MIP-1 α , MIP-2, IL-8, and leptin), activation of surface and intracellular innate immune sensors (inflammasome,TLR4, TLR5, NOD1 signaling pathways). Antibodies to C. difficile toxins are present in up to 60% of healthy adults and older children. **Conclusion:** Recent advances in our understanding of the molecular basis of host immune protection against CDI may provide an exciting opportunity for novel therapeutic developments in the future. Further work is needed in this area to guide the clinical application of new approaches to disease prevention and treatment, including new antimicrobials as well as passive and active immunization.

Keywords: C.difficile, Immune Responses, Toxin



P161

The Study of Antibiotic Resistance Pattern among Children Infected by Enteric *Escherichia coli*

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Introduction Resistance to antibiotics is a main health problem in last decades and causing alot of problems for infections treatment. Especially, drug administration without antibiogram tests enhances the problem. **Objectives:** The aims are assessing prevalence of resistance to antimicrobial agents in microbiology lab, and correlation with demographic variables like age, gender, socio- economic factors. **Material and methods** In a cross sectional study in March 2014 to march 2015, we examined 580 stool specimen of 5 to 14 years old children. The resistance patterns were compared with age and gender. Standard microbiological methods were used to culture and antibiogram tests. All information were analyzed by SPSS and chi square softwares. **Results:** The findings revealed that in 32 positive cases, 20(62.5%) *Escherichia coli*, 6(18.75%) *Proteus mirabilis* and 6 (18.75%) *Shigella sonnei* were the most common bacteria who isolated. The rate of resistantancy for *E.coli* were, ciprofloxacin (10%), tetracycline (60%), ampicillin (70%), sulfamethoxazole/trimethoprim (40%) and amoxicillin/clavulanic acid (30%). There was no significant correlation between resistance and age or gender ($P>0.05$ %). But the most of resistance cases were seen in children with low educated mothers ($P<0.05$). **Conclusion:** Findings demonstrated the remarkable resistance rate for antimicrobial agents. Results were similar to the other studies but for *E coli*, there was a big resistance to tetracycline and ampicillin. We suggest using antibiotics after antibiogram test and Educational plans for physicians and patients.

Keywords: *E coli*, Antibiogram, Antibiotic Resistance

P162

Frequency of Adhesive Virulence Factors in Carbapenemase-Producing *Acinetobacter Baumannii* Isolated from Clinical Samples in West of Iran

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Background: *Acinetobacter baumannii* is a significant opportunistic pathogen which causes severe infections related to catheters and ventilator. Adhesive virulence factors (VFs) are effective in *Acinetobacter baumannii* adherence and pathogenicity. The aim of this study is to evaluate frequency of adhesive virulence factors in carbapenemase-producing *A.baumannii*. **Materials and Methods:** In total, 104 *Acinetobacter baumannii* were collected from teaching hospitals of Kermanshah, Iran during March 2011 to March 2013. All the isolates were tested for antimicrobial susceptibility by Kirby-Bauer disk diffusion method. Carbapenemase-producing isolates were identified, DNA of isolates were extracted by boiling and were investigated for the presence of adhesive virulence factors by PCR. **Results:** Among 50 carbapenemase-producing isolates, frequency of *fimH* and *csgA* genes obtained 30(60%) and 27(54%), respectively. 20(40%) isolates carried both of *fimH* and *csgA* but 13(26%) carried none of these two genes. None of these isolates presented genes codifying for other different adhesive virulence factors include fimbriae Dr (*afa/draBC*), fimbriae S (*sfa/focDE*), fimbriae P (*pap*), capsule (*kpsMT*), fibronectin receptor (*fnb*). **Conclusions:** adhesive virulence factors are responsible for pathogenesis of bacteria. As adhesive VFs, fimbriae type I (*fimH*) and curli fiber (*csgA*) are participated in adherence and biofilm formation and give bacteria the ability to be hidden of host immune system and then causing infections. More than 50 % prevalence of *fimH* and *csgA* genes among 7 adhesive VFs studied in this research shows that maybe there is a significant relationship between the presence of *fimH* and *csgA* genes and *A.baumannii* infections.

Keywords: *Acinetobacter Baumannii*, Virulence Factors, Carbapenemase-Producing, Adhesive

P163

Determination of Methicillin-Resistant Staphylococcus Aureus Frequency's in Hospitals of Urmia Using Molecular Method

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Introduction: Among Hospital and community-acquired bacterial infections, methicillin-resistant *Staphylococcus aureus* (MRSA), has higher frequency which it can sometimes be caused deaths among the patients. Necessities for rapid identification and appropriate antimicrobial therapy, encouraged us to determination of the frequency of MRSA by PCR in Urmia University Hospitals. **Metode:** In this study, 150 *S. aureus* isolates from different clinical specimens which referred to the laboratories of Urmia hospitals, were collected using standard microbial tests. After that, Antibiotics susceptibility pattern of the isolates has been determined using disk diffusion method as recommended by CLSI (2014). Multiplex PCR was performed on all isolates for the simultaneous detection of *mecA*, genus and species specific genes. **Results:** Of 150 isolates, 86 (57.3%) strains were screened as MRSA using cefoxitin disk. Multiplex PCR also confirmed the presence of *mecA* in these strains. **Conclusion:** Since the most of MRSA strains are multiple drug resistant to different of antibiotics, it is necessary to timely identify them, to prevent of spreading this type of resistance.

Keywords: *Staphylococcus Aureus*, PCR, *mecA*

P164

The Effect of Helicobacter Pylori Infection on Gastric Juice Nitric Oxide Levels in Sufferers from Peptic Ulcers in Tabriz City

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Helicobacter Pylori are gram-negative, helical- or spiral-shaped, microaerophilic bacteria, the length of which measures about one thousandth millimeter. *H. Pylori* are the most prevalent cause of infection throughout the world. And it is also considered to be the agent of gastric-intestine system diseases. In this study, gastric juice nitric oxide levels were examined to study the oxidative stress in *H. Pylori* infection.

Keywords: *Helicobacter Pylori*, Nitric Oxide, Active Peptic Ulcer, Gastric Juice



P165

Molecular Detection of Microsporidia SPP in Equines of Ardabil Province: Implication for Zoonosis Significance (2015)

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Introduction: This parasite has created many infections among most of animals and recently is recognized as zoonosis especially effective infection for patients having AIDS. At the present time Microsporidia is very common among patients having AIDS and is very rare among persons with natural immune system. **Methodology:** In this study, the sample was taken from equines and donkeys of Ardabil province and in some 71 samples (34 samples of equines and 37 samples of donkey) were collected and the samples were maintained at 5% Potassium dichromate. Upon sending the samples to the laboratory, they gone under sift with 2 layers of gauze. In the next stage, some of the samples gone under sift was poured on smear and after the samples were dried on smear, they were fixed with methanol and then samples were gone under Ziehl-Neelsen Stain and finally microscopic diagnosis of stained samples were performed. **Results:** Among 34 equines gone under study by nested PCR method, 4 samples were infected with Microsporidia and 37 samples of donkey gone under study by nested PCR method were infected with Microsporidia. **Discussion:** Whereas Microsporidia is a pathogenic and opportunist parasite and on the other hand with respect to this fact that equine and donkey due to adjacency with human life, there is high probability for these 2 animals for being a reservoir for zoonosis infection.

Keywords: Microsporidia, Equine, Nested PCR

P166

Detection of Point Mutation in GyrA and par C Genes of Chlamydia Trachomatis Induced Resistance to Quinolones Isolated from Iranian Women

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Introduction: Drug resistance has an increasing level in the world, studies about drug resistance of chlamydia trachomatis are spars. .point mutation in genes encoding DNA gyrase and Topoisomerase could produce enzymes which become resistance to quinolones which are used for treatment of chlamydia, the aim of this study was to investigate the resistance strain of chlamydia trachomatis to quinolones among iranian women with recurrent genital infections. **Materials and Methods:** 300 iranian women with vaginal discharge and history of recurrent infection were enrolled, specimens collected with Dacron Swab and 2SP medium, after DNA extraction, Nested PCR were performed. amplification of gyrA and par C genes were done for specimen which recognized as chlamydia ,the sequence of amplified gene were determine and by translate to protein, mutation of amino acid were detected. **results:** from 300 specimen ,95 cases were recognized as chlamydia trachomatis.after amplification and sequencung, The main mutation were: AA 86 serine to leucin, AA 93 prolin to deletion ,AA 130 threonine to proline, AA 130 threonine to valine,AA 131 Serine to valine, AA132serine to valine,AA134treonine to proline, AA 135 sisteine to serine.and parC gene wereAA94treonine to Alanine,AA80serine to Argenine **Discussion:**there are point mutation in gyrA and parC genes which reffer to having resistant strain to quinolones. we conclude that prescription of antibiotics without culture and antibiogram or without using molecular methods could product resistant strains of chlamydia to antibiotic so it is better to use culture or molecular methods for correct diagnosis and treatment.

Keywords: Chlamydia Trachomatis, Quinolone Resistance, gyrA Gene, Parc Gene



P167

Evaluation Antiviral Effects of Chelidonium Majus Extract Compared with Acyclovir against Herpes Simplex Virus Type 1 in Hela Cell Culture

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Majors: Herpes simplex virus type1 (HSV-1) may lead to oral herpes,keratoconjunctivitis and even encephalitis. There are different kinds of medicine to treat the infection of this virus and the acyclovir is one of them. Nowadays due to medical resistance, the need of more researching in order to finding new medicines has been increased. In this study antiviral effect of chelidonium majus methanol extract was evaluated in comparison with acyclovir against HSV in HeLa cell culture. **Material and Methods:** The toxicity of chelidonium majus methanol extract and acyclovir on HeLa cell was determined with both two MTT and Trypan blue methods. Then their direct antiviral effect was evaluated against HSV-1. In addition, the antiviral effect of this extract and acyclovir was inspected in different concentration and also several times of virus replication. The virus titer was measured by TCID50 method. The T-TEST statical method was used to comparing the effects of both two compounds on virus. **Results:** The non-toxic concentration of chelidonium majus extract on HeLa cell was equaled to 1600µg/ml that has the maximum restraining effect on HSV-1 replication. The 30µg/ml concentration of acyclovir was determined as sympathy for the next steps of the study. The highest inhibitory effect of the extract was observed 1hour after absorption and the virus was restrained by the acyclovir after cells infection up to 8 hours. **Conclusion:** As a result, the chelidonium majus methanol extract has less effect than the acyclovir in bridle of HSV in a first few hours of infection. It is clear that, more research is needed to achieve effective compounds with antiviral activity of above extract.

Keywords: Chelidonium Majus, Acyclovir, Herpes Simplex Virus Type 1, HeLa Cell

P168

The Relationship between Toxoplasmosis Infection and Serum Levels of Testosterone, Vitamin D3 Serum and Lipid Profile

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Introduction: Toxoplasmosis is a disease that results from infection with intracellular parasite *Toxoplasma gondii* caused. *Toxoplasma* infection is often asymptomatic, Statistically, people with weak immune systems can have severe side effects. Epidemiological studies toxoplasmosis in policy and preventive health education programs is important. **Materials and methods:** The study population consisted of two group, people with acute toxoplasmosis and controls. 5 ml of blood were taken from all subjects. Serum is then isolated in the freezer. Biochemical tests for cholesterol, triglycerides, HDL and LDL classic alpha tested by alpha classic autoanalyzer. Testosterone and vitamin D3 and toxoplasma (IgG) and (IgM) were tested by ELISA. **Results and discussion:** The results showed that in patients with active toxoplasmosis vitamin D and HDL cholesterol levels were lower than control group, The active infection was higher in men and people under age 30 have higher titers of IgG and IgM antibodies to *Toxoplasma*. Statistically, people over 30 years who have an active infection cholesterol and LDL are higher. The national committee for the unification of standards and test methods for the laboratory diagnosis of acute toxoplasmosis all over the country is needed.

Keywords: Toxoplasmosis, Vitamind, Testosterone, Lipid Profile



P169

Antibiotic Resistance Genes in CTX-M ESBL-Producing *E. coli* by PCR

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Background: *Escherichia coli* due to the acquisition of ESBL-encoding plasmids that are resistant to beta-lactam antibiotics. So, according to the lack of studies to identify genes CTX-M (Cefotaxim-M) gene in the hospital and region phenotype and genotype was evaluated. **Methods:** This cross-sectional study in the third and fourth quarter of 2014 on 1842 urine samples were admitted to hospital Yahyanejad and bacterial resistance to antibiotics by disk diffusion method for antibiotic resistant. Isolated antibiotics cefotaxime-clavulanic and ceftazidime combined with a confirmatory test drive reviews - Clavulanic acid were investigated. Then strains produced ESBL genes by Real Time-PCR CTXM were investigated. software program SPSS Versen 20 reviews results obtained by analysis was. **Results:** Of the total sample of patients, 84 isolates of *E. coli* isolates, the most sensitive to, meropenem 96/4%, ampicillin sulbactam 95/2%, piperacillin-tazobactam 94/5%, amikacin 91/6% of resistance in order to nalidixic acid 83%, doxycycline 70%, ciprofloxacin 51/2%, ceftriaxone 46.6% is and 34.5% of isolates 29 were produced ESBL. CTX-M beta-lactamase gene in *Escherichia coli* was 69% positive phenotype. A significant relationship between the presence of ESBL genes were CTX-M. $P < 0.003$. **Conclusion:** The results of this study, genes CTX-M ESBL producing *E. coli* In strain this high prevalence area that shows the necessity of controlling and monitoring the use of antibiotics. Considering the presence of CTX-M gene in a high percentage of pathogenic bacteria strains more genotypes and phenotypic studies in this area is essential.

Keywords: *Escherichia Coli*, Resistance Patterns, Antibiotic Resistance, A Wide Spectrum Beta-Lactamase (ESBL), Gene CTX-M, Polymerase Chain Reaction (PCR)

P170

Medical Microbiology Lab Errors and Prevention Methods

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Background and purpose: In view of increasing attention focused on patient safety and the need to reduce microbiology laboratory errors, it is important that we know errors in microbiology lab and their prevention methods to we reported to the nearest respond to answer of test, in this review article, we have tried to earn a common opinion and conclusions reached in this regard. **Methods:** The study reviewed data obtained with key words: Error, Microbiology Laboratory Medicine, Method, Preventing with search for articles and book published in Pubmed, Iranmedex, Google Scholar. **Result:** microbiology laboratory error can occur in three stages. In the pre-analytical sample quality, volume ... upon arrival to the microbiology laboratory is important, at this stage the most common error is improper labeling that uses advanced technology to decrease. The analytical error include errors dilution, painting, distribution (effect of counting), diagnostic errors, use of inappropriate materials, errors in chemical analysis, colony morphology and incorrect assessment and etc. This step requires a quality control and this step is important as well as the effects of environmental conditions (temperature, time, storage ...). Because microorganisms are sensitive to these issues. If sample processing is delayed strict adherence to the rules is very essential. The post-analytical errors usually electronic reporting is greatly reduced. **Conclusion:** Any error in the microbiology laboratory, can completely change the course of treatment .Unfortunately, painful things is that most errors can be prevented. Most errors with sufficient knowledge, precision and work ethic are preventable.

Keywords: Error, Microbiology Laboratory Medicine, Method, Preventing

P171

The Molecular Method in Diagnosis of Ocular Toxoplasmosis in Some Major Ophthalmic Centers in Tehran

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Toxoplasma gondii is an opportunistic infection. The parasite causes chorioretinitis. The posterior pole scars persist a serious threat. Other symptoms consist of blurred vision, photophobia, vitreous inflammation etc. Molecular methods are complementary for recognition. The aim is to evaluate efficiency of molecular method in isolation of T. gondii. Method: Blood sampling had done. For examining possible relapse, re-sampling was done in 15 and 30 days. Thereafter, the buffy coat was employed for DNA extraction. For performing the PCR, primer of the gene B1 was applied. Results: From the 71 samples, 34 patients (47%) had positive form of the disease. However, evaluating the first relapse, two weeks after the first step of the disease, among the 41 patients, 29 (70%) had positive reaction of the disease. These patients showed positive PCR in the first step. In the third step (30 days later), from 19 patients, 9 (47%) had positive reaction. In the second and the third steps there were no incidents. Conclusion: The diagnosis relies on clinical tests. Clinical symptoms or differentiation of the disease from alternative symptoms make the diagnosis problematic. However, sensitivity and characteristic of molecular PCR is of interest. For definite diagnosis, clinical and complementary methods such as PCR can be employed.

Keywords: Ocular Toxoplasmosis, Chorioretinal Scar, Retinochoroiditis, Vitreous Inflammation, Uveitis, PCR

P172

The Study of Effects of Spirulina on Proliferation of Mesenchymal Stem Cells of Bone Marrow of Rat

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Spirulina platensis is a microalgae from cyanobacteria. It contains 51-71% of proteins, most of necessary amino acids for the human body and 7% of different kinds of lipids and vitamins. The effect of some probiotic bacteria, which are similar to S. platensis in nutritional elements, on the proliferation of endothelial cells, fibroblasts, inflammatory and mesenchymal stem cells (MSCs) have been proven in past studies. MSCs have a large application in bone and cartilage graft and repair. However, the ability of proliferation of these cells is less. We used Spirulina as an element to supply the growth factor enhancing mesenchymal stem cell's ability to proliferate. We extracted the stromal cells from Rat's bone marrow. In the second passage, they were proven as mesenchymal cell by the use of Flowcytometry and adipogenesis and osteogenesis medium. After S. platensis's culture in standard situations, the cell treatments were done with 7 logarithmic concentrations (0, 0.1, 0.3, 0.9, 3, 9, 30 µl/ml) from S. platensis's extract. MTT test was done and results were analyzed. Results from flowcytometry showed cells, which had expressed about 77% of CD90, 72% of CD105 and they differentiated to osteocytes and adipocytes medium. These evidences prove the existence of MSCs. Statistical analyzes showed a significant increase in MSCs proliferation. Maximum level of increased proliferation was in 0.9 µl/ml concentration. Since Spirulina secretes nutritional elements, its extract can be used as growth factors for enhancing the proliferation of MSCs. Therefore purified material from Spirulina's protein can be used for better results in treatment with MSCs.

Keywords: Spirulina, Mesenchymal Stem Cells, Cell Proliferation



P173

Comparison of Antibiotics Susceptibility Patterns of Methicillin Resistant and Sensitive Staphylococcus Aureus Isolated from Clinical Specimens

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Introduction: Staphylococcus aureus causes a variety of infections via gaining of resistance against routinely used antibiotics. Increase in hospital infections caused by methicillin-resistant strains have complicated treatment. This study aimed to determine antibiotic susceptibility patterns of MRSA and MSSA isolated from clinical specimens. **Methods:** In total 158 S. aureus were collected from different clinical specimens. Bacterial identification was carried out by gram stains, catalase and coagulase tests, growth in mannitol salt agar. Antibiotic susceptibility testing was performed on isolates using the disk diffusion method. MRSA strains were screened using ceftiofur (30 µg) according to the CLSI (2014) recommendation. PCR was performed as a confirmatory test for MRSA strains. **Results:** A total of 69.7% isolates were MRSA that all of them carried the mecA gene by PCR. The frequency of MSSA was 30.3%. Antibiotic susceptibility testing using disc diffusion revealed high resistance to Penicillin (100%), Erythromycin (79/2%), Tetracycline (69/4%), among MRSA strains, however resistance rates for MSSA strains were 97.6%, 14%, 46.5%, respectively. **Conclusion:** There was a correlation between resistance to methicillin and increased resistance to other antibiotics in Staphylococcus aureus isolates that the difference was remarkable among strains of MRSA and MSSA.

Keywords: Staphylococcus Aureus, Antibiogram, MRSA, MSSA

P174

Comparison of Lethal Fungal Toxins in Iran

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Objective: Iran, due to its rich geographical climates and vegetation, holds a diverse fungal flora. More than 500 species of mushrooms have been reported from Iran, 10% of which have been identified as toxic and lethal. Fungal toxins or so-called mycotoxins tend to enter the cells and distort their metabolism. **Conclusion:** In many parts of Iran, such as northern forests, Khorasan forests, Golestan, Mazandaran, Ardabil, Gilan, Azerbaijan, Zagros mountain range in Kurdistan, Hamadan, Kermanshah, Lorestan, Ilam, Kohgiluyeh and Boyer-Ahmad, Chaharmahal and Bakhtiari and Fars, the climate is favorable for mushrooms to grow most of the year. This combined with the fact that these regions are commonly visited by tourists because of their climate, increases the probability of mushroom poisoning. One of these fungi is Amanita Pantherina which can cause "Pantherina Syndrome" even with small eaten amounts. This syndrome is described by neurologic disorders, such as confusion, visual and hearing difficulties, extreme fatigue, muscular spasm and convulsion, followed by a 3-hour incubation period. This fungus has been reported from Mazandaran, Azarbaijan, Golestan and Gilan. 180 species of the genera Agrocybe, Conocybe, Gymnopilus, Galerina, Hypholoma, Inocybe, Mycena, Panaeolus, Psilocybe which contain either Psilocybin or Psilocin and have hallucinogenic qualities are also of concern. Although we have come to many advances regarding mycotoxins, many problems still lay ahead.

Keywords: Mycotoxin, Mycology, Lethal, Iran

P175

Molecular Typing of *Aspergillus Flavus* Originated from Aspergillosis Patient

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Introduction: *Aspergillus flavus* is the second most important *Aspergillus* species causing human infections in tropical countries. Despite an increasing number of infections of *A. flavus* in Iran, the molecular epidemiology of clinical strains has not been well studied. We used a panel of nine microsatellite markers to analyze the genetic relatedness of *A. flavus*. **Material and methods:** The *A. flavus* isolates were genotyped by using a recently described microsatellite typing scheme that consists of three multiplex PCRs that target each three loci. To discern the three loci within one multiplex PCR from each other the forward primers were labelled with FAM-, JOE- and HEX-fluorophores at the 5'-side. **Result:** Microsatellite typing of 119 clinical isolates demonstrated 108 different genotypes. A possible outbreak at a pulmonary ward was discovered. The discriminatory power for the individual markers ranged from 0.4812 to 0.9457 and the panel of all nine markers combined yielded a diversity index of 0.9948. **Discussion:** microsatellite typing provided excellent discriminatory power in studying the molecular epidemiology of clinical *A. flavus* isolates in Iran.

Keywords: *Aspergillus Flavus*, Molecular Typing, Aspergillosis

P176

Prevalence and Antibiotic Susceptibility Patterns of Bacteria Causing Bloodstream Infections in Valiasr Hospital in Tehran

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Background: bloodstream infections are a serious infections, which if untreated can cause increased mortality. The aim of this study was to investigate the prevalence and antibiotic susceptibility patterns of bacteria causing bloodstream infections in Valiasr hospital in Tehran. **Methods:** A total of 156 positive blood culture samples were collected during the period between 1393 to 1394, isolated and identified bacterial agents. Then antibiotic susceptibility testing by using the disk diffusion method and based on the guidelines CLSI (clinical laboratory standard institute) was performed for all isolates. Data were analyzed using SPSS 22 software. P value less than 0.05 was considered significant. **Results:** The most frequent pathogens isolated was coagulase negative Staphylococci, 51 (32.69%), *Escherichia coli* 37(23.71%), *Acinetobacter baumannii* 21 (13.46%), *Staphylococcus aureus* 18 (11.53%), *Proteus vulgaris* 12 (7.69%), *Enterobacter* 8 (5.12%), *Pseudomonas aeruginosa* 5 (3.2%) and *Citrobacter* 4 (2.56%), respectively. The highest resistance were observed to Penicillin 112 (71.79%), Ampicillin 107 (68.58%) and Ceftriaxone, 99(63.46%). **Conclusion:** Due to the high antibiotic resistance of these pathogens as well as the importance of blood infection, it is recommended that health centers and hospitals perform antibiotic susceptibility testing and treatment using effective antibiotics and start timely.

Keywords: Bloodstream Infection, Antibiotic Susceptibility, Septicemia



Laboratory and Noncommunicable Diseases (NCD) Surveillance System P177 – P192

P177

A Study of Congenital Hypothyroidism Screening Project in Kermanshah – 1393

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Summary Congenital Hypothyroidism is one of the major causes of mental retardation in children which can be prevented if treated immediately. The incidence of the disease is estimated to be 1 in 3000-4000 live births in the world, 1 in 3801 live births in Europe and according to available statistics 1 in 1000 live births in Iran. **Materials and Methods:** From Farvardin to Esfand 1392 the heel blood samples of 3-5 day old newborns, referred from all maternity wards in Kermanshah. Were collected for the first TSH level measurement and in the next step venous blood samples were taken to measure TSH and T4 levels both using ELISA method. **Results:** 35440 newborns consist of 17010 (%48) girls and 18430 (%52) boys were in the study with the following results: 35385 (%99.85) newborns → normal TSH level 55(%0.2) newborns → ab normal TSH level According to the above figures the incidence rate of Congenital Hypothyroidism is 1.6 in 1000 in kermanshah. **Conclusion:** The results indicate nearly the same incidence rate in comparison with the nationwide average rate. Regarding some delay referred cases causing a newborn to show symptoms of the disease, an effective surveillance system to check the quality of the laboratory methods seems crucial.

Keywords: Congenital Hypothyroidism, Kermanshah



P178

Prevalent Cancer Epidemiology Kermanshah Province

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Introduction The most Prevalent form of cancer in the early diagnosis increases the chance of treatment. Currently 12% of all causes of cancer deaths worldwide, and Iran is the third largest cause of death. - years 1386-1389 have been analyzed. **Methods:** This descriptive study based on data from the cancer registry has been in the years 1386-1389. Specialized statistical software for data collection and the use of cancer registry data were analyzed using SPSS software. **Results** The total number of cases of cancer of the Year (1386 - 1389) in 8054 and 3619 in the case of women (%44.9) were male and 4,435 (55.1%), respectively. The most Prevalent cancer in women in Kermanshah (Breast, Skin colon, rectum, esophagus, uterus, cervix, ovary, stomach, Liver and bile duct ,lung, bronchus, larynx, the brain, Kidney, The most common cancer in men in Kermanshah (skin, stomach, colon, rectum, prostate, esophagus lungs, bronchi and larynx ,Liver and bile duct, Kidney, brains, testes) **Conclusion** the design and implementation of programs for intervention and identification of risk factors in cancer can reduce the instances be effective mainly in third world and developing, including countries in the Eastern Mediterranean Our country 60 percent of cancers in three factors: 1 - Smoking - 2 for infection 3 - The people's lifestyle, including physical activity, diet, living environment is contaminated with chemicals It is essential to facilitate early detection of common cancers, particularly in the province of screening is more effective.

Keywords: Kermanshah, Cancer

P179

Epidemiological Study of Patients with Neonatal Hypothyroidism City Qazvin 90-94 years

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Introduction: Hypothyroidism is the main causes of mental retrain in infants. Performing screen of hypothyroidism in every community not just identify hypothyroidism infants, immediate treatment and preventing complication of permanent but also it causes to get the the important information in the areas of epidemiology And physiopathology of this disease. **Results:** From the beginning of 1390 until the end of 1393, 39270 infants were screened that the results of the evaluation of screening is as follows: - 18854 are females (48.1%) and 20416 are males (51.9%). 121 Patients infants were identified by city that the average of incidence rate during the years of the city studying is 3.1 per thousand alive births. – About Gender 37% of patients are females and 63% are males. - Of these patients 4 infants were identified as false negative (3.3%) and the initial TSH Of 4.1% of patients was below 5 – 57.9% between 9.9 to 5- 22.3% between 19.9-10-Also, 15.7% had TSH above 20. -About familial history 73.5% of parents of infants had no familial history, 10% of parents had a familial history of grade 3 and 16.5% had grade 4 - Of these patients, approximately 20% are rural and 80% are urban **Conclusion:** According to the findings, 63% of city patients were male, incidence Disease in boys is more than girls about 2 .73.5% of parents of sick infants have no familial history, the incidence disease in city is 3.1% that is more than in the country.

Keywords: Qazvin, Congenital, Hypothyroidism



P180

The Prevalence of Minor β –Thalassemia in Premarital Couples in Takestan

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Background: Thalassemia is a genetic disorder that involves mutations of the genes that are responsible for the production of hemoglobin in the blood. β -thalassemia is the most common hereditary disease in Iran. More than two million carriers of beta-thalassemia live in Iran so it is important to find carriers by screening those people who are at high risk. **methods:** This study was performed to determine the prevalence of minor thalassemia in premarital candidate in Takestan city from the beginning of September 2014 to the end of August 2015. The study samples included of 4890 cases were referred to the central laboratory of Takestan city. After receiving the blood samples and tested by cell counter Analyser (sysmex), In the case of $MCV < 80$ and $MCH < 27$, The Hb A2 was done. **Results:** the total of 4890 cases ,282 cases had MCV less than 80 and MCH less than 27, after Testing HbA2, 65 cases (1.3%) had Results were higher than 3.5% that were identified as Minor thalassemia .In Iran, according to World Health Organization, about 4% of the population are carriers of the thalassemia gene. The prevalence of thalassemia minor in Takestan was 1.3% **Conclusion:** Considering the relative incidence of this genetic disease in Iran and the Marriage of carriers with normal subjects, In the coming years we will be faced with a generation with a higher incidence of this gene, therefor Appropriate decisions to reduce the incidence of this gene in future generations is essential.

Keywords: β –Thalassemia, Minor Thalassemia, Prevalence, Iran

P181

Evaluation of Some Reproductive Factors as Risk Factors of Breast Cancer Incidence in North- West of Iran, 2014-2015

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Introduction: breast cancer is the most common cancer in women in both developed and developing countries, in our country, it is a major health problem for women, too. According to various studies, reproductive patterns, such as older age at menarche, earlier age at first pregnancy, greater number of pregnancies have probably plays an important role in breast cancer. This study aimed to investigate the relationship between incidence of breast cancer and reproductive factors in North- west of Iran. **Materials and Methods:** This retrospective analytical control-case study was conducted among 250 breast cancer patients and 232 healthy women as control group. Data collection tools included a questionnaire and interview. Data were analyzed using SPSS-19. **Results:** Results indicated that mean of age in the case group were 48.08 years, mean of age at menarche, menopause and at first pregnancy were 13.56,52.7 19.40 years, respectively. **Discussion:** In this study, mean age of those with breast cancer was 48.08 years whereas in study of Mosavi et al, mean age was 51.3 years. Our finding confirms findings in the West Azerbaijan province. In another study, Veisy, et al revealed no association between breast cancer and age at menarche, on the other hand relationship was found between other reproductive factors and breast cancer. Based on The findings of Ewertz, et al, in contrast of our study pregnancies must continue to term to offer protection against breast cancer. The findings of our study might help health managers to plan about screening and detection of breast cancer.

Keywords: Breast Cancer, Reproductive Factors

P182

Prevalence of Intestinal Parasite Giardia Infections in Health Card Applicants City of Babol

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Intodaction: provide employment centers distributing food in the absence of sanitation can transfer parasitic infections have an important role Bashnd.angl human pathogen Giardia lamblia as straw in the twentieth century has been introduced. The present study was to evaluate the prevalence of intestinal parasite Giardia city of Babylon was conducted among health card applicants. Methods: This cross-sectional study of Persian date Azar 92 till Persian date Azar 93 do Grft. jamh 1,700health card applicants complained frequently to Health Care Center Babol. Lvgvl paint samples examined both direct and Grft.atlaat in spss software was compiled and analyzed. Results: Of 1,700 subjects, 901 (53%)were male and 799 (47%) women Bvdnd.frvany overall infection Giardia 40.7 percent Bvd.az between men and 481 women (69.5 percent) and among women, 212 (30.5%) with Bvdnd.lvdgy parasites in 429 patients (62 percent) of rural people and 236 patients (38%) of the urban population Mtalh45-18Salh Shd.sn Bvd.dravn study no significant relationship between age and sex Ndasht.az 693 positive cases of parasitic, 45 the percentage of blood group O, 34 Drsdgrvh bloody a, 20 B Drsdgrvh blood and blood group AB was 1 percent. A significant correlation between blood group O with the parasite Giardia there. Conclusion: The results indicate a prevalence of "high contamination with Giardia cyst production and distribution of food among the operators, especially in rural areas such as stool test every three months Ykbarjht operators Bashd.jht reduce pollution, expand health education, supervision and imposing conditions and health experts water tests rural area and protozoan intestinal infections by type is recommended.

Keywords: Giardia Cysts, Health Card Applicants Babol, Intestinal Parasites

P183

Urine Radioiodine Measurement in Clinical Laboratories for Screening of Nuclear Incidents Injuries

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In nuclear incidents, normally the numbers of suspected people to internal contamination with radioisotopes are increased. Therefore, the radio bioassay laboratories are not able to response on time. The aim of this study is to increase the capability of the medical diagnostic labs, using gamma counter in screening radioactive contamination (e.g. iodine radioisotopes). In this study measurement and calculation activity of sample, system calibration process, and MDA determination for 125I in urine sample are performed. These processes are applied to some unknown urine samples and their results are verified.

Keywords: Internal Contamination, Nuclear Incidents, Clinical Laboratory, Radio Bioassay, Gamma Counter



P184

Production of Uranium Diagnostic Kit in Urine Samples Based on Spectrophotometry Methods

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Uranium is a toxic and radioactive metal. Chemical toxicity of uranium is due to its harmfulness to the kidneys. Uranium measurement in urine is the best indicator to the level of contamination. Different instrumental methods for uranium measurement in urine sample are existing. Spectrophotometry is the best method due to its high accuracy and less cost and time consuming in compare to other methods. In laboratory investigation different conditions in uranium complex with 2-(5-bromo-2-pyridylazo-5-diethyl-aminophenol) (Br-PADAP) in water and urine were studied and optimized. The results showed that a stable U complex with Br-PADAP in a pH=9 was formed which made it possible to measure uranium in range of 0.07 – 5 mg/L. applying this method the recovery value of uranium was 99 – 103 percent and its diagnostic level and standard deviation were 0.037 mg/L and 10% respectively. In this method presence of metal ions such as Th, Cu, Fe, ... up to 100 concentration level had no interfere with uranium measurement process. Based on these assumptions uranium diagnostic kit was manufactured.

Keywords: Uranium, Br-PADAP, Urine, Spectrophotometers, Diagnostic Kit

P185

Screening Study of Gestational Diabetes in Clients to Central Laboratory First Six Months of 2015

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Introduction: Gestational diabetes refers to the condition where blood sugar levels for the first time during pregnancy, usually between weeks 24 and 28 of pregnancy appear. Gestational diabetes, approximately 4% of pregnancies. Gestational diabetes is caused when insulin receptors do not function properly. This is likely due to pregnancy-related factors such as the presence of human placental lactogen that interferes with susceptible insulin receptors. This in turn causes inappropriately elevated blood sugar levels. **Material & Methods:** Of 6271 pregnant women (the first prenatal visit) sample of fasting blood sugar & Of 5462 pregnant women were taken blood samples to test OGTT 2 hours. Isolated serum & glucose levels were measured by the BT1500. Variables such as age, months of pregnancy, a history of diabetes, abortions were analyzed with software Spss. **Results:** Results in the first prenatal visit about 590, 7/88% pre-diabetic and 75, 3/11% were isolated diabetic final screening results 8/9% (536 cases) of the patients were diagnosed as gestational diabetes definitive. **Conclusion:** Gestational diabetes isn't an immediate threat to pregnant women. However, poorly controlled diabetes in pregnancy puts mothers a condition called pre-eclampsia, which causes high blood pressure having too much amniotic fluid, premature labour, cesarean, the risk of gestational diabetes in future pregnancies and increased risk of type 2 diabetes in life is. On the other hand fetal complications include gestational diabetes: macrosomia, shoulder dystocia, head trauma, pregnancy and pelvic disproportion due to hypoglycemia, hypocalcemia, polycythemia, hyperbilirubinemia.

Keywords: Gestational Diabetes, Pregnant Women, Insulin

P186

Check the Diabetes and Fat Status of Personnel in the Department of University

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Introduction and Objective: The blood biochemical factors for non-communicable diseases and lifestyle-related identification is checked Including measurements of blood glucose, triglycerides, cholesterol monitors in both groups .L.D.L and H.D.L. The aim of this study biochemical status of personnel in the Department of Health is University of Medical Sciences in 1394. **Materials and Methods:** A cross-sectional study. The population consisted of all personnel working in the health departments of the Universities. The sampling method was census and sample size of 94 people. Data collection using experimental data and clinical practice. SPSS18 software for data analysis and statistical tests were used. **Results:** According to the study 53/2% of males and 46/8 percent were female. The average age of the (1/1 ± 42), respectively. The findings, 93/6 percent of the normal blood glucose levels, 1/1 pre-diabetic percent. 3/2% percent of diabetics, and 1/1 percent less than normal. 87/2% of the normal amount of blood triglycerides, and 11/7% were abnormal percent, 96/1% percent of the total amount of cholesterol in the normal range, and 29.8 percent were normal, 1/1% of in terms of normal blood HDL, and 97/9% percent had abnormal blood LDL levels as well as 74/5% of the normal level, and 24/5% percent had abnormal. **Conclusion:** Due to the low incidence of non-communicable diseases in the studied population can be concluded that the type of job and health education personnel have a positive impact on their way of life.

Keywords: Biochemistry, Blood, Personnel, Department of Health, Birjand University of Medical Sciences

P187

Silymarin as Anti-Cancer Agent

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Silymarin is a unique flavonoid complex—containing silybin, silydianin, and silychrisin—that is derived from the milk thistle plant. These unique phytochemicals from the milk thistle have been the subject of decades of research into their beneficial properties. It is used for the protection against various cancer carcinoma. In this review, we summarize the recent investigations and mechanistic studies regarding possible molecular targets of silymarin for cancer prevention. Silymarin modulates imbalance between cell survival and apoptosis through interference with the expressions of cell cycle regulators and proteins involved in apoptosis. In addition, silymarin also showed anti-inflammatory as well as anti-metastatic activity. Further, the protective effects of silymarin and its major active constituent, silibinin, studied in various tissues, suggest a clinical application in cancer patients as an adjunct to established therapies, to prevent or reduce chemotherapy as well as radiotherapy-induced toxicity. This review focuses on the chemistry and analogues of silymarin, multiple possible molecular mechanisms, in vitro as well as in vivo anticancer activities, and studies on human clinical trials.

Keywords: Silymarin, Carcinoma, Cancer Apoptosis



P188

Molecular Mechanism of TGF-B Signaling Pathway in Colon Carcinogenesis and Application of Curcumin as Chemopreventive Strategy

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Colon cancer is one of the third most common cancer in man, the second most common cancer in women worldwide. There are a number of molecular pathways that have been implicated in colon carcinogenesis, including TGF- β / Smad signaling pathway. TGF- β (transforming growth factor beta) signaling pathway has the potential to regulate various biological processes including cell growth, differentiation, apoptosis, extracellular matrix modeling, and immune response. TGF- β signaling pathway acts as a tumor suppressor, but alterations in TGF- β signaling pathway promotes colon cancer cell growth, migration, invasion, angiogenesis, and metastasis. Curcumin (diferuloylmethane) is a polyphenolic compound, and the active ingredient, turmeric, is derived from the rhizome of *C. longa*. Curcumin can modulate several molecular pathways that are responsible for colon cancer progression. Curcumin has an effective chemotherapeutic role in colon cancer treatment through significant suppression of the expression of PLA2, PLC γ 1, PGE2, COX, and LOX. Dietary administration of curcumin blocks the progression of azoxymethane-induced colon cancer in a dose-dependent manner and significantly inhibits tumor development through increased levels of apoptosis. Conclusion It has been recognized that altered function of TGF- β signaling pathway plays a crucial role on initiation, progression, and metastasis of colon carcinogenesis. A molecular mechanism of curcumin in TGF- β -mediated colon cancer progression has not yet been investigated. Elucidating the molecular mechanism of curcumin on TGF- β -induced colon carcinogenesis might be helpful for future therapeutic strategies.

Keywords: TGF- β , Colon Cancer, Curcumin, Metastasis

P189

Evaluation of Effectiveness of Ethanolic Extract of *Artemisia Aucheri*, Individually and in Combination with Chloroquine, on Chloroquine - Sensitive Strain of *Plasmodium Berghei* in Sourian Mice

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Background: Drug resistance in malaria parasites is extending in the world particularly in chemical synthesized drugs such as 4-aminoquinolines and aminoalcohols. Employing herbal extracts is encouraged by WHO in the malarious areas. In this study, the effectiveness of ethanolic extract of *Artemisia aucheri* individually and in combination with chloroquine, has been considered against chloroquine - sensitive strain of *Plasmodium berghei*. Methods: At the first stage, ED50 of *A. aucheri* and chloroquine on *P. berghei* was calculated using in vivo test. Then based on the ED50s combination of *A. aucheri* and chloroquine with ratios of 0/100, 10/90, 20/80, 30/70, 40/60, 50/50, 60/40, 70/30, 80/20, 90/10 and 100/0 were tested against the parasite. For evaluating the adverse effect of *A. aucheri* on the mice, for two weeks 1000mg / kg of the extract was daily employed and the mice were followed up for fifty days. Results: ED50s for chloroquine and *A. aucheri* were 1.6mg / kg and 1000 mg / kg respectively. The outcome of two drugs combination on the mice showed antagonistic effects on the chloroquine - sensitive strain of parasite. Two weeks daily administration of *A. aucheri* had no toxic effect on the mice. Conclusion: *A. aucheri* individually can be effective in reducing the parasite while in combination with chloroquine loses its property.

Keywords: *Artemisia Aucheri*, *Plasmodium Berghei*, Combination Therapy, Chloroquine

P190

Lung Malignancy and Histopathology Characteristic

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Most number of lung cancers are considerable size when first detected and about 60% are incurable as a result of extensive local spread and distant metastases. Lung neoplasms are sometimes associated with extrapulmonary manifestations not related to the presence of metastatic disease. If lung cancer untreated, it eventually causes death. Our objective is to evaluate the lung malignancy and histopathology characteristic. Patients and Methods: For this cross-sectional study data were evaluated from 65 patients who underwent transbronchial and CT-scan guide biopsy for lung mass at Rajaei and Velayat Hospitals between Jun 2007 and April 2013. The data from these participants were obtained by a check list and review of biopsy specimens. The results were expressed by pathologic diagnosis. Both descriptive and statistical analysis methods were applied. Results: Age range of subjects in this study was 37-80 years and more common in men (%69). The most common chief complains were productive cough, weight loss and hemoptysis. The history of cigarette smoking recorded in all patients. Histopathology findings in (18) of the patients revealed squamous cell carcinoma, (13) adenocarcinoma, (12) small cell carcinoma, (3) bronchioalveolar carcinoma, mucinous type, (4) bronchioalveolar carcinoma, non-mucinous type, (15) metastatic malignancies. Conclusions: One the requirement for the preoperative diagnosis of a solitary pulmonary nodule relies on the test responsibility of diagnosing a lesion that would prevent an unnecessary major surgery. Also there is a need to work toward a reciprocal understanding and agreement between pathologists, clinicians, and researchers.

Keywords: Lung, Malignancy

P191

Mediastinal Masses and Histopathology Diagnosis

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Mediastinal masses and likewise tumors (primary or and metastatic) rouse in all three parts of the mediastinum and consists of benign to malignant lesions. According to the patient's age, differential diagnosis of mediastinal masses was varied. For example the most prevalent lesion in infants and children is neurogenic tumor while in adults are thymoma and lymphoma. Our objective is to evaluate the mediastinal masses and histopathology diagnosis. Patients and Methods: For this cross-sectional study data were evaluated from 25 patients who underwent CT-scan guide biopsy for mediastinal masses at Rajaei and Velayat Hospitals between March 2007 and March 2013. The data from these participants were obtained by a check list and review of biopsy specimens. The results were expressed by pathologic diagnosis. Both descriptive and statistical analysis methods were applied. Results: Age range of subjects in this study was 33-75 years and more common in men (%73). The most common chief complains were dyspnea and cough. Between the three mediastinal compartments, anterior mediastinum was the most recurring place for the mediastinal masses of 15 (60%) patients, Non Hodgkin Lymphoma of 8 (32%) patients, Hodgkin Lymphoma of 4 (16%) patients and thymic tumors of 3 (12%) patients. Teratoma of 2 (8%) patients, seminoma of 2 (8%) patients, neural tumor of 2 (8%) patients and metastatic carcinomas of 4 (16%) patients. Conclusions: For optimal patient management, pre-operation clinical diagnosis is necessary in anterior mediastinum but is not essential for posterior mediastinal masses.

Keywords: Mediastinal Masses, Histopathology, Diagnosis



P192

Primary Typical Pulmonary Carcinoid Tumor: an Incidental Finding

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Introduction: Bronchopulmonary carcinoid tumors arise from neuroendocrine cells known as Kulchitsky cells. Pulmonary carcinoid is an infrequent tumor that includes only 0.5% to 2.5% of all pulmonary tumors. They are characterized by slow growth and rare distant metastasis. They are located in central or peripheral part. Second location can be asymptomatic but central carcinoid often present with obstructive signs including: recurrent pneumonias, hemoptysis,.... We report an asymptomatic rare case of a primary bronchopulmonary carcinoid in a 62-year-old man. **Case presentation:** A 62-year-old man presented with history of intermittent right upper quadrant pain especially after fatty diet for six months. Systemic examination was unremarkable. Ultrasonography of gall bladder was shown cholelithiasis. He was candidate for cholecystectomy. On preoperative cardiology consult, Chest X-ray showed an incidental homogenous opacity in the right middle zone without any respiratory symptoms. Patient underwent fiberoptic bronchoscopy and biopsy. Histopathologic examination showed monomorphic tumoral cells forming small nests, rosette-like arrangements and cords with salt and pepper, stippled appearance nuclei. The postoperative period was uneventful. The patient was disease free in the following five months. **Conclusion:** The carcinoid syndrome is very rare in patients with bronchopulmonary carcinoid tumors. Overall prognosis for patients with typical bronchopulmonary carcinoid tumors is favorable. If it is diagnosed in early stage, the chances for radical treatment increased.

Keywords: Lung, Carcinoid Tumor

Laboratory and Point of Care Testing (POCT) P193

P193

The Importance of Molecular Tests in POCT

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The first tests were done by the physicians at the site of patient's care. With increasing the number of the tests and improving instruments, a separate place was allocated to the laboratory. Consequently, training courses were established to educate expert staffs. Contemporary with improving technology, modern, high-tech, smaller and portable instruments were innovated to improve the quality of patient's care. These innovations result in establishing of Point of Care Testing (POCT) laboratories. POCT means the conducting of diagnostics tests at the site of patients' care: physician's office, bedside, intensive care unit (ICU) and so on. In this way, instead of sending the samples to the laboratory, the required tests are immediately done after sampling. POCT has many advantages: increasing speed, improving the quality of patient's care, reducing hospital stay and the likelihood of staff errors (pre- and post- analytical errors), increasing collaboration between physician and patient, faster decision making for critically ill patients, timely and rapid treatment of patients and so on. POCT may cover all departments of the laboratory. Thanks to the rapidly increasing of molecular tests and the importance of these tests for promptly making decision, they would have a significant and imperative position in POCT. Therefore, special attention should be paid to the legislation of guidelines for quality control of POCT molecular tests. Conclusions: POCT can cover all laboratory fields including molecular tests, so particular consideration should be paid the quality control and assurance of these tests.

Keywords: POCT, Advantages, Disadvantages, Molecular Tests

Laboratory and Reproductive Medicine P194

P194

Comparison of the Effects of Acarbose and Metformin on Ovulation Induction in Infertile Women with Polycystic Ovary Syndrome

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Introduction: the aim of this study was to compare the effects of metformin and acarbose accompanying clomiphene on the successful ovulation induction in infertile women with polycystic ovary syndrome. **Methods:** This randomized double blind clinical trial study was performed on 60 women with polycystic ovary syndrome. Intervention group received acarbose 100 mg/day for 3 months. In the first, second, and third weeks, they received 1 tablet, 2 tablets, and 3 tablets per day respectively. In addition, they received 100 mg clomiphene from third to seventh day of menstruation, during the 3 month treatment period. The control group received metformin 500 mg/day for 3 months. In the first, second, and third weeks, they received 1 tablet, 2 tablets, and 3 tablets per day respectively. **Results:** After the intervention, mean of BMI and fasting glucose tolerance test in Acarbose group was less than metformin group ($p = 0.05$). The mean levels of triglycerides, LDL and HDL did not differ between the two groups after the intervention ($P > 0.05$). The mean of cholesterol levels were different in the two groups after the intervention ($p = 0.04$). Frequency of ovulation induction in those who received Acarbose (78.5%) was more than those who received metformin (46.6) ($P = 0.012$). Frequency of hirsutism and acne in two groups were not different, also Frequency of gastrointestinal side effects was similar in both groups ($p > 0.05$). **Conclusion:** Comparing with metformin, clomiphene with acarbose were more effective in ovulation induction and decreasing body mass index in infertile women with polycystic ovary syndrome.

Keywords: Acarbose, Metformin, Polycystic Ovary Ovarian Syndrome



Laboratory and Surveillance System for Communicable Diseases P195 – P210

P195

The Importance of the Laboratory in the Diagnosis of Latent Infections and Newfound and Emerging Diseases

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Introduction: Today, scientific and technological developments face very different threats than before. In the past, if threatened with weapons and the invasion and military campaigns against countries for territorial and land development of science and technology today with the development of a variety of threats has been expanded so that when it comes to biological threats, the threats to nature, including the earthquake not flood, but the threat is made. Method: Implementation described in this article can only help to understand the current situation and the decision-making process and management. Purpose: The importance of the laboratory in the diagnosis of latent infections and newfound and emerging diseases Results Hidden infestation foods, pharmaceuticals, cosmetics, water and ... for cancers, genetic diseases, sterilization of humans and emerging diseases such as avian flu, swine flu, AIDS and SARS - new and unknown viruses with symptoms similar diseases such as colds and ... safe from today's threats are such that you should look at pre-empting the necessary measures be taken to prevent and control them In the field of laboratory diagnosis. Discussion: Equip and operate a regional diagnostic laboratories is a necessity and a priority for saving lives Because any contamination of viral or microbial life is threatened by enemies and set measures to identify and reduce the vulnerability of society and maintain the human capital.

Keywords: Laboratory, Diseases



P196

The Importance of Early Diagnosis of Intelligent Laboratory Epidemic Communicable Diseases

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Introduction: Despite significant progress in the fight against diseases, infectious diseases are still important in the epidemiology and community health. The need to create intelligent systems to control communicable diseases poses significant benefits in clinical laboratories today with a new understanding of ways to spread knowledge about the disease and ways to prevent pathogens and the development of a broader and more comprehensive concept for Disease Control has changed. Method: Implementation of the method in this paper can only understand the present situation and to help the decision making process. Purpose: Need to make a smart lab on a new system of planning and management of community health Results Further improvement of clinical laboratory software related to computer systems can be designed and produced in the laboratory collection Ability to manage and store and analyze data to draw a graph of the function Forecasts for preventive interventions may be possible. Discussion: Given the multiplicity of infectious diseases prevention and control of diseases, including infectious agents pathogenic factors and functions that the arrival of each of the possible ways to prevent In this regard, the importance and necessity of intelligent lab for proper planning and management based on output In the prevention and control of infectious diseases and non-communicable decision may be filed.

Keywords: Laboratory, Smart, Epidemic

P197

Public Relations Function in Introducing Behavioral Illnesses in Shahryar Treatment and Health Network Consulting Clinic in Year 1394

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HIV and its related illness diseases such as Tuberculosis will be increased based on economic issues, class gap and deprivation. Training on HIV and informing about the issue is a subject which needs more agreement and more suitable intersectional collaboration in respect of its content and implementation. Public relations were not considered by offices in recent years and have been always mentioned as a set offering limited service works. Having equipped with electronic in offices and administrators environment, managers and bosses began to find the role and the potential of the public relations. In this respect, electronic public relations were proposed. The important role of HIV and the consequence of its media coverage are obvious to everyone now. The role of the Public relations has become much more important in informing the disease. This study illustrates the role of the public relations of the Shahryar Health Network in introducing and prevention of HIV disease among people who live in Shahryar city. We hope to be influential in helping with infected illnesses and patients who contacts with it to prevent HIV.

Keywords: HIV, Public Relations, Medium



P198

Biological Defense and Intelligent Lab Importance in the Prevention of Communicable Diseases

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Introduction: Disease substantial areas still certain diseases and health society. Today, with a new understanding of the ways of understanding the disease, pathogen and develop ways of preventing and controlling the disease is broader and more comprehensive. Eventative measures are the first line of defense against invading pathogens and infectious embankment and shall be considered to include all that shall be applied to prevent pathogen entry. Therefore need to create intelligent systems in order to control a significant advantage in the clinical laboratory. includes infectious diseases. **Method:** Implementation of the method in this paper can only understand the present situation and to help the decision making process. **Purpose:** Need to make a smart lab on a new system of planning and management of community health **Results** Further improvement of clinical laboratory software related to computer systems can be designed and produced in the laboratory collection Ability to manage and store and analyze data to draw a graph of the function **Forecasts** for preventive interventions may be possible. **Discussion:** Given the multiplicity of infectious diseases prevention and control of diseases, including infectious agents pathogenic factors and functions that the arrival of each of the possible ways to prevent In this regard, the importance and necessity of intelligent lab for proper planning and management based on output In the prevention and control of infectious diseases and non-communicable decision may be filed.

Keywords: Laboratory, Smart

P199

Evaluation Epidemiology Malaria Disease in 1390-1393 in Qazvin

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Introduction and purpose: unusual about 30-50 thousand people to catch malaria in point of view geographical, ill in south and east south state was anemic mode. This area consists of malaria core. Malaria ill in Qazvin country with attention to advantage tries in past years get clean and under control. Determinate rate puff outbreak ill in population under cover native nonnative based on place of resident in rural and urban area – age – sex group –pas travel in pollute area. **Finding:** of total 34124 scented sample in years 90-93 number puff sample recognize as certain sample that rate of outbreak in population under cover until years 1390-25/5, 1391-12, 1392-12/7, 1393 -10 was in 100000 population. Rate of outbreak in urban areas was %40, in rural area %60 and age group up to 15 years was %100. Age group 5-14 years was 0 and age group 0-4 years was 0. In sex group in women was %25 and in men was %75, % 100 samples relate to Afghanistan people that consist of travel past 1-2 month before of beginning ill sign to pollute area Afghanistan and time of enter to rain doubt care. **Result:** with attention to finding %100 sample, enter of afghanestan country that enter to country by of illegal and resident in country already with attention to epidemic condition and ecoligy Afghanistan country must especial rule represent for afghan immigrates in inter border country with cooperative ministry interior.

Keywords: Plasmodium, Epidemiology, Ecology, Malaria, Qazvin



P200

A Survey on *Trichomonas Vaginalis* Infection among Women Referring to Naft Hospital in Ahvaz during 2005-2014

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Backgrounds: *Trichomonas vaginalis* is one of the most common sexually transmitted infections, which had received little attentions at the global level despite its high prevalence rate of 5 to 75 percent and adverse health problems such as pelvic inflammatory disease and unfavorable pregnancy consequences. This study aimed at investigating the prevalence of *T. vaginalis* among women referred to Naft Hospital in Ahvaz based on the Pap smear test during 2005-2014. **Materials and Methods:** This cross-sectional descriptive study investigated all the Pap smear files (37,332 items) received from the laboratory of Naft Hospital in Ahvaz during 2005-2014 through census method in terms of *T. vaginalis* infection. Symptoms such as inflammation, fungal and bacterial infections were examined among the received positive samples. Data were analyzed using SPSS and the chi-square test. **Results:** Among 37,332 participants, 312 samples (0.83%) had *T. vaginalis* infection. Of the positive cases, 240, 26, and 89 had inflammation, fungal and bacterial infections, respectively. In addition, 18.4% of the participants had one abortion and 6.1% had two abortions. **Conclusion:** Research results show that *T. vaginalis* infection may play a role in transmission of other infections such as fungal and bacterial infections. Moreover, in case the clinical symptoms of these infections are not treated chronically and/or timely, they may lead to cellular changes, especially cervical cells.

Keywords: *Trichomonas Vaginalis*, Sexually Transmitted Diseases, Vaginitis, Ahvaz

P201

Prevalence Survey of Shigelosis in Clients to Zahedan Central Laboratory in the First Six Months of 2015

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Intruduction: *Shigella* enteric pathogen with high virulence. These bacteria cause of dysentery epidemic or endemic mortality is high, *Shigella* dysentery only reason why large-scale epidemics in different regions of the world. Most third world countries at risk of outbreak of *Shigella* dysentery type 1, *Shigella* causes about 600,000 deaths every year around the world. The aim of this study emphasize the importance of social issues and health care epidemic of *Shigella* and appropriate solution is to prevent and stop the spread of the disease shigellosis. **Methods:** On 319 stool samples from Diarrhea suspected of having *Shigella*, specific culture was. Enrichment, chemical tests & serotype, *Shigella flexneri* was isolated. Epidemiological data in Excell entered, variables selected for the study included: gender & age were analyzed using Spss software. **Results:** 10 causes *Shigella flexneri* was isolated. 8 men 80% & 2 women 20%. Patients age was 12-48 yr, 60% of patients in the active age (20-25 yrs) **Discussion:** Because of lack of clean water, Health environment, Unusual sewage system and have no toilet for an outbreak of *Shigella* are. A good strategy for the prevention of *Shigella* is food hygiene, safe water supply and purification, and sanitation, chlorination of water for drinking, washing hands with soap and water and health education and participation of the people.

Keywords: Prevalence, Dysentery, *Shigella Flexneri*, Culture, Zahedan

P202

Prevalence Survey of Cutaneous Leishmaniasis in Zahedan in 1392 to 1394

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Introduction: Leishmaniasis is caused by parasitic protozoa of the genus *Leishmania*. Humans are infected via the bite of phlebotomine sandflies. In recent years, the vector of leishmaniasis in endemic areas is caught annually. Although cutaneous disease is usually associated with high mortality & morbidity rates disfiguring skin lesions & scar left on the skin for long-term social & psychological effects of the disease. The purpose of this study was necessary measures concerning the recognition of parasites, vectors & reservoirs and adopting appropriate strategy to eliminate transmission & prevent outbreaks of the ring. **Methods:** 361 patients referred of the center of Salak were direct smear & Giemsa staining, were examined microscopically. Variables such as age, gender, location, ... were analyzed with the Spss software. **Results:** 147 cases were positive. 110 men 75% & 37 women 25%, 75% of patients in Zahedan, 11% live in Mirjaveh & 14% of patients from Zabol. 20% of patients had the lesion on the face, 54% on the hand, 26% on the feet. **Discussion:** Capable of transmitting disease to other areas contaminated by residents or passengers in urban & lack of awareness about the disease Salak is the most important factor in disease transmission. Seriousness of the disease leishmaniasis especially education, prognosis & treatment of patients with accurate & timely hoped that the disease can be controlled.

Keywords: Prevalence, Leishmaniasis, Phlebotomus, Giemsa, Lesion, Zahedan

P203

Seroepidemiological Investigation of Kala-Azar Disease (Infantum Type) Using Laboratory Diagnosis of DAT between 2001 and 2014 in Ardabil Province, Iran

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Visceral leishmaniasis (VL), kala-azar is one of the diseases transmitted between animals and humans caused by intracellular protozoan parasites of the genus *Leishmania*. There is a Mediterranean type of the disease in the country caused by *Leishmania infantum* and mostly children under five are suffering from this disease. Dogs and Canine are the main reservoirs. Meshkinshahr is the old center. Laboratory diagnostic methods for Kala-azar are DAT, IFA, ELISA, RK39 and bone marrow examination. **Materials and methods:** This study was a cross-sectional study on 377 patients with kala-azar since 2001 till 2014 in Ardebil province who have been diagnosed and treated using laboratory diagnosis by antigen-DAT (1:1600 and higher titer). **Results:** the city of Meshkinshahr, local transmission of disease have taken place in the cities of Germe, Bilesavar and Parsabad where are the new focus of disease in the province. Prevalence of the disease is higher in children under 5 years (91%) and in rural areas. According to integrated disease care program in the network system, strengthen and intensify the caring programs and awareness in the province as well as intervention programs, leading to a decrease in the number of cases and death in endemic cities, therefore it is recommended in order to maintain the present status and control the disease and prevent the risk of morbidity and mortality in children under 5 years of age, it is necessary to strengthen and intensify the screening programs as well as identify and eliminate the reservoirs of infection (infected dogs).

Keywords: Kala-Azar, Meshkinshahr, DAT, Network System



P204

Treatment of Parasitic Diseases with Traditional Medicine Methods Advantages and Benefits

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Parasites are organisms that often through food by mouth, which is one of the most common pathways in vivo parasite has entered notification of peresent of parasite, especially in children, is perhaps one of the most common problems in every family would have existed. Due to the high side effects of chemical drugs, intolerance and the unavailability of these drugs for all people, Contraindications in some of life as well as those that cause cancer, teratogenic effects of chemical drugs, traditional medicine to treat intetine parasites can be used. In this study, referring traditional medicine and disease treatment sites was done in the traditional way came to the conclusion that in all the books of traditional medicine and treatment of special materials with varied properties of the material used is often publicly available, but most people are unaware of their properties Notification of anti-parasitic properties of these materials will cause the migration of people to chemical agents. ncluding herbal medicines that have anti-parasitic properties include *Allium sativum*, onions, citrus seed when dried and powdered, cinnamon herbal tea, Nosebleed tea, *Trachyspermum copticum*, Bishop, black beans, rice cable *Asafoetida* and ... This materials can be used alone, or combined use. Among the herbal medicine of all the property of the *Allium sativum*, onion, turmeric ... Named the most important raw material, the consumption will increase the effectiveness of them.

Keywords: Traditional Medicine, Herbal Medicine, Chemical Drugs, Parasitic Diseases

P205

Epidemiology of Tinea Capitis in Northeast Iran: A Retrospective Analysis from 1998 - 2012

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Background: Tinea capitis is a common disease of the pediatric population. This disease typically follows one of several clinical patterns, i.e., scaling, hair loss, and/or inflammatory lesions, which are usually caused predominantly by two dermatophytic genera: *Microsporum* and *Trichophyton*. The aim of this study was to investigate tinea capitis and its etiological agents in Sari city of Mazandaran province, Iran. Methods: We studied the spectrum of tinea capitis by means of a retrospective analysis involving 1745 patients referred to both the Reference Laboratory of Medical Mycology (RLMM) and Bo Ali Sina Hospital at Sari, Iran (1998–2012). Specimens were assessed by standard mycological techniques based on macroscopic and microscopic morphology. Results: Among the patients, 480 (27.5%; 61 males and 39% females) were confirmed through a mycological examination. The peak incidence was in the 5–14 years age group. Endothrix (54.8%) was the most frequent clinical feature by direct exam. The predominant causative agents of tinea capitis were *T. tonsurans* (186 cases; 38.8%) and *T. violaceum* (119 cases; 24.8%), followed by *T. mentagrophytes* (9.6%), *T. schoenleinii* (5.8%), *T. rubrum* (4.2%), *M. gypseum* (3.1%), *T. verrucosum* (2.9%), and *Epidermophyton floccosum* (0.2%). Conclusion: The present study showed that tinea capitis is mainly due to the anthropophilic species, and the most common species were *T. tonsurans* and *T. violaceum*. Owing to the high frequency of anthropophilic species, future studies may be useful in the development of preventive and educational strategies to reduce healthcare expenditure.

Keywords: Epidemiology, Tinea Capitis, Dermatophyte, Sari, Iran

P206

Study on Serum Titer Hbs Antibody in Beheshti Hospital Staff in Hamedan West of Iran

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Introduction through this research personnel is able to determine the level of blood AntiHBS Beheshti hospital staff was doing in Hamedan in 1394. Methods: In this cross-sectional study, 176 were staff members was done. GBC ELISA assay kit and method using solid media and to help enzyme-labeled enzymes, serum levels of Anti HBS headline and the actual amount it estimates SPSS software and E- test was analyzed. More antibodies from mIU / mL 10, was considered an appropriate response to the vaccine. Results: Two patients (1.1%) lower than normal levels of antibodies, 145 (82.3%) and moderate response and 29 patients (16.5%) stated more cut-off antibody. Using the t test no significant difference was observed between sex staff and the level of antibody titers were negative, and people who have had a history of incomplete or non-receipt of hepatitis B vaccine. Conclusion: Our study of the immunogenicity of the vaccine prescribed by the hospital staff is acceptable. It seems increase more than three times a vaccine against hepatitis B in health workers with higher levels of antibodies to hepatitis B is associated.

Keywords: Hepatitis B, Antibodies against Hepatitis B, Beheshti Hospital Staff

P207

Tuberculosis in Pregnancy

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In the literature few cases in pregnancy have been previously published. Tuberculosis (TB) is a disease that affects hundreds of millions people across the world. Pregnant individuals are especially difficult because many symptoms of active TB can mimic normal physiological changes of pregnancy especially in the absence of lung involvement. It mimics other disease and clinical presentation is non-specific, which may lead to diagnostic delay and development of disease. Testing for TB is considered both safe and valid. Throughout pregnancy such as TB Skin testing & TB blood tests & chest X-ray and biochemical We present a case report of a 27 Years old afghan nationality woman, which she gave birth to a health neonate of 2600gram at 33 weeks gestation by Caesarian delivery for 2nd baby delivery.

Keywords: Tuberculosis, Pregnancy, Lung Involvement, Gestation, Neonate

P208

Evaluation of Laboratory Rapid Diagnosis of HIV in Pregnant Women in Isfahan

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Introduction: women who live with HIV/AIDS are increasing in Iran in recent years and increase of pregnant women affected to HIV, if not prevented by effective measures, can lead to HIV transfer to children and because most of them are in reproducers age its necessary to conduct many activities for preventing mother to child transmutation. Main purpose of this investigation is assessment of Rapid test SD for diagnosis of HIV in pregnant women. Method: this survey is descriptive-cross sectional –study. Target group was 7172 pregnant women who were screamed for HIV affection by immune chromatographic method (Rapid test) in 93-94 years. The data were analyzed by spss-20 software. Result: in 7172 pregnant women, 10 cases had Rapid test reactive in HIV2. All of them referred to behavioral disease consultation center and rechecked by Rapid test and Elisa. Just in 3 cases again Rapid test were reactive in HIV2. But all of them were non-reactive by Cham bio Rapid test and for all those Elisa. Fourth generations were non-reactive. Just in one case she had history of high-risk behavior. Discussion: PMTC is the most important strategy in control and prevention of HIV/AIDS in national strategic plan in Iran so screening of pregnant women for HIV/AIDS is very necessary but it's vital to use test with high specify and Sensitivity for reducing stress in mother, revision regarding use of Rapid test SD or use of other WHO approved – kits for reactive HIV2 is suggested.

Keywords: Pregnant Women, HIV/AIDS, Rapid Test

P209

A Review of Malaria Transmission-Blocking Vaccines (TBVs)

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Malaria is one of the most important infectious disease caused by plasmodium genus protozoan parasites transmitted by specious of Anopheles mosquitoes. As the parasites are resistant against medication and the anopheles are resistant against insecticides, and that the disease can transmit before appearance of symptoms in some specious of plasmodium, it is quite necessary to propose vaccines that interrupt malaria transmission (VIMTs) such as TBVs, along with other interventions, to eradicate and eliminate this disease. TBVs that contain eliciting molecules which produce antibodies preventing reproduction and growth of the parasites in mosquitos. They are known as altruistic vaccines protecting community. TBVs are applied to regional elimination of malaria, control and prevent progression of malaria epidemics, and support other vaccines and drugs against resistant parasites and mutants. It is advantageous over other malaria vaccines in that it contains less polymorphisms and are not enforced by immune system in human hosts. There are two main methods for designing TBVs: 1) Plasmodium based TBVs such as Pfs25, Pfs28, and Pfs48/45. 2) Mosquito based TBVs necessary for the growth of parasites in vectors such as CPBAs1 and AnAPN1. The final roadmap proposed by WHO emphasizes on the production of TBV vaccines. Researchers hope they can produce multistage vaccines containing some antigens candidate for TBVs in future.

Keywords: Vaccine, Malaria, Transmission



P210

Evaluation of Single Nucleotide Polymorphisms of Multi Drug Resistance 1 (Pvmdr1) Gene, for Plasmodium Vivax Chloroquine Resistance in Hyperendemic Foci of Southeastern Iran

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Introduction: Currently Multidrug-resistant strains of *Plasmodium vivax* has increased in endemic countries. However, the molecular mechanisms for resistance of *Plasmodium vivax* to chloroquine is unknown. The purpose of the study were to determine the prevalence of mutant *pvm*dr1 genes which are correlated with susceptibility of *Plasmodium vivax* to multiple antimalarial drugs. **Methods:** Infected blood samples with *Plasmodium vivax* (n = 30) were collected during 2013–2015. The DNA were extracted from infected blood then *pvm*dr1 markers in all isolates were determined by using nested PCR and followed by sequencing the PCR product and finally comparison of the results with not mutant gene, in the Gene Bank. **Results:** In this study eighty percent (80%) were males and twenty percent (20%) were females. In all samples (100%) single nucleotide polymorphism was observed at codon F1076L (phenylalanine to Leucine) and Y976F (Tyrosine to phenylalanine), however none of the isolates carried the mutation at codon 1106 (ACC to ACT, both coding for Threonine). **Conclusion:** Although chloroquine is still an efficacious drug and the first-line treatment for *Plasmodium vivax* malaria in Iran. In this study the *pvm*dr1 mutation at codon F1076L and Y976F is reported for the first time in Iran. The *pvm*dr1 mutation could be an alarm for reduced susceptibility of the parasite to this drug.

Keywords: Pvmdr1, *Plasmodium Vivax*, Chloroquine, Drug Resistance



Laboratory and Transfusion Medicine P211 – P223

P211

Blood Collections, Components Preparation and Distribution in Iran during 2008-2012

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Background: The information about the dynamics of blood collections, components preparation and distribution in Iran were measured and compared during 2008 -2012. **Material and Methods** The survey instruments were based on collecting data from all 220 blood collections and blood processing centers over the country, registering them in the validated data base and reporting them to headquarter. **Result** Total blood collection increased during this period and in 2012 represented a 12.6 percent increase compared to 2008. On average, red blood cells, fresh frozen plasma and platelet concentrate were prepared from 95.5 ± 2.4 , 81 ± 3.8 and 47 ± 8.8 percent of all whole blood collections. From 2008 through 2011, the distribution of whole blood and fresh frozen plasma revealed different patterns. For whole blood, declines were noted, while for fresh frozen plasma increases were reported. In addition the distribution of red blood cells and platelet concentrate did not change considerably. In 2012, there was a decline in distribution of red blood cells, fresh frozen plasma and platelet concentrate. Between 2008 and 2012, the returned units of whole blood, red blood cells, fresh frozen plasma and platelet concentrate from hospitals were $13 \pm 0.4\%$, $5.4 \pm 1.4\%$, $1.2 \pm 0.2\%$ and $3 \pm 0.4\%$. Furthermore the mean percentage of outdated and discarded units was 3.6 ± 1 and 5.2 ± 4.6 . **Conclusion** This study as a first national survey of Iranian blood collections and distribution provides comprehensive information about the blood supply, component preparation and distribution and helps us to define Iranian Blood Transfusion Organization strategy for the future.

Keywords: Blood Collections, Blood Components, Distribution

P212

Transfusion-Transmitted Malaria in Iran: a Systematic Review of the Literature

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Background: Malaria is the most important transfusion-transmitted infection (TTI) in worldwide after viral hepatitis and human immunodeficiency virus (HIV) infection. The main objective of the present study was to review and evaluate the transmission of malaria via blood transfusion in Iran. **Methods:** In our systematic review study, a literature search was done in the following electronic databases: PubMed, Scopus, Google Scholar, Web of Science, Science Direct, scientific information database (SID), Magiran, IranMedex and Irandoc. The searches were limited to the published papers to English and Persian languages. All selected papers were reviewed and their data were extracted. **Results:** After search, it was determined that six papers are eligible to be included in this study. From 1963 to 1983, 344 cases of Transfusion-transmitted malaria (TTM) had been reported from different provinces of Iran. The most prevalent species of involved Plasmodium in investigated cases of TTM was *P. malariae* (79.24%). The screening results of 1,135 blood donors for malaria were negative by microscopic examination of peripheral blood smears and rapid diagnostic test (RDT) methods. **Conclusion:** Lack of TTM report from Iran in the last three decades indicates that the screening of blood donors through interviewing (donor selection) may be effective in the prevention of the occurrence of transfusion-transmitted malaria.

Keywords: Transfusion-Transmitted Malaria, Blood Transfusion, Donors, Screening, Iran

P213

Adverse Effects of Blood Transfusion in Patients with Burn Injury

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Introduction Uncontrolled bleeding is an important cause of increased transfusion in burn victims. Because the need for transfusions may span a long period of time, these patients may be at risk for more adverse events due to transfusion than other patient groups. **Methods** In this study Long-term complications of blood transfusions, such as, alloimmunization, iron overload and biochemical changes are discussed. **Results** Transfusion-related acute lung injury, transfusion-associated circulatory overload, and hemolytic transfusion reaction are deadly complications from blood transfusion. Common reactions in this study (eg, febrile nonhemolytic transfusion reaction, allergic reaction, hyper kalemia, bilirubinemia) are not life threatening. **Conclusions** Despite concerns about adverse correlation between increased number of transfusions and mortality in other clinical settings, we did not find this association in our study but every transfusion carries risks of immediate and delayed adverse events. Therefore, surgeon should prescribe transfusion for patients with burns only when absolutely necessary.

Keywords: Adverse Effects, Blood Transfusion, Burn Injury



P214

A Elementary Study of Human Cytomegalovirus (HCMV) in Whole Blood Bags

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Introduction: Transfusion-transmitted cytomegalovirus infection (TT-CMV) is known to cause significant morbidity and mortality in immunosuppressed patients particularly among allograft recipients and infants born with birth weights less than 1.5 kg. **Aims:** The aim of the study was to show the prevalence of CMV-DNA in whole blood /red cell components and evaluate safety for the patients. **Methods and materials:** 153 units each of whole blood or red cell components [CPDA1 RBC (n=88), Washed RBC (n=50), Whole Blood CPDA1 (n=1), Whole Blood Low Volum (n=1), Leukocytes Reduced detection of CMV-DNA in plasma was done by the nested polymerase chain reaction (Nested -PCR) using specific primers selected from highly conserved regions of major capsid protein (MCP) gene of human cytomegalovirus. In addition, CMV-IgM antibody of plasma were analyzed by serological methods. Data were analyzed using SPSS software (version 18). **Results:** Totally, 2 of 153 (1.3%) whole blood or red cell components were positive for CMV infection. Both viremia and anti-IgM CMV positivity were 0.65% (1/153), respectively. The CMV-DNA was detected in 2/88 CPDA1 RBC, but not in other products. **Conclusions:** Unscreened whole-blood derivatives can act as a vehicle for transmission of CMV infection, thus, screening for cytomegalovirus infection should be carried out at least for special groups of patients.

Keywords: Whole Blood Components, Cytomegalovirus, Iran

P215

The Effectiveness of Education Autologous Transfusion in Staffs\' Operating Room Knowledge

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Background: In Iran, Autologous transfusion has not been wide-spreading.(0.003%).By considering that official academic education about the issue is very insufficient, we tried to increased the knowledge of practionairs by planning a short term education. The research was aimed to evaluate the efficacy of short training course. **Materials and methods:** Thirty two operating room staff participated in a short educational course about autologus transfusion and related indications, contraindications, the method of procedures, advantages, disadvantage and adverse effects. The participants\' score of knowledge was assessed by a standard questionair before and after the end of coarse. Twenty questions reffered to knowledge of trainees about autologuos transfusion. Data of correct answers and peer pre and post test answers of each parcipitants were entered to SPSS version 18 (Chicago IL). The mean and standard deviation of pre and post test final score were compaired by paired T-test. **Results:** Totally 32 operating room staff which were enroled in the study. The mean of pretest correct answer was 32.64%±18 and the mean of post test correct answers was 75%±17 (p< 0.001). Minimum and maximum of pretest correct answer was varied between 0 to 75%. The same measures for post tests was varied between 42%-100%. The mean of improvement of knowledge of trainees was 5.08±3.36. **Conclusion:** The study has declaired the khnowledge of practionairs about autologous transfusion in Iran is lower than expected. However, sufficient education could overcome the issue.

Keywords: Autologous Transfusion, Education, Staffs\' Operating Room

P216

Blood Transfusion Acute Reactions in Hospitalized Patients of Kosar Hospital

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Background: Blood is a scarce and costly human resort and must be prescribed smartly and based on international and regional standards. Many hospitalized patients due to related complications, require suitable blood components for transfusion while there are hazards of transfusion reactions. These reactions are impacted by many causes varying beyond different geographic areas and medical centers. Our objecte was to evaluate blood transfusion acute reactions in hospitalized patients. **Materials and methods:** This cross-sectional descriptive study conducted among 23 reactions from 1035 transfusion attempts were assessed (in Kosar Hospital from April 2011 to April 2014. Patients were monitored for symptoms and changes in vital signs with in 24 hours after transfusion. The data from these participants were obtained by a check list (demographic, transfusion acute reactions and clinical presentations). Both descriptive and statistical analysis methods were applied. P value < 0.05. **Result:** The majority of reactions owned by platelet transfusion and packed cell .The most common clinical presentations were chill, and fever. The incidence rate of feveral non-hemolytic transfusion reaction (FNHTR) was more than allergic reactions. A correlation was observed between sex and history of previous reactions with blood transfusion reactions. **Conclusion:** The incidence of transfusion reactions in women (especially multiparous) and cases with past medical history of repeated blood transfusions was shown to be greater. Transfusion of packed cell was associated with allergic reaction and high platelet lifetime, associated with pulmonary reaction. To decrease these reactions, the utilize of leukoreduced blood products and blood components with short storage period is mandatory.

Keywords: Acute Adverse Reaction, Hospitalized Patients, Blood Transfusion

P217

Study of Rate and Causes of Blood Components

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Background: Blood transfusion is an integral part of medical practice and must be prescribed smartly and based on international and regional standards. Demand of blood and its components always outpace it supply .This emphasizes the need for proper utilization of blood and its components with preferably “No” or minimal wastage. The present study was undertaken to evaluate rate and causes of blood components discard among the Kosar Hospital. **Materials and methods:** This was a cross-sectional descriptive study conducted among all the blood components return forms of Kosar hospital in Qazvin city during the twelve months (March 2015 to March 2016). The data from these forms were obtained by a check list. Both descriptive and statistical analysis methods were applied. P value < 0.05 was significant. **Result:** The total amount of blood waste in our study was 10%. The highest rate of wastage pertained to PC (46.1%) and the lowest to WB (0.4%). The major cause of discard was attributed to being close to the expiry date (79.4%) and the minor cause was the detection of clot in blood units (0.1%). The highest discard rate of blood occurred in August (19.5%) and the lowest in October (12%). Operation room had the highest rate of blood waste (31%) and NICU the minimal loss (0.7). **Conclusion:** The significance of education and training about blood ordering and cold chain during transportation must be considered. Also successful hospital must be model.

Keywords: Blood Component, Transfusion



P218

Prevalence of HIV, Hepatitis B and Hepatitis C among First Time Blood Donors Who Use Confidential Unit Exclusion (CUE) in an Iranian Population (Kohgiluyeh and Buyer Ahmad Province)

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Introduction: The confidential unit exclusion (CUE) option has been used to increase blood safety at blood transfusion centers. This study aimed to compare the results from human immunodeficiency virus (HIV), hepatitis B surface (HBS) and hepatitis C virus (HCV) screening tests between first time blood donors CUE-positive and CUE-negative. **Material and Methods:** Analytical cross-sectional study was performed on all volunteer donors at Kohgiluyeh and Buyer Ahmad Blood Transfusion Organization from April 2005 to March 2014. The prevalence of disease markers (HBs Ag, HCV Ab, HIV Ab,) was compared between CUE-positive (“should not use”) and CUE-negative (“can be used”) donations. Data were analyzed by applying SPSS software and Chi-square statistical test. **Results:** During the study period, 180304 donors gave blood. A total of 169886 (94.2%) donors were male and 10418 (5.8%) were female. Self exclusion was chosen in 1950 (1.08%) donations. A total of 974 CUE responses from 49833 first time donors were analyzed. The prevalence of confirmed HBs Ag was 1.33% (13/974) among CUE-positive donations and 0.4% (219/48859) among CUE-negative donations ($p < 0.001$). The prevalence of confirmed anti-HCV was 0.8% (8/974) among CUE-positive donations and 0.1% (90/48859) among CUE-negative donations ($p < 0.0001$). Considering first-time donors, there was no HIV positive donation between two groups. **Conclusions:** Because of the higher prevalence of HBS and HCV positivity in blood donors who chose the CUE option, offering CUE to blood donors could be a potentially useful method for improving blood safety, since it could increase the detection of infected blood during the window period.

Keywords: Confidential Unit Exclusion, First Time Blood Donors, Disease Markers

P219

Evaluation of Blood and Blood Products Ordering and Their Utilization in Educational Hospitals of Gorgan in 1393 Year

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Introduction and aims: Because of the high importance of blood as a life-giving biological fluid in therapy Therefore, the precise request and subsequently the proper use of these products is essential in order to prevent loss briefly, this study was done to assess application and use of blood in educational Hospitals of Golestan in 1393 year. **Methods and materials:** Descriptive and analytical study was done in Gorgan, during the 12-month. The study was Retrospectiven TI (transfusion index) and C/T (crossmatch to transfusion ratio) indices were analyzed through Descriptive statistical tests. Finally TI and C/T were compared with standard values. Data were analyzed by SPSS 16 with about 95% Confidence. **Results:** TI and C/T ratio were 0.6, 1.63, respectively that was acceptable level compared to standard values acceptable. The rate of transfusion among all cross-matched units were 61%. **Conclusion:** The overall blood utilization with respect to mentioned indicators is satisfactory. However, according to recent studies and excessive and unreasonable demands for blood in the country’s hospitals, the presence of a strong and efficient surveillance system is necessary to control the amount of blood transfusion.

Keywords: Crossmatch, Blood Requisition and Utilization, Blood Transfusion



P220

WHO Guidelines on Good Manufacturing Practices for Blood Establishments

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Good manufacturing practice (GMP) is all elements in the established practice that will collectively lead to final products or services that consistently meet appropriate specifications and compliance with defined regulations. In recent years, safety and quality in the transfusion chain has become an important topic. Blood establishments should establish and maintain quality systems, based on GMP principles involving all activities that determine quality policy objectives and responsibilities, and should implement them by such means as quality planning, quality control, quality assurance and quality improvement. A GMP approach to manufacturing safe blood components that consistently meet predefined specifications and customers' expectations provides a model that allows for a documented system of incorporating quality into the entire process. When collecting and processing blood and plasma from human donors, GMP considerations should be addressed in a biological context due to the specific characteristics of materials of human origin. The guidelines in this article include: General GMP topics such as quality management, personnel, documentation, premises and equipment, qualification and validation, materials management, contract manufacturing, and complaints and recalls. GMP concepts such as quality risk management and product quality reviews. Topics specific to the manufacturing of blood components from donor selection to distribution of the final product.

Keywords: Good Manufacturing Practices, GMP, Blood Establishment

P221

Improving Access to Safe Blood Products through Local Production and Technology Transfer in Blood Establishments

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An estimate was made of the volume of plasma wasted in the world that would be potentially available for fractionation. The above estimates suggest that about 9.3 million litres of recovered plasma are wasted each year. Such wasted plasma has a market value of US\$ 650 to US\$ 1020 million, based on the current cost of recovered plasma that ranges from US\$ 70 to US\$ 110 per litre. If the wasted plasma were of sufficient quality to comply with the standards for fractionation, this volume of plasma would result in about 1.4 billion IU of FVIII at a mean recovery of 150 IU/l. In addition, the same volume of plasma can generate an additional 2.3 billion IU of FIX at a mean recovery of 250 IU/l. In addition, the same volume of recovered plasma could be fractionated into 37 tons of IG at a mean recovery of 4 g/l representing a market value of US\$ 1.5 billion. Finally, 230 tons of albumin, with a market value of US\$ 580 million calculated on a recovery of 25 gram/l, could be produced. This quantity would cover the needs of a population of 1.16 billion inhabitants based on a consumption of 200 kg/million population. Plasma can be fractionated to yield other derivatives.

Keywords: Plasma, Plasma Wasted, Plasma Fractionation, Blood Establishment



P222

Reviewing the Blood Ordering Schedule for Elective Surgeries (MSBOS)

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Our primary goal was to audit the blood utilization in elective surgeries in our hospital over a 2-year period and recommend a blood ordering schedule. A retrospective analysis of patients who underwent elective orthopedic surgeries over a period of 2 year was done. The data collected include patients' age, sex, type of surgical procedure, pre- and postoperative hemoglobin (Hb) levels, number of units crossmatched, returned, transfused, crossmatch to transfusion ratio (C:T), transfusion indices, estimated blood loss for each surgical procedure, and the actual and predicted fall in Hb. We propose a blood ordering schedule based on surgical blood ordering equation.

Keywords: MSBOS, Blood Utilization, Surgeries

P223

The Relationship between the Number of Blood Donation and Prevalence of Iron Deficiency Anemia in Male Blood Donors

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Iron deficiency and its related anemia, can be one of the possible consequences of regular blood donation. A male donor loses about 225 mg iron with each blood donation. Since the body iron stores are limited, iron depletion and the consequent anemia may result if the lost iron is not compensated. In a study reported by Simon in 2002, 8% of men who donated blood 4-5 times per year and 19% of men who donated blood every 8 weeks, suffered from iron deficiency. Iron deficiency anemia may have consequences such as reduce the donors' motivation for donating blood. Regarding the importance of the issue of iron deficiency in blood donors, several studies have been conducted in many countries. Therefore, we evaluated the status of iron deficiency and its anemia resulting among male blood donors.

Keywords: Iron Deficiency Anemia, Blood Donors



Laboratory and Viral Opportunistic Infections P224 – P227

P224

Routine Diagnostic Tests Used to Screening for CMV Infection: Can Alone be Reliable?

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Introduction: Human cytomegalovirus (HCMV) is the most common viral pathogen that causes morbidity, and mortality in immunocompromised patients. **Aims:** The aim of the study was to evaluate the frequency of active CMV infection by routine diagnostic tests in hemodialysis patients in Gorgan. **Methods and materials:** A total of 149 patients receiving hemodialysis were included in the study. Detection of CMV-DNA in plasma was done by the nested polymerase chain reaction (Nested -PCR) using specific primers selected from highly conserved regions of major capsid protein (MCP) gene of human cytomegalovirus. In addition, CMV-IgM antibody of plasma were measured by serological methods. Demographic and clinical data were entered and analyzed using SPSS software (version 18) and statistical methods. **Results:** The total prevalence of CMV infection was (6.7%) among the patients receiving hemodialysis, the rates of CMV-DNA and anti-CMV IgM positivity were 2.68% and 4.69%, respectively. One case showed both markers. CMV infection did not correlate with gender, age, ethnicity, duration of dialysis, and history of blood transfusions or time on dialysis. **Conclusion:** Accurate diagnosis of active CMV infection can, at least, reduces the incidence and prevalence of CMV among these patients.

Keywords: Human Cytomegalovirus, Hemodialysis Patients, Gorgan



P225

Positive and Negative Predictive Values for Hepatitis C Virus Diagnosis Over More Than 1000 Laboratories Participated In EQAP

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Hepatitis C as a manifold liver disease is caused by hepatitis C Virus (HCV) which can be transmitted through blood contacts, therefore it is important to recognize and control the infected individuals. Nowadays, diagnostic tests for hepatitis C, divided into serologic and molecular assays. The test used to diagnose HCV at the first level is an enzyme immunoassay (EIA) for anti-HCV immunoglobulin G. The problems of this assay are false results which may occur incidentally. In this study we checked the results of more than 1000 laboratories participated in External Quality Assessment Program (EQAP) for Anti-HCV tests in Iran during 19 laps. This survey shows the results of numerous medical laboratories which entered into the 19 periods of External Quality Assessment Program (EQAP) in 2015. About 1000 laboratories in average were participated in each period of this program asked to report the result of HCV test of an unknown sample and also represent the complete information about the applied method. Totally at the end of 19th program we had 17087 reported results for anti-HCV Ab. The rate of false results or error among the laboratories was different from 3.1 to 19.58 in percent. Totally, the error percentage of the laboratories for anti HCV test at the end of 19 times of EQAP was 8.71 percent. Laboratory managers must take a procedure to make sure about the methods specially to diagnose critical parameters which the results might change the patient's destiny.

Keywords: HCV, EQAP, IACLD, Quality Control, Infection, Laboratory, Iran

P226

Evaluation of Immunity against Hepatitis B Virus in Vaccine Recipients after Vaccination at Birthday

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Introduction: Hepatitis B virus (HBV) is one of the important agents of Hepatitis in Human. Prevention of HBV infection could be perform by vaccination with recombinant vaccine contain HBsAg. Immunization response is different among the vaccine recipients depend on age, vaccine quality and etc. HBV Vaccination has been done at birthday in Iran since 1994. This study evaluated immunization response in vaccine recipients less than 21 years old. **Materials and Methods:** We were evaluated anti-HBs among 182 patients less than 21 years old who referred to Payvand clinical laboratory in Tehran. They categorized to 4 age groups include <5, 5 to 10, 10 to 15 and 15 to 21 years old. Patient's serums were examined for anti-HBs by (ECL) Electrochemiluminescence method. Statistical analysis was performed using SPSS software. P-values < 0.05 were considered statistically significant. **Results:** Anti-HBs level >10 IU and <10 IU were considered as positive and negative respectively. 80.68% of <5 years group, 65.9% of 5 to 10 years group, 48.0% of 10 to 15 years group and 48.0% of 15 to 21 years old were positive. Another patients in all groups were negative. Protection level against HBV in 10 to 21 years old groups were less than other age groups significantly. **Discussion:** The weak responses to HBV vaccination in 10 to 21 age groups may be due to quality of vaccine were used, therefor it is recommended that vaccine recipients who have born between 1994 to 2004 years in Iran must be evaluate for anti-HBs level.

Keywords: HBV, Vaccination, At Birthday



P227

Investigation of Papilloma Virus Genotypes in Patient's Oral Lesions with Head and Neck Cancer in The Year 1393 in Iran

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Introduction: Squamous cell carcinoma comprises approximately 94% of all oral cavities. One reasons for this canceris Human Papilloma Virus (HPV) with different genotypes. Finding the most common genotypes will be helpful to control and prevent of spreading this cancer. **Materials and Method:** 70paraffinated blocks were collected from cancer department of Imam Khomeini hospital in Tehran. All of these samples included histopathological report of dysplastic lesions. They were deparaffinated.4 primers were designed for PCR. Then they were transferred to electrophoresis tank. Positive samples were sequenced by Mega 4. **Aims:** Finding the relation between papilloma virus and mouth cancer. Finding the common genotypes of HPV in mouth cancer Finding if there is a relation between sex and age with papilloma virus in mouth cancer. **Consideration of HPV spreading Conclusion:** 8 HPV+ samples include of 3 HPV+6and HPV+16. HPV6 is the cause of genital warts that can spread by skin contact or oral-sexualbehavior. 3 positive samples were found in women and the others werein men. (2% more in men). People between 30 to 45 is more sensitive for HPV than the other group. People up to 60 years old are sensitive too. All the samples were collected from different cities of Iran but most of the positive samples were found in Tehran and IslamShahr.

Keywords: Carcinoma, Human Papilloma Virus, Squamous Cell, Polymerase Chain Reaction (PCR)



Laboratory Sciences Education: Technical Officer (Technician) Supply P228

P228

Evaluation of Field Training by Student's Attitude of Laboratory Sciences in Tabriz University of Medical Science

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Background:Field training in the branch of clinical laboratory sciences is making up a large part of the practical technique. Because many lessons can be learned easily without a teacher but always practical techniques needed to a model and in the branch of clinical laboratory sciences, doing skills of tests could be affects the quality of the results. **Method:**In order to assess students' attitudes and Identifying of their problems investigation he research study was designed. The 73 of data collection was a questionnaire the course of field training had been passed by all of BSc medical laboratory science students **Results:**The results showed that 93.7% of trainees in the field have expressed which their previous training was different with their training in these Semesters. Duration of the training in different wards according to the 4.7% of trainee's attitude was desirable and the70% of supervision of coaches was irregular. % 11.4 of the communication behavior of healthcare workers was undesirable and insincere. **Conclusion:** There is a difference among what a Laboratory Sciences student learns in the class and what he or she should learn in the clinic and what the responsible of different sections expect and this fact reduces the students trust on education and academic disdain. The planners of this field should explain the students' duties in different levels by division of jobs and try to teach the students and future experts their real roles using learned skills and also correct process of testing and.

Keywords: Laboratory Sciences, Field Training , Practical Techniques



Molecular Diagnostics in Clinical Laboratories P229 – P244

P229

Up-regulation of miR-130b Expression Level and Down-Regulation of miR-218 Serve as Potential Biomarker in the Early Detection of Human Osteosarcoma

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Background: Osteosarcoma (OS) is a primary malignant bone tumor with high morbidity that principally emerges in children and adolescents. MiRNAs regulate a variety of normal physiologic processes and are involved in tumorigenesis and development of multiple malignancies, including OS. This study was aimed to evaluate the clinical significance of miR-130b and miR-218 in osteosarcoma patient. **Methods:** We utilized quantitative real-time PCR to evaluate the level of miR-130b and miR-218 expressions in OS patients and normal tissues and their relationship with clinicopathological features and survival in OS patients. **Results:** QRT-PCR indicated that miR-130b expression in tumor tissues was strongly elevated than adjacent non-tumor tissues ($P < 0.001$), while the level of miR-218 expression in osteosarcoma tissues was down-regulated than adjacent non-tumor tissues ($P < 0.001$). We evaluated the clinical significance of miR-130b and miR-218 in osteosarcoma. Clinical correlation analysis showed that increased expression of miR-130b and decreased expression of miR-218 were significantly associated with advanced tumor stage ($x_2 = 6.285$, $P < 0.009$ $x_2 = 7.172$, $P < 0.007$), distant metastasis ($x_2 = 5.528$ $P < 0.001$ $x_2 = 4.617$, $P < 0.001$) and size of tumor ($x_2 = 5.01$, $P = 0.013$ $x_2 = 4.271$, $P = 0.01$). **Conclusions:** Taken together, our data indicated that high miR-130b level and low level of miR-218 are associated with poor clinicopathological characteristics. Furthermore, miR-130b may play a key role in the progression of osteosarcoma.

Keywords: Mir-130b/218, Osteosarcoma, Regulation, Patient, Diagnosis



P230

TP53 Gene Polymorphism in Women Breast Cancer in Tabriz

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Background: One strong candidate for the genetic susceptibility to familial and or sporadic breast cancer is the TP53 gene polymorphism. The status of the three common TP53 gene polymorphisms in Iranian women with breast cancer is not known. The aim of our study was to analyzed three common TP53 gene polymorphisms (codon 72 BstUI and intron 6 MspI, as well as the Intron 3) and their haplotypes in Iranian women with breast cancer **Material & Method:** A total of 65 breast cancer and 65 non- cancerous breast specimens from the Department of Pathology collected and analyzed for the presence of three common TP53 polymorphisms by polymerase chain reaction. Samples were genotyped by polymerase chain reaction followed by variant specific restriction enzyme digestio **Result:** In our study, age grouping as >50 and ≤50 showed that the highest number of cancerous and non-cancerous patients was in the age group under 50, according to statistical tests, the difference was significant and recessive alleles of all three hot spots of TP53 had the highest frequency in the cancerous group. The majority of the cases with recessive alleles of all three hot spots of TP53 were in the age group ≤50. The difference between cancerous and noncancerous groups was statistically significant **Conclusion:** Based on our findings, it seems that recessive alleles in three hot spots of TP53 gene can solely increase the risk of the development of breast cancer. However, additional large studies are required to validate this association in different populations.

Keywords: Breast Cancer, PCR, Tumor-Suppressor Gene, Haplotype

P231

Genetic Polymorphism in DAOAT Gene in Schizophrenia Patients

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Introduction: Schizophrenia as bipolar disorder is a common and phenotypically variable disease. Genetical, environmental factors and mental disorders are the most important risk factors for schizophrenia. The aim of this study is to evaluate the polymorphism of gene DAOAT(D-amino acide oxidase activator) in schizophrenia patients. **Methods:** In a case control study, two hundred including 100 patients with schizophrenia and 100 controls were subjected in the study. After DNA extraction, the genotypes and the frequency of alleles were investigated by PCR and RFLP. Data analysis was done by MedCalc software version 12. **Results:** The frequency of TT , TG, GG, alleles were 34.3%,42.5%,23.2% in patients and 69.6%,21.8%,8.6% in and control individuals respectively. Significant association was seen between schizophrenia and the polymorphism of gene DAOAT.(p=0.0002) **Discussion and Conclusion:** The presence of allele G in 2588 T>G position of gene DAOAT can be considered as an important risk factor for schizophrenia. However further investigations on a larger population are needed to be done on this gene.

Keywords: Schizophrenia, T2588G Polymorphism, Gene DAOAT

P232

Molecular Epidemiology of Human Cytomegalovirus in Pterygium

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Introduction: Pterygium is a common ocular surface lesion, wing-shaped that most often refers to a benign growth of the conjunctiva and can extend onto the corneal surface. The presence of some oncogenic viruses in pterygium and the neoplastic nature of the lesion led us to the postulated involvement of the viruses in the etiology of pterygia. **Aims:** The aim of this study was to evaluate the prevalence and possible role of human cytomegalovirus (HCMV) in the formation of pterygia. **Methods and materials:** 50 tissue specimens of pterygium from the patients who underwent pterygium surgery as the case group and 10 conjunctival biopsy specimens of individuals without pterygium including the patients whom underwent cataract surgery, as controls, was tested by polymerase chain reaction (PCR) using specific primers selected from highly conserved regions of major capsid protein (MCP) gene of human cytomegalovirus. Data were analyzed using SPSS software, version 18. **Results:** 7 (14 %) patients with pterygium were positive for HCMV DNA with PCR, but none of the negative control groups displayed cytomegalovirus. The pterygium groups and the control groups were β -globin positive. Data were analyzed using SPSS software, version 18. **Conclusions:** HCMV DNA was not detected in all samples, leading us to the speculation a "hit-and-run" role for HCMV by inducing mutations in cellular genes, thereby facilitating neoplastic transformation.

Keywords: Human Cytomegalovirus, Pterygium, PCR, Gorgan, Iran

P233

Papillomavirus and Pterygium

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Introduction: Ophthalmic pterygium is a potentially vision-threatening lesion of unknown etiology that often extends on the corneal surface and has a worldwide distribution. Despite various studies, the pathogenesis of pterygium remains unclear and the involvement of human papillomavirus is controversial. **Aims:** We aimed to investigate the involvement of papillomavirus in pterygium formation. **Methods and materials:** This case-control study was done on 50 tissue specimens of pterygium from the patients who underwent pterygium surgery as the case group and 10 conjunctival biopsy specimens of individuals without pterygium including the patients whom underwent cataract surgery, as controls. The evidence of papillomavirus infection was tested by polymerase chain reaction (PCR). **Results:** None of the negative control group and samples displayed papillomavirus. The pterygium group and the control groups both were β -globin positive. **Conclusions:** The involvement of HPV in the pathogenesis of pterygium, although suggested by several studies but the current result suggest that papillomavirus might not act as a possible cause of pterygium formation but could play a synergistic role in the development.

Keywords: Pterygium, Human Papillomavirus, PCR



P234

Study of Molecular Association between CHEK2 1100delC Mutation and Breast Cancer

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Background & Objectives: Breast cancer is the most common cancer among women and the second most common cause of cancer death. CHEK2 gene was known as a tumor suppressor gene which it plays a role in DNA repair. Germ line mutations in CHEK2 have been associated with the cancer types in a number of countries. Therefore, the aim of this study was to investigate association between CHEK2 mutations and Breast Cancer in the Iranian population. **Methods:** This study involved 38 cases under the age of 45 and 62 cases over the age of 45. A blood samples were taked and DNA was successfully isolated from cases and healthy women. Allelic specific PCR were used to investigate the association between a deletion in CHEK2 of 1100delC CHEK2 gene mutations among 100 patients with breast cancer and 100 normal controls. **Results:** There were no significant differences between histopatological information in both groups. The 1100delC mutation was not found in the patients and controls. **Conclusion:** For the first time, these results demonstrate that a deletion in CHEK2 large deletion in exon 10 mutation has not been a genetic susceptibility factor for breast cancer in the Iranian population.

Keywords: Breast Cancer, CHEK2, 1100delC Mutation

P235

Evaluation of Relationship between Tumor Necrosis Factor Alpha Gene Polymorphisms Rs1800629 and Rs361525 and Recurrent Abortion

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Introduction: Recurrent Spontaneous Abortions (RSA) is defined as repeated occurrence of 2 or more miscarriages before 20th week of gestation. RSA is a multifactorial disorder that genetic factors play a crucial role in it. It seems polymorphisms in tumor necrosis factor alpha gene are involved in RSA. **Methods:** A Total of 50 women with repeated spontaneous abortions with unknown etiology as a case group and 50 women without history of abortion and with two successful pregnancy as a control group were selected referred patients to Alzahra, Jihad-e-keshavarzi and Taleqani hospitals in Tabriz screened for two following tumor necrosis factor alpha gene SNPs: rs1800629 and rs361525 by ARMS-PCR method and results were confirmed by sequencing. Statistical analysis was performed with SPSS V.23 software (Chi-square test (X²)). **Results:** In SNP (rs1800629) the frequency genotypes of Normal Homozygous (GG), Heterozygous (GA) and Mutant Homozygous (AA) in controls group were respectively 96%, 4% and 0% and in samples group were respectively 88%, 12% and 0%. In SNP (rs361525) the frequency genotypes of Normal Homozygous (GG), Heterozygous (GA) and Mutant Homozygous (AA) in controls group were respectively 92%, 8% and 0% and in samples group were respectively 96%, 4% and 0%. **Discussion and Conclusion:** The results of this study indicate that polymorphisms rs1800629 (p = 0.269) and rs361525 (p = 0.678) seems to be not related to the occurrence of recurrent abortion.

Keywords: SNP, Polymorphism, Tumor Necrosis Factor Alpha Gene, Recurrent Abortion

P236

Impression of CAG Three-Nucleotide Repeat Expansion in the Androgen Receptor Gene Among the Endometriosis Patients in Fars Province

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Objective: Endometriosis With an estimated frequency of 5%–10% among women of reproductive age, endometriosis is a common gynecologic disorder. Its gynecological characteristic is presence of endometrial glandular and stromal cells existing in the extra-uterine environment. A genetic variation in the androgen receptor (AR) has been associated with the risk of developing endometriosis. The association of tri-nucleotide (CAG) repeats in the androgen receptor (AR) gene is investigated in study. AR gene is located on the X chromosome. **METHOD:** the number of AR-CAG repeats in 50 clinically diagnosed endometriosis patients and 50 healthy individuals as control were randomly selected. Molecular analysis of AR-CAG repeats was performed by Nested PCR (polymerase chain reaction) amplification which followed by fragment analysis. The pattern of CAG repeat distribution evaluate by the GeneMarker software. **RESULTS:** The overall data analysis showed Endometriosis was documented in 50 women (stage I–II in 40% women and stage III–IV in 60% women). We found difference in the number of AR-CAG repeats between women with endometriosis and controls. For 2 Alleles frequently between In 2 groups (control & patient) were significantly ($p < 0/001$). The CAG repeat length ranged in endometriosis patients from 16 to 32 (mean \pm standard deviation = 25.8 ± 4.65) and for controls from 15 to 27 (mean \pm standard deviation, 22.78 ± 2.46) **CONCLUSION:** It is concluded that AR-CAG repeats length in the exon 1 contributed as a significant predisposing genetic factor for the endometriosis.

Keywords: Endometriosis, Androgen Receptor, CAG Repeats

P237

Etiology of Community-Acquired Pneumonia and Diagnostic Yields of Microbiological Methods

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Introduction Despite recent advances in microbiological techniques, the etiology of community-acquired pneumonia (CAP) is still not well described. We applied polymerase chain reaction (PCR) and conventional methods to describe etiology of CAP in hospitalized adults and evaluated their respective diagnostic yields. **methods:** 267 CAP patients were enrolled consecutively over our 3-year prospective study. Conventional methods (i.e., bacterial cultures, urinary antigen assays, serology) were combined with nasopharyngeal (NP) and oropharyngeal (OP) swab samples analyzed by real-time quantitative PCR (qPCR) for bacteria and 12 types of respiratory viruses. During winter and spring, viruses were detected more frequently (45%, $P=0.01$) and usually in combination with bacteria (39%). PCR improved diagnostic yield by 8% in 64 cases with complete sampling (and by 15% in all patients); 5% for detection of bacteria; 19% for viruses ($P=0.04$); and 16% for detection of ≥ 1 copathogen. Real-time speed slightly positive for *S. pneumoniae* considerably more than the swab to swab OP NP ($P < 0.001$), respectively. **Conclusion:** It was found that the most frequently detected viruses *S. pneumoniae* and are usually common pathogens. Bacterial infection - a common viral infection is more common in winter and spring are pure. An important finding is the management of CAP.

Keywords: Community-Acquired Pneumonia, Etiology, Microbiology, Diagnosis



P238

Overexpression of miR-21 in Jaundice Newborn Infants

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Background & Objective: Jaundice, potentially lethal encephalopathy, is a disease with increased serum bilirubin. Neonatal physiologic jaundice is the most common disease of newborn infants. It is largely due to many aspects of liver physiological functions are not developed at birth time. miRNAs are involved in the regulation of liver functions and knowledge of their role will lead in understanding the mechanism of liver function at the molecular level. **Materials & methods:** The present cross-sectional study was conducted on 60 newborn infants including 35 patients and 25 control in Tabriz Children's Hospital, Iran, 2015. The level of alanine aminotransferase (ALT), aspartate aminotransferase (AST), alkaline phosphatase (ALP) and lactate dehydrogenase (LDH) and the expression of miR-21 were investigated in Venous blood by spectrophotometry and real-time PCR. Data was analyzed using SPSS18 statistical software. **Results:** In the present study bilirubin, AST, ALP and LDH serum levels and expression of miR-21 were significantly higher in newborns with jaundice compared to controls ($p < 0.05$). No significant differences was found in the serum level of ALT between two the studies group ($p = 0.1$). The relationship between ALT, AST, LDH, ALP and bilirubin serum levels with miR-21 expression were examined and has found no significant association between them. **Conclusion:** In this study, despite the overexpression of miR-21 no significant relationship was observed compared to liver panel, however, miRNAs may be used as a marker for diagnosis of liver disorders.

Keywords: Jaundice, miR-21, AST, ALT, LDH, ALP, Bilirubin

P239

Genetic Linkage Analysis of DFNB22 Locus in a Group of Families with Autosomal Recessive Nonsyndromic Hearing Loss in Khuzestan Province of Iran

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Introduction: Hearing loss (HL) is the most common sensory disorder, affects 1 in 500 newborns. About 80% of genetic HL is classified as nonsyndromic deafness. over 115 nonsyndromic loci have been identified in autosomal recessive nonsyndromic hearing loss (ARNSHL). The aim of this study is to identify molecular cause of deafness by investigating genetic linkage analysis for DFNB22 locus in ARNSHL families. **Materials & Methods:** In this Descriptive study, 400 samples from 25 Iranian consanguinity families with 2 or more patients, segregating as an ARNSHL, were selected from khuzestan. The patients have been sequenced for assaying the presence of mutations in GJB2 gene (DFNB1 locus), then negative samples have been tested to determine the prevalence of DFNB22. Then families were investigated for homozygosity mapping to the DFNB22 using STR markers, PCR and polyacrylamide gels. **Results:** Findings show GJB2 pathogenic mutation in 3 of 25 families (12%) by sequencing GJB2 coding region. Also genetic linkage analysis show no relationship between DFNB22 locus and deafness in Khuzestan province. **Conclusion:** The study is part of a national project to determine the prevalence of loci caused deafness in different populations involved in Iran. The results of this study can be used to design Disease-specific panel detection of deafness for Iranian. Based on the findings, this is a rare locus involved in deafness, so it can be exclude from proprietary panel design for Iranian population, and other common genes such as GJB2, SLC26A30, MYO15A, OTOF and CDH23 be on top priority for panel designing.

Keywords: DFNB22 Locus, Autosomal Recessive Non-Syndromic Hearing Loss, Genetic Linkage



P240

Determination of Hepatitis B Virus Genotypes in Yazd, Central Province of Iran

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Introduction: Hepatitis B virus (HBV) infects the liver and causes acute and chronic hepatitis, hepatocellular carcinoma and cirrhosis. HBV has been divided to eight genotypes (A-H) and subgenotypes of A, B, C and F. For the first time, we determined HBV genotypes in infected samples by INNO-LiPA method in Yazd, central province of Iran. **Materials and Methods:** This study was performed on samples suspected of HBV infection. The sera of fifteen out of ninety-five samples that had shown positive results by RT-PCR were used for HBV genotyping by using INNO-LiPA HBV genotyping assay. **Results:** Seven (46.7%) out of fifteen samples were female. The mean age of the patients was 37.8 ± 14.3 years. The average number copy of HBV in infected samples was $1.04 \times 10^6 \pm 4.74 \times 10^5$ Copies/ml. All fifteen infected samples had genotype D. **Conclusion:** Our results showed that HBV genotype D was the only detectable genotype in Yazd, central province of Iran. A further study with a larger sample size in different provinces of Iran is needed to identify HBV genotypes in Iran.

Keywords: HBV Genotyping, Hepatitis B Virus, INNO-LIPA

P241

Application Real Time PCR in Respiratory System Infectin

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Molecular diagnosis of pneumonia have the potential to improve the detection of pathogens in patients with lower respiratory tract infection . At present limitation of molecular techniques prevents its widespread use, but future developments will likely lead to the inclusion of these tests in routine diagnostic evaluation. Laboratory diagnosis of pneumonia are the main reason of this studies. Recent advances in diagnostic technologies, have greatly improved the ability of detection of respiratory pathogens. However, determining the cause of bacterial pneumonia is a challenge, especially in children. Rapid detection of pathogens in individual case to achieve the best clinical management, public health surveillance, and control is very important. lower respiratory tract infection included many deaths , but most definitive diagnosis by microbiological culture methods or traditional serology is not achieved. In addition, culture of some specific organisms may have a problem, or need long time. Molecular techniques have the potential to improve diagnostic performance and reduce the time diagnosis of bacteria. This technique also useful in determining drug sensitivity and understanding of transmission and outbreaks. currently , the PCR reaction is The most common technique that used. limitations including high cost, need for specialized equipment, and false positive and negative results.

Keywords: Pneumonia, Molecular Techniques, Respiratory System Infectin



P242

Rapid Molecular Detection of Salmonella spp and Salmonella Enteritidis Trains with Uniplex PCR

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Background and Aim: Salmonella is an important cause of gastroenteritis. They typically identified by the culture, which is a time-consuming method and may not have done sufficient accuracy. For this reason, in this study the use of Uniplex PCR for rapid detection of genus Salmonella and species enteritidis instead of the usual method of cultivation was examined. **Materials and Methods:** Specific primers of the gene *invA* genus Salmonella and the gene *ppp* species enteritidis were designed from the sequencing of the bacterial chromosome genomic. DNA of clinical isolates were identified by standard methods, were extracted. Uniplex PCR was performed by the primers company Bionic Korea. To investigate the specific primer, used of Enterobacteriaceae and gram-positive cocci. Bands with molecular markers was compared and assessed. PCR products to final approval, sequenced. **Conclusion:** This study showed that in less than 3 hours, Uniplex PCR could identify the genus Salmonella and species enteritidis by at least 50 colony forming units specifically recognized that. While the time required in the usual method of cultivation 3 to 4 days which can be used as an alternative. **Results:** The results showed that Uniplex PCR primers were completely unique and specific band was produced. Primers with none of Enterobacteriaceae and gram-positive cocci bacteria did not make a product. Results showed that Uniplex PCR reaction products with gene sequencing *invA* and gene *ppp* species of Salmonella enteritidis consistent.

Keywords: Salmonella, Enteritidis, Molecular Detection, Uniplex PCR

P243

Evaluation of H.Pylori Infection and IL23R Gene Polymorphism in Iranian Dyspeptic Subjects

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CagA strains of H.pylori (Hp) are known to be associated with gastroduodenal diseases. Polymorphisms in inflammation related genes, such as cytokines and their receptors, were thought to partly determine the outcome of Hp infection and the progression of gastritis. It is supposed that interleukin 23 receptor (IL23R), a basic cytokine receptor in the inflammatory IL-17/IL-23 axis, may be related to gastritis. In the present study, we evaluated the association of IL23R +2199 rs10889677 polymorphism and cagA positivity with chronic gastritis. In addition, we studied the infiltration of polymorphonuclear (PMN) and mononuclear (MN) Leukocytes into surrounding tissues of corpus. Biopsies taken from the corpus of the patients were classified as two groups: Hp-infected and Hp-uninfected. The severity of gastritis was graded from normal to severe, chronic gastritis and chronic active gastritis. Virulence factor, cagA, was evaluated using PCR and the polymorphism in IL23R was investigated by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP). AA and AC carriers of IL23R +2199 polymorphism, but not CC genotype in Hp-uninfected patients, were not associated with cellular infiltration and gastritis in both groups ($p > 0.05$). CagA positivity was significantly associated with increased risk of PMN ($P = 0.013$), but not with MN infiltration ($P = 0.069$). Also gastritis was found to be associated with cagA positivity ($P = 0.044$). Our results show decreased Hp infection probability in patients with CC genotype of 2199 +IL23R. According to the clinical and pathological features in Hp-infected group, IL23R polymorphism doesn't influence chronic gastritis and chronic active gastritis.

Keywords: IL23R, Polymorphism, Helicobacter Pylori, Gastritis



P244

Cancer Screening with Circulating Tumor Cells: Liquid Biopsy

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One of the most active areas of translational cancer research is the detection and molecular characterization of circulating tumor cells (CTCs). There are more than 400 clinical studies having included CTCs as a biomarker. The aims of research on CTCs include 1) stratification and real-time monitoring of therapies 2) estimation of the risk for metastatic relapse or metastatic progression (prognostic information), 3) identification of therapeutic targets and 4) resistance mechanisms understanding metastasis development in cancer. A significant number of promising CTC-detection procedures have been established in recent years. This review focuses on the technologies used for the detection and enrichment of CTCs. We summary and discuss the current technologies that are based on manipulating the biological and physical properties of CTCs. A number of advanced technologies to improve methods for CTC detection have recently been developed, including CTC microchips, filtration devices, quantitative reverse-transcription PCR assays, and automated microscopy systems. However molecular-characterization studies have indicated that CTCs are very heterogeneous. Analysis of the behavior of CTC can, in the future, contribute to evaluate the efficacy of targeted therapy early during the course of the disease, sparing patients unnecessary treatment but also to reduce the costs for the health system and to downsize the extent and length of clinical studies.

Keywords: Circulating Tumor Cells, Liquid Biopsy, Cell Free DNA, Biomarker



Risk Management in Laboratory 245 - 247

P245

The Importance of Pre- and Post-Analytical Errors in Clinical Laboratories and Technological Solutions

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Laboratory tests are complex. Medical laboratories have focused their attention on quality control methods and quality assessment programs. However, an increasing amount of evidence accumulated in recent years reveals that quality in medical laboratories cannot be guaranteed by just focusing on merely analytical aspects. The recent surveys conclude that many mistakes occur more frequently before (pre-analytical) and after (post-analytical) the conducting the test. Most mistakes are caused by pre-analytical causes (about 55% of total errors), while a high error rate (about 35% of total errors) has been found in the post-analytical stage. Errors resulted from analytical problems have been significantly reduced, but there is evidence that pre-analytical and post-analytical errors may have significant impact on patients ending. Listing the most frequent pre- and post-analytical errors and describing useful advices on practical issues for reducing them would be of great importance. Wrong identification of the patient, sample mismatch during sample withdrawal, wrong procedure for specimen collection, errors in specimen transportation are among the most serious errors that are performed by non-laboratory personnel. So, technological solutions, such as computerized order-entry systems, bar-coding identification of specimens and patients have the potential to make laboratory services safer and more reliable.

Keywords: Errors, Pre-Analytical, Post-Analytical, Clinical Laboratory

P246

Review of Risk Management

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Introduction: Clinical laboratory tests play an integral role in medical decision-making and as such must be reliable and accurate. Unfortunately, no laboratory tests or devices are foolproof and errors can occur at pre-analytical, analytical and post-analytical phases of testing. Evaluating possible conditions that could lead to errors and outlining the necessary steps to detect and prevent errors before they cause patient harm is therefore an important part of laboratory testing. This can be achieved through the practice of risk management. **Risk definition:** Risk is defined as the chance of suffering or encountering harm or loss. Risk can be estimated through a combination of the probability of occurrence of harm and the severity of that harm. **Risk analysis methods:** Risk analysis can be divided into two main parts, as described in CLSI document EP18. The first part involves a failure modes and effects analysis (FMEA) and the second part entails reducing the rate of observed failures through a failure reporting and corrective action system (FRACAS). **Laboratory risk management:** Although risk management techniques and standards have traditionally been targeted to manufacturers, new guidelines such as CLSI document EP23-A are evolving to introduce risk management principles to the clinical laboratory. It is therefore important to assess and prioritize risks and determine what level of risk is acceptable in the clinical laboratory. This document is directed toward laboratory staff and outlines how to develop and maintain a quality control plan (QCP) for medical laboratory testing based on industrial risk management principles.

Keywords: Risk, Risk Management, Clinical Laboratory Tests

P247

Risk Management, Uncertainty Management, Preventive and Quality Assurance Management

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Nowadays risk management considers as one of the most important tool for strategic management. For many of people risk means probability of loss or damage which does not proper conception, its proper definition is “an uncertainty” in the result, or performance or conclusion of the process. Various examinations according to standard operation procedures (SOPs) by using of simple to sophisticated lab instruments and kits, potential for infection transition to employee or environment or patient vice versa. Work scope definition, Risk Identification, analysis, evaluation in every of work section with using of statistical or management tool. considering admission, proper and safe sampling collection, dispatch and delivery, risk of good laboratory practice (GLP) failure, employee skill and knowledge lacking, mistake technic, instrument fails are the scope of laboratory of risk management. Human risk (admission, sampling collection, (pre-examination fail), result registration and reporting fail are very common risk in the clinical laboratory. Risk management is preventative and quality assurance management together with protection and safety management with precise uncertainty handling.

Keywords: Uncertainty, Risk Management, Scope, Risk Identification, Analysis, Evaluation, Quality Assurance and Preventative Management

P249

Prevalence of Allergic Diseases in HIV Patients Referred to Tehran Valieasr Hospital, and It's Relationship with The CD8 + and CD4 + Lymphocytes, Eosinophils and Basophils and Blood Tryptase Levels between the Years 2013 - 2015

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Allergy is common in HIV. Allergy may occur at higher CD4 counts and can begin treatment in presence of allergy in higher CD4 counts. This study was conducted on HIV patients who referred to Valieasr hospital Laboratory or center for counseling of behavioral disorders. Allergy by history taking and questionnaire, numbers of CD4+ and CD8+ cells by flowcytometry, basophils and eosinophils with cell counter and blood Tryptase levels by ELISA were determined. Above parameters between the patients with and without allergy were compared. Allergy prevalence in HIV patients was 52.6%. There were no significant relation between the rate of CD4+ and CD8+ cells, number of eosinophils and basophils and allergy. There were significant relationship between age ($P=0.011$) and duration of HIV ($P=0.019$) and Allergy. The mean age of patients with allergy (35.4 years) was less than patients without allergy (41.96 years). The mean duration of HIV in patients with allergy was 6.90 years and in patients without allergy was 4.70 years. Tryptase average serum levels in HIV+ patients was 4.90 ng/ml and was not significantly different between patients with allergy and without allergy ($P=0.450$). Allergy is increase in HIV and more impressed with nature and duration of disease than immune status and number of CD4+ cells. Lack of correlation between number of CD4+ cells and allergy may be due to dysfunction of CD4+ cells rather than their count. Serum tryptase level in HIV patients is similar to normal population. Numbers and function of mast cells appear to be not affected by HIV.

Keywords: HIV, Allergies, Tryptase, CD4, Eosinophils, Basophils

P250

HLA Genes as Modifiers of Response to IFN- β -1a Therapy in Relapsing-Remitting Multiple Sclerosis

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Several candidate genes have been investigated as potential modifiers of response to IFN- β therapy in multiple sclerosis (MS). The role of HLA genes in this context is still controversial. This study aimed to investigate the influence of HLA class I and class II genes in the response to IFN- β in relapsing-remitting multiple sclerosis patients (RRMS). In this cohort study, 231 RRMS patients which classified into IFN- β responders ($n=146$) and non-responders ($n=85$) based on strict clinical criteria, as well as 180 ethnic-matched healthy controls were analyzed. Clinical outcome of IFN- β therapy particularly EDSS scores were recorded during 2 years follow-up since initiation of immunotherapy. HLA-A, -B and -DRB1 alleles and haplotypes were determined by using PCR-SSP method and data were analyzed in relation to treatment failure. Increased frequencies of HLA-DRB1*04 allele and HLA-A*03-B*44-DRB1*04 haplotype ($P=0.008$ and $P=0.07$ respectively) and decreased frequency of HLA-B*15 ($P=0.03$) were associated with better response to IFN- β treatment. The responders had higher frequency of HLA-A*03, DRB1*04 and DRB1*15 ($P=0.02$, $P=0.02$ and $P=0.03$ respectively) and lower frequencies of HLA-A*02, B*55 and DRB1*14 ($P=0.007$, $P=0.03$ and $P=0.006$ respectively) compared to healthy controls. The HLA-A*01-B*51-DRB1*04 and A*03-B*44-DRB1*04 haplotypes conferred susceptibility to multiple sclerosis and HLA-A*01-B*35-DRB1*13, A*11-B*35-DRB1*01, A*11-B*35-DRB1*11 and A*26-B*55-DRB1*04 were negatively associated with MS. The possibility of genetic screening particularly HLA typing prior to starting IFN- β therapy for MS may not only permit the identification of likely responders or non-responders but may also reveal the more genetic underpinnings of this neurological autoimmune disease.

Keywords: HLA, IFN- β , Multiple Sclerosis



P251

Impaired Responses to IL-12 in Patients with Disseminated BCG Infection

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Introduction: In Iran, Bacillus Calmette–GuÉrin (BCG) sub strain Pasteur vaccine is recommended for all infants and neonates to prevent tuberculosis. However, Because of the live attenuated bacteria, there is still a risk to cause infection with this Mycobacterium bovis strain. Disseminated infections among other complications are even rarer and have occurred in children with immunodeficiency disorders such as mendelian susceptibility to mycobacterial disease (MSMD). MSMD is a clinical syndrome that predisposes otherwise apparently healthy individuals to infections caused by weakly virulent mycobacteria, such as BCG and environmental mycobacteria (EM) which could be due to defects in some element of the interleukin (IL)-12/IL-23–IFN-g axis. The aim of this study was to investigate Interleukin-12 cytokine axis in patients with disseminated BCG infection. **Methods:** This study was performed on 31 children who referred to children’s medical center. They had disseminated BCG infections. Whole blood cell culture was performed in presence of BCG and IL12 stimulators. The supernatants were assayed for IFN-g by ELISA method. **Results:** In-vitro studies on 31 Iranian patients with disseminated BCG infections with the average age of 43 months showed that 9 cases had impaired response to IL-12. Among them, 7 cases had related parents (78%). **Conclusions:** It is recommended to prevent BCG complications, screening be performed for MSMD before BCG inoculation in individuals with positive family history of primary immunodeficiency diseases (PIDs) and residents of areas with high frequency of consanguinity.

Keywords: Disseminated BCG Infection, Mendelian Susceptibility To Mycobacterial Diseases, Interleukin-12 Cytokine Axis



The Role of Leadership and Middle Management in Laboratory P252

P252

Leadership Style in Middle-Level Managers of Clinical Laboratories

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The success of an organization to achieve goals depends on how to manage affairs and effective styles of a manager's leadership. This is true in all organizations including clinical laboratories. The present research is of systematic review type. The purpose of this study is to introduce, assess and explain the leadership style of middle management in organizations, especially health-medical organizations and clinical laboratories. Considering the research purpose, related keywords selected and in order to find related resources to the subject, in addition to library studies, several explorer engines used as required. The present research includes obtained results of 30 authentic articles, books, theses and sites related to our selected subject. Results of different studies in clinical laboratories of hospitals of medical sciences university indicated that selecting managers depended on the type of their academic degree not its level as more than 80% of managers with Ph.D. or higher degrees graduated with a degree of medical sciences. Mostly, they believe that leadership is their duty; utility equals to more efficiency and pay no attention to its humanitarian aspect. In order to have an effective leadership, managers of medical sciences universities should pass formal and informal courses of management and not only selected based on higher degrees.

Keywords: Leadership Style, Effective Leadership, Managers, Clinical Laboratories



Workshops

W1

Pre – Transfusion Testing to Detect RBC Alloantibodies

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The patients ABO group and Rh type must be determined in order to transfuse ABO-and Rh compatible components. The serum or plasma must be tested for expected and unexpected antibodies before components containing red cells are issued for transfusion. It has been proven that red cell transfusions are a valuable health care resource especially for thalassemics, myeloproliferative disorders, hematological disorders, end stage renal failure, leukemia and organ transplant patients. Development of allo-antibodies to red cell antigens is an important immune mediated delayed hemolytic transfusion reaction. It is a matter of great concern in multi-transfused patients and in patients who have had multiple pregnancies. Allo-immunization results from disparity between the donor and patient antigens. Allo-immunization occurs when incompatible antigens introduced in an immune-competent host. Alloimmunization against RBCs can result in delayed hemolytic transfusion reactions which can range from destruction of RBCs within hours or even minutes to decrease survival of RBCs or can cause hemolytic disease in newborns. Development of allo antibodies thus complicates and limits transfusion therapy, contributing not only to technical complications but also to morbidity and mortality. The type and screen (T&S) protocol is currently the most widely accepted pretransfusion testing to detect alloimmunization in patient with already exposed to incompatible RBC antigens. The type and screen test has been proven to be safe, efficient, and beneficial to the transfusion practice of blood bank hospitals.

W2

Review of EQA Program in Europe with Emphasis on Quality Improvement of Lab Clinical

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- Lab Registration of labs.
- Sample Providing & Validation
- Transport/ Distribution
- Data Analysis
- Report
- Using result for improvement Quality

W3

Common ELISA Sources of Error

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The enzyme-linked immunosorbent assay (ELISA) is one of the most sensitive, accurate and reliable methods available in clinical laboratories. Like other clinical laboratory methods ELISA method errors include pre analytical, analytical and post analytical errors. In this workshop we discuss about analytical errors in below topics: Errors that cause imprecision: Precision is the ability of the assay to consistently repeat and reproduce a result from the same specimen. Repeatability and reproducibility, are two aspects of precision. Errors that cause imprecision lead to inappropriate repeatability and reproducibility and often are due to random laboratory errors. Errors that cause inaccuracy: Accuracy is how close a measured value is to the actual value. Errors that cause inaccuracy lead to bias beyond the acceptable range of inaccuracy and usually occur when a systematic error happened. Errors that cause decrease of sensitivity: sensitivity represents the smallest amount of a substance in a sample that can accurately be measured by an assay. Errors that cause decrease of sensitivity lead to decrease of analytical sensitivity and usually results from problems that affect calibration curve. Assay sources of variation: There are also other assay sources of error that need to be addressed when performing an ELISA assay. These include some of errors depend on the nature of assay methods and does not from laboratory errors and notice of them is necessary for immunoassay personnel. (for example free thyroid hormone assays).

W4

The HLA Typing by SBT Method

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The HLA Everyone has several antigens located on the surface of his/her leukocytes. One particular group of these antigens is called the HLA (Human Leukocyte Antigens). It's controlled by a set of genes located next to each other on chromosome 6 called the Major Histocompatibility Complex (MHC). The test that determines which HLA antigens are present is called: Tissue typing or HLA typing. Traditionally, HLA typing was done using serological techniques but Now, HLA typing is predominantly done using molecular techniques: Individual's DNA is isolated. PCR is used to amplify specific HLA genes. Genes are sequenced to determine which alleles are present. HLA typing by SBT provides high resolution HLA typing with at least 4 digits of each gene and it's required for unrelated bone marrow and stem-cell transplantation. HLA by SBT (Sanger method) at glance: High Resolution typing (up to 4th digit) Ambiguity resolution More precise match of donor to recipient where indicated Simplified multi-locus typing Ability to batch process large number of samples Precision / Traceability / Quality Assurance.



W5

Introduction of Immunoassay Techniques (With Emphasis on Labeled Immunoassay Techniques)

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Global statistics shows that more than 70 percent of diseases are diagnosed by laboratory medicine. This finding shows the importance of laboratory medicine and clinical pathology in diagnostic procedures. Accordingly, the introduction of a rapid, sensitive and highly specific method to detect biological molecules in human samples seems to be necessary. Nowadays, immunoassay techniques are commonly used to detect and determine the concentration of biological molecules. All types of Immunoassays share a common principle which is the interaction between antibody (Ab) and antigen (Ag) to make Ab-Ag complex. Of note, Immunoassay techniques can be categorized into quantitative and qualitative methods. Immunological techniques used for qualitative purposes include passive gel diffusion, immunoelectrophoresis (IEP), western blotting and dot blotting. However, there are many type of immunochemical methods with ability to quantitate the concentration of an analyte including radial diffusion and electroimmunoassays, turbidimetric and nephelometric assays and finally labeled immunochemical assays. In this workshop, the aforementioned methods will be discussed and also new techniques and approaches will be reviewed. In addition, the clinical importance of each method will be mentioned.

W6

Interfering Antibodies in Immunoassay

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Immunoassay are fast, easy, inexpensive and a robust tools in clinical laboratories, aid to determine the concentration of wide variety of analytes ranging from hormones, tumor markers, antibodies, to proteins and drugs in serum, cerebral fluid and other fluid bodies. Immunoassay have some challenges. An important sources of immunoassay challenges is interference. Human endogenous antibodies has been known to be a potential source of Interference in immunoassay that may alter antibody binding. Interfering, endogenous antibodies, causing either falsely elevated or less commonly falsely decreased erroneous values. The interfering antibodies are categorized in three type, hetrophillic antibodies, anti-animal antibodies, autoantibodies. The possibility of interfering antibody must be recognizes in immunoassay to prevent misinterpretation of patients results and subsequent wrong diagnosis. Antibody interference in immunoassay can be reduced or removed by Serial dilution, precipitation or ultrafiltration and adding of blocking agents from some species as antibody reagents.



W7

Laboratory Tests and Diagnostic Probabilities

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The purpose of doing laboratory tests is to reduce clinical uncertainty. To this end, it is necessary to integrate uncertainty for the presence of a certain condition before doing a test (pre-test probability) with the test result to obtain a reduced uncertainty (post-test probability). The Bayesian statistics is to boil down the data on the patient status with the data on the diagnostic accuracy of laboratory tests, i.e. clinical sensitivity and specificity, to post-test probabilities. Applying such calculations, helps to select appropriate tests for patients, to better interpret the results, and make clinical decisions that are more correct.

W8

Novel Findings of Molecular Laboratory: Multiplex Tandem PCR and its Importance in Personalized Medicine

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Multiplexed tandem PCR (MT-PCR) is a process for highly multiplexed gene expression profiling. In the first step, multiple primer pairs are added to the nucleic acid to be analyzed together with reverse transcriptase and Taq DNA polymerase. Following reverse transcription, the multiplexed amplicons are simultaneously amplified for a small number of cycles so as to avoid competition between amplicons. The reaction product is then diluted and analyzed in multiple individual PCRs using primers nested inside the primers used for the multiplexed amplification. As the second PCR uses a template enriched in the amplicons of interest, the conditions can be optimized to significantly reduce 'primer dimer' formation allowing the method to be used for quantification. With this method we can move forward Personalized Medicine. As Personalized Medicine is a new window in the field of medicine which focus on the unique individual diagnostic by the use of decisions, methods and suitable medical devices which are designed for each person in this approach specialized test is often a good choice and better treatment on the basis of genetic or molecular background. The use of genetic data plays a crucial role in different aspects of Personalized Medicine. Hence With MT PCR method each patient sample can be analysis for multiple pathogens in less than 4 hours which make this methods feasible to be used in therapeutic centers, hospitals and clinical laboratories.

Authors Index



- Abasi, Y., P44
 Abbasi Oshaghi, E., O37, P21, P22, P23, P62
 Abbasi, E., P120
 Abbassi Ghamsari, K., P8
 Abbaszade Dibavar, M., P77
 Abdi, M., P131, P133, P176
 Abd-Nikfarjam, B., P82
 Abhari, A.R., P238
 Abolhasani, H., P228
 Abtahi, B., O53
 Adhami, N., P126
 Adineh, M., P82
 Aflatoonian, R., P60
 Afshar, H., P197
 Afshar, P., O62, P135, P205
 Afshari, R., P9
 Afsharian, P., P60
 Afshin, S., O43
 Aghamohammadi, A., O112
 Ahadizadeh, A., O67, P179, P199
 Ahadizadeh, M., O67, P179, P199
 Ahanchian, A.R., P206
 Ahangar Oskouee, M., P230
 Ahmad Monfared, R., P90
 Ahmad Por, A., P208
 Ahmadi, A., P193, P245
 Ahmadi, N., P244
 Ahmadi, Z.S., P119
 Ahmadvand, D., O42
 Ahokhosh, M., P62
 Ajami, A., P208
 Akbari Ayezloy, E., O66
 Akbari, H., O5, O7
 Akbarzadeh Khiavi, T., O14
 Akhavan Sepahy, A., P81
 Alberto Sinico, R., O49
 Aliasgharpour, M., O72
 Alimohammadi, S., P15
 AliMohammadi, H., P118
 Alipoor, B., P63
 Alipur Aspokolay, M., P80
 Alizade, H., P113
 Alizadeh, S.A., P234
 Almasi, G., P86
 Amani Ghayum, S., P157
 Amanollahi, E., O43
 Amini Kafi-Abad, S., O88, O89, P211
 Amini, A., P154
 Amini, H., P11
 Amini, K., P115
 Aminzadeh, M., P167
 Amir Esmaili, M.R., O26
 Amiri, Z., O45
 Andalib, F., O53
 Angoti, G., P128
 Anjarani, S., O27
 Ansari, V., P1
 Ansaripour, S., O77
 Arabsolghar, R., P48
 Arami, A., O51
 Argani, H., O3
 Asali, S., P209
 Asghari, A., P146, P165
 Asghari, S., P157
 Ashrafihelan, J., P12
 Asilian, A., O53
 Aslani, P., P243
 Atashi, A., O46
 Atefi, A., P138, P145
 Attarpour Yazdi, M.M., O59, P159
 Ayatollahi, A.A., P154
 Ayatollahi, J., P138, P145
 Azadejou, A., P70
 Azarbad, Z., P47
 Azghani, P., P157
 Azimi, M., O36
 Azimi, M., P70
 Azin, S.M., O21
 Azizi, K., P129, P152, P153
 Azizi, M., P113
 Babahosini, H., P116
 Babazadeh, H., P163, P173
 Badali, H., P136, P175
 Bafipoorsalar, A.R., P116
 Bagheri, H., P109
 Bagheri, M., P46, P55, P57, P58, P94
 Bagheri, M.S., P185
 Bagheri, S., P183
 Bahari, S., P170
 Bahrami Abdehghah, I., P147
 Bahrami Bavani, A.R., P68
 Bahrami, H., P180
 Bahremand, F., P64
 Bakhshi, B., O64
 Bakhtiari, M.R., O97
 Bandehpour, M., P128
 Barati, H., P63
 Barooni, M., O16, O24, O26
 Bashash, D., O56



- Basiri Khiavi, S., P157
 Bayat, H., O107, W7
 Bayati, S., P11
 Bazargan Harandi, N., O115
 Bazmani, A., P181
 Bazouri, M., P109, P214, P232, P233
 Bazuri, M., P224
 Behdari, A., P144
 Behjati, A., P84
 Behjati, S., P84
 Beiromvand, M., P200
 Berenji, F., P174
 Bijeni, B., P37
 Bikzadeh, M., P204
 Binesh, F., P138
 Bitaraf, H.R., P237, P241
 Bizhani, B., P35
 Bolagh, R., P185
 Boutorabi, S.M., O2, O31, O105
- Chegini, A., O90, P215
- D. Moghdam, Y., P204
 Dabbaghi Abdolabadi, R., P79
 Dahim, R., O73
 Dalimi Asl, A.H., P90
 Dalimi, A.H., P210
 Danesh, A.G., O60
 Daneshbakhtyar, R., P200
 Danghpiyaei, M., P182
 Danghpiyaei, M., P39
 Darban Hosseini, M., P129, P152, P153
 Dargahi, H., O116
 Dargahi, H., P27, P70, P117
 Davari, K., O48
 Dehbanizadeh, A., P13
 Dehghan Mongabadi, F., P138
 Dehghan-Manshadi, M., P240
 Deilami Khiabani, Z., P235
 Delavari, A., P35, P37
 Derakhshi, S., P74, P75, P228
 Divankhosroshahi, N., P17
 Dolati Bashkand, H., P75
 Dolatkah, H., P41
 Doost Mohammadi, S., P235
 Dori, A.V., P202
- Ebrahimi, A., P126
 Ebrahimi, M., P121
 Ebrahimi, M., P70
- Ebrahimipour, G.H., O60
 Ebrahimisadr, P., P90
 Ebrahimzade Parikhani, H., P165
 Ebrahimzadeh, A., P107
 Ebrahimzadeh, H., P146
 Eghdami, A., P30, P127
 Ehsani, Z., P44
 Ehteram, H., P47
 Einollahi, N., O41
 Emamgholipour, S., O38
 Emami Aleagha, M.S., W5
 Emdadi, D., P203
 Entezari, M., P251
 Erami, M., O63, P119
 Erami, M., O63, P119
 Eskandari, Z., O67, P179, P199
 Eslami, P., P127
 Esmaeil, N., O53
 Esmaeili, H., P81
 Esmaili, Z., P120
 Esteghamati, A.R., O95
- Fakhri Moradi Azami, S., P177, P178, P195, P196, P198
 Falahati, M., P123
 Fallah, P., P86
 Fallah, Z., P70
 Famil Sattarian, B., P14
 Farahani, A., P162
 Faraji, E., P126
 Faraji, F., P161
 Farajollahi Kahkesh, F., P244
 Fardiyazar, Z., P87
 Farhadi Langherodi, M., O4, O5, O6, O7
 Farhadi, S., P161
 Farivar, L., P189
 Farzaneh Gharghani, R., P126
 Fasihyan, M., P182
 Fata, A.M., P174
 Fathi, E., P87
 Fattahy, E., P96
 Ferdowsi, S., P66, P72, P218
 Fooladi, S.M., O15
 Foroumadi, S., P19
 Fouladi, N., P118
- Galavi, M., P201
 Ganjbakhsh, M., P174
 Garshasbi, M., O100
 Ghaderi, A., P9
 Ghaderi, Y., P97



- Ghadimipour, H.R., P50
 Ghadiri, A.A., P248
 Ghadiri, M.H., P201
 Ghaemi, E.A., P105, P109
 Ghafari, H., P110
 Ghaffarian Ghazi, N., P74, P228
 Ghaffarifar, F., P90, P210
 Ghahramani, M., P163, P173
 Ghalami Nobar, M., O79
 Ghanbari, A.R., O63
 Gharegozlou, B., P120
 Gharehbaghian, A., O54
 Ghasemi, A., P208
 Ghasemian, R., P122
 Ghasemipoor, F., P186
 Ghasempour, H., P180
 Ghatre Samani, M., P160
 Ghavami, M., P45
 Ghazaghi, H., P185
 Ghaziasgar, S.H., P85
 Gheibi, N., P17
 Gholami, H., O12, O79, O80, O120
 Gholinejad, Z., O41
 Gholizadeh-Ghaleh Aziz, S., P87
 Ghorbani, H., P169
 Ghorbanipour, A., P207
 Godarzi, R., O16
 Golestani, A., O41
 Golmohammadi, T., O38, P63
 Gomrehi, M.H., P130
 Goodarzi, M.T., P18, P28
 Gorji Douz, N., P70
 Goshaghani, H.R., P24
 Goudarzi, H., P128
 Gouya, M.M., O29, O84
 Groche, D., O99, W2

 Hadavi, M., P130
 Hadinedoushan, H., P240
 Hagi, F., O61
 Haghghat, S., P231
 Haghjoo, S., O53
 Haghjouie, H., O26
 Haiaty, S., P181
 Haji Esmail, M., O100
 Haji Jafari, R., P118
 Hajia, M., O104
 Hajizadeh, M., P128
 Hakak, R., P226
 Hallajzadeh, J., P29

 Hamzehloo, G.R., O71
 Hanafi Bojd, H., P67
 Hanifehpour, H., P108, P171
 Hasanjanzadeh, P., P39, P169
 Hasanzadeh, S., P74
 Hashemi Madani, S.M., O4, O5, O6, O70, W2
 Hashemi, E., P132
 Hashemi, J., P132
 Hashemi, P., P224
 Hashemzadeh Chaleshtori, M., P239
 Hassanzadeh, A., P12, P31
 Hatami Hanza, H., P8
 Hatamipour, H., P44
 Hayati, E., O17
 Hazrati Tappeh, K., P113
 Hazrati, S., P203
 Hedayati, M., O96
 Heidari, M.A., O32
 Heidari, N., P86
 Hekmat, M.R., O100
 Hemmati, P., O29
 Hendi, S.B., P16
 Heydari, E., P208
 Heydariyan, A., P208
 Hoseini, A.H., P245
 Hoseini, R., P70
 Hoseini-Fard, R., P40
 Hoseinzadeh, S., P154
 Hossaini, J., P245
 Hosseini Jazani, N., O66, P163, P173
 Hosseini, A., O38
 Hosseini, J., P83
 Hosseini, M., P56, P61
 Hosseini, M.H., P31
 Hosseinpour Sadeghi, R., P251
 Hosseinzadeh, H., P8
 Hosseinzadeh, S., P92
 Houjaghani, S., O51, Houshmand, M., W8
 Hozuri, H.R., P16
 Huisman, W., O108

 Irandoost, M., P7, P25, P114, P213
 Irani, H.R., P124, P125
 Iranmanesh, H., P88
 Ismaili, H.A., P230

 Jafari Modrek, M., P151
 Jafari Sheshtamad, F.A., O68
 Jafari, B., P164
 Jafari, F., P222



- Jafari, M., P206
 Jahani, S., P139, P141, P142
 Jalali, H., O101
 Jalalian, M., O44
 Jalili, A., P245
 Jalili, M., P4
 Jalilvand, M., P234
 Jamshidi, M., P194, P229
 Jamshidian, A., P91
 Jannati Dastgerdi, M., P47
 Javadi Koshesh, K., P86
 Javadi, M., P143, P148, P150
 Javadian, S., P42
 Javadie, M., P6
 Javadijahantigh, G.R., P202
 Javid Ahmadabade, M., P33
 Javid Khojasteh, V., P137
 Jilvand, A., P222
- Kabir, K., P86
 Kafi, E., P14, P246
 Kafilzadeh, F., P124, P125
 Kakakhani, S., P104
 Kalantari, S., P55
 Kalhor, E., O67, P179, P199
 Kalhor, M., O58, P32, P190, P191, P192, P216, P217
 Kamarei, S., P249
 Karbalaee, Z., P189
 Karimi, F., O55
 Karimi, P., P49, P59
 Kariminezhad, Y., P218
 Kawarizadeh, F., P149
 Kazemi Darsanaki, R., P154
 Kazemi Mahani, F., P168
 Kelishadi, M., P214, P224, P232, P233
 Kelishadi, M., P232, P233
 Keshavarz, H., P212
 Keshavarzi, P., O63
 Keyvani, H., P207
 Khabaz, F., P17
 Khademvatan, S., P149
 Khalaf Adeli, E., O86
 Khalili, M., P49, P59
 Khamesi Pour, F., P111
 Khandandel, A., P219
 Khani Sheblo, H., P183, P184
 Khanmohammadi, M., P53, P54
 Kharazi, S., P242
 Khashave, S., P113
 Khassi, K., P177, P178, P195, P196, P198
- Kheiali, E., P89
 Kheirippour, N., O41
 Kheirmand Parizi, P., P79
 Kheirodin, R., P155
 Kheirollahi, Z., P149
 Kheradmand, F., P181
 Khoban, H., P199
 Khodabakhsh Reshad, N., P148, P150
 Khodabakhshi, A., P44
 Khodabandelo, S., P9
 Khodadadi, M., P189
 Khodarahmi, H., P43
 Khodarahmi, R., P64
 Khodavaisy, S., P175
 Khodavandi, A.R., P147
 Khodaverdian, K., O79
 Kholoujini, M., P50, P206
 Khordadmehr, M., P31
 Khorsand, M., P51
 Khoshkbar Sadigh, A., P74, P228
 Khosravi, M., P201
 Khosroshahi, N., P32, P190
 Kia, A., O83
 Kiani, F., O67, P129, P153, P179, P199
 Kodori, M., P131, P176
 Kohan, L., P236
 Koochaki, A., P128
 Koosha, H., O63
 Korani, M., P187, P188
 Korani, S., P187, P188
 Kord Bache, P., P123, P158
 Kosha, A., O69
- Lohrasbi, V., O61
- Madadi, S., P161
 Madjd Jabari, Z., O52
 Maghsoudloo, M., P223
 Maghsudlu, M., P212
 Mahdavi, M.R., O101
 Mahdavi, S., O11
 Mahdian, S., P60
 Mahmodi, V., P74
 Mahmoodi, S., P197
 Mahmoodian, N., O23
 Mahmoudi, S., P158
 Mahzounieh, M.R., P126
 Majidiani, H.R., P90
 Makhloogh, A., P1
 Maleki Kalashani, R., P102



- Maleki, A., P71
 Malekpour, A., O106
 Mamishi, S., P251
 Manochehri, A., P100, P101, P103, P104
 Mansoori, F., O46
 Mansour Rezaie Fomani, A., P70
 Maraghi, S., P2
 Mardani, A., P212
 Mardani, M., O92
 Marzban, A.R., O60
 Masjedi, M., O53
 Mehdipourmir, M., P39, P182
 Mehdipourmir, S.M., P169
 Mehdizadeh, M., O93
 Mehrabnegad, E., P116
 Mehrazma, M., O52
 Mellati, A., P56, P61
 Menbari, M.N., P245
 Mesdaghi, M., O57
 Meshkati, M., P208
 Miraalamy, G., P115
 Mirab Samiei, S., O25, O26, O28, O79
 Mirabedini, S.S., P1
 Mirmiranpour, H., P26
 Mirzababaie, M., P70
 Mirzaei, F., O37
 Mirzaei, F., P21, P22, P23
 Mirza-Ghavami, M., P146
 Moaddab, S.R., P75
 Moazeni, M.H., P202
 Modarres Sadrani, S.N., P203
 Moeinafshar, O., P202
 Moeini Alishah, F., P230
 Moghadam, A., O62
 Moghadam, M., O85, W1
 Moghadami, A., P135
 Moghadasi, M.H., W6
 Moghateli, M., P148, P150
 Moghimi, M.H., P56, P61
 Mohajeri, P., P162
 Mohamadzaki, M., P115
 Mohammadi, A., P23, P62
 Mohammadi, M.M., O113, O114
 Mohammadi, R., O4, O5, O6, O7, W2
 Mohammadi, S., P149
 Mohammadzadeh Rostami, F., P107, P151
 Mohammadzadeh, A., P74, P75, P228
 Mohebbi, S., O67, P179, P199
 Mohseni Moghadam, F., P130
 Mohyadini, A.R., P130
 Mojerloo, M., P224
 Mojtabaei, M., P4, P247
 Mokhtari Azad, T., O82
 Mokhtari, F., P130
 Mokhtari, M., P208
 Molapour, A., P7, P25, P114, P213
 Molashahi, F., P202
 Molazei, H., P185
 Mollazade Jelodar, F., P80
 Momen-Heravi, M., O63
 Monem, M., P44
 Montazeri, F., P210
 Moradi, F., O67
 Moradi, M., P70, P179, P199
 Moradiasl, E., O14
 Moradimanesh, A., P226
 Moradi-Sardareh, H., O39, P20
 Moradzadegan, H., O35
 Morovvati, S., P235
 Mortazavi, S.M., P156, P242
 Mosavi, J., P113
 Mosavi, S.M., P242
 Mostafaei, A., P52
 Motallebi Reikandeh, S., P1
 Motamedi, M., P116
 Motevallihaghi, A., P189
 Mousavi, M., P107, P151
 Mousavi, S.M., P156
 Mousavi, S.S., P56, P61
 Mouseli, A., O26
 Nabavi, M., O81
 Nabili, M., P122, P136, P175
 Naderi, M., P58
 Nadji, S.A., O94
 Naghshineh, A., P39
 Najafi, F., P70
 Najafipour, R., P234
 Najafzadeh, M.J., P174
 Najar Peerayeh, S., O64
 Najar, H., P44
 Nakhjavani, M., O38, P26
 Namdari Moghaddam, H., P207
 Naser, A., P202
 Naseri, A., P174
 Naseri, A.H., O42
 Nasiri, R., P225
 Nasiri-Asl, M., P82
 Nateghpour, M., P189
 Nazari, H., P44



- Nejati, J., P70
 Nemati Hevelae, E., O62, P135
 Nemati, H., P43, P64
 Nemati, N., P43
 Neysi, M., P134
 Nohi, E., P13
 Nooritalab, N., P3
 Noroozi, R., P250
 Norouzi, R., P98, P99, P100, P101, P103, 104
 Nosrati, A., P122
 Nourazarian, A.R., O36, P38
 Nourazarian, S.M., O36, P38, P74, P75, P228
 Nourbakhsh, M., O41
 Nourbakhsh, M., O41
 Nouri, M., P164
 Nourizadeh, M., O111
 Nouroozikoh, T., P185, P201, P202
- Obeidi, N., P86
 Ohadi, E., O65
 Oloomi, M., P234
 Omidkhoda, A., P211
 Osali, A.R., P46, P55, P57, P58, P94
 Oshaghi, M., P120
- Pakdel, Z., P48
 Pakraves, J., O78
 Palangi, A.R., W3
 Parhizkari, S., P70
 Parsania, A., P226
 Parsania, M., O91, P167
 Pashaei-Asl, F., P87
 Pashaeiasl, M., P87
 Pazargadi, M., O119
 Peysepar, A., P170
 Pilehvar, M., P35, P37
 Pirestani, M., P146, P165
 Piri, H., P30
 Pishkarieh Asl, R., P161
 Podineh, M., P185
 Podineh, M., P201
 Podineh, Z., P204
 Poopak, B., O45, O103
 Poopak, P., P226
 Poorkhani, A.H., O47
 Poranfard, J., P13
 Pouide, E., P227
 Pourakbari, B., P251
 Pourasghary, B., P38
 Pourfallah, F., P42
- Pourfarzi, F., P118
 Pourfathollah, A.A., O87, P212, P218
 Pourgheysari, B., P78
 Pouriayevali, M.H., O45
 Pourtagi, M., P134
- Rad, F., P218
 Radahd, S., O40
 Raeisi, A., P210
 Raesi, R., P134
 Rahbarzadeh, F., O42
 Rahimi, A., P93
 Rahimi, S., P154
 Rahimi-Froushani, A., P189
 Rahimkhani, M., P140
 Rahimzadeh, S., P238
 Rahmani Vahid, E., O68
 Rahmani, F., P70, P199
 Rahmani, M., O58
 Rahmani, S., P180
 Rahmati, M., P41
 Rahnamaye Farzami, M., O33, O72, O104
 Raisi, A., P11
 Rajabi, H., P238
 Rajabibazl, M., P19
 Ramazanali, F., P60
 Ramazani, A.A., P67
 Ramezhpour, R., P39, P182
 Ramezanpour, M., P7, P25, P114, P213
 Ramezanpour, R., P169
 Ranjbar, R., P231, P242
 Rassaei, N., P76
 Rasti, A., O52
 Ravaghi, H., P5
 Ravai, M., P119
 Raz, A., P209
 Razaghniya, R., P39, P169, P182
 Razeghi, M.S., P14, P246
 Razmi, N., P48
 Razzaghi, R., O63
 Razzaghy-Azar, M., O41
 Readice, A., O49
 Rezaei, A., O67, P179, P199
 Rezaei, N., O109
 Rezaei, Z., P162
 Rezaeian, R., P49, P181
 Rezaie, H., P238
 Roggenbuck, D., O49
 Royani, S., P5 Roshan, P., W8



- Sabagh, A., P69
 Saber Mahani, A., O16
 Saber, V., P108, P171
 Saberian, M., P172
 Sabooni, M., O34, O74
 Saboori, R., P70
 Sadeghi Neshat, S., P8
 Sadeghi, A.R., P202
 Sadeghi, M., P208
 Sadeghian, L., P91, P239
 Sadeghitabar, A., O18, O19, P225
 Sadeghpour Natanzi, M., P167
 Sadraei, J., P146, P165
 Sadri, H., P18, P28
 Saeedinia, A.A., P89
 Saeidi, S., P139
 Safaie, A., O25
 Safara, M., P158
 Safari Fard, A., P220, P221
 Safari Fard, S., P220
 Safari, N., P226
 Safavi, S.H., O30
 Saffari, Z., P8
 Safi, S., O29
 Saghafi, S., O110
 Saghally, M., P105
 Saghiri, R., P42
 Sajadi, M., P218
 Salehabadi, M., O39, P20
 Salehi Gatabe, A., P80, P96
 Salehi, Z., P236
 Salehiyan, A., P44
 Salemi, Z., P18, P28
 Salman Yazdi, R., P60
 Salmanian, M., P161
 Sam Shariat, K.A., O1
 Samadanifard, M.H., O76
 Samadi, S., P214
 Samadzadeh, P., P41
 Samami, E., P26
 Samieerad, F., O58, P32, P190, P191, P192, P216, P217, P234
 Samiei, M., P106
 Samsam Shariat, S.K., P171
 Samsam Shariat, Z.A., O1
 Samsamshariat, S.R., P68
 Sanjari, M., P185, P201, P202
 Saravani, F., P201
 Saravani, R., P151
 Sarli, A., P79 Saremi, M. A., W8
 Sarmadi, A., P91
 Sarraf Kazerouni, E., P72
 Sarrafzadeh, M., P250
 Sayad, A., P250
 Sayyah, A., O118
 Schierack, P., O49
 Sepehr Nezhad, M., P47
 Setoodeh, S., P51
 Seyedizadeh, S., P164
 Shabani, M., O41
 Shabani, M., P25, P213
 Shafiee, S., P63
 Shah Hossieni, M.H., P145
 Shahali, M., P16
 Shahbazi, A., P210
 Shahhoseini, M., P60
 Shahidi Delshad, E., P172
 Shahidi, S., P19, P34
 Shahnazi, E., P113
 Shahraki, A.H., P185, P201
 Shahsiah, R., O102
 Shaiegan, M., P215
 Shakiba, Y., W4
 Shakouri, M., P73
 Shali, M., P25, P213
 Shams, K., O43
 Shanaki, M., O38
 Sharbatdaran, M., P39
 Shariati Nasab, S., O22
 Shariati, M., P45
 Shariatzadeh, S.A., P210
 Sharif, A.R., O63
 Sharifi, Y., P163, P173
 Sheikhsofla, F., O45
 Shekari, M., P234
 Shirin, A., O13
 Shirmardi, S., P65
 Shirzad, H., P78, P91
 Shojaei, E., P123
 Shokohi, T., P122
 Shokri, R., P144
 Shokrzadeh, M., O44, P135
 Sobhani Pour, M.H., P242
 Sofiabadi, M., P17
 Solati Dehkordi, S.M., P111
 Soleimani, M., P76
 Soleymani, M., P143, P148, P150
 Soltan Dallal, M.M., P133
 Soltanghoraei, H., P225
 Soltani, A., P78, P160
 Soltanpour, M.S., O48



- Soltanzadeh, A., P30
 Sourani, M., P10
 Sour, E., P189
 Sowa, M., O49
- Tabarraei, A., P214, P224, P232, P233
 Tabatabaiefar, M.A., P239
 Tadbiri, S., P74, P228
 Tahannejad, Z., P69
 Taheri, M., P248
 Taheri, M., P250
 Taherkhani, K., P70
 Tahmasbi, L., P218
 Tahmasian, R., O13
 Tajbakhsh, E., P111
 Tajik, S., O64
 Takhshid, M.A., P51
 Talebi, R., P102
 Taleghani, M.Y., O45
 Tamizifar, N., O53
 Taragghi Hiag, V., P170
 Tari, K., P77, P93
 Tashakori, M., P130, P156
 Tashrifi, F., P36
 Tavakoli Hfshejane, G., O50, P33, P95, P112
 Tavakoli, S., P50, P206
 Tempske, T., O10, O20
 Teymoori, H., O47, P24
 Toghi, M.T., O8
 Togyanifar, K., P191
 Tohidi, M., O98
 Toofani Milani, A., P34
 Torab, S.A., P221
 Torabi, M., O7
 Torabizadeh, R., O65, P166
 Torani, S., P5
 Torki, S., P160
 Tozihi, M., O36, P38
 Trezzi, B., O49
 Turki, H., P209
- Vafaei, S.A., O37
 Vahidianfa, B., P77
 Vaisiraygani, A., P43, P64
 Vali, L., O26
 Valikhani, A., P72
 Valizadeh, A., P35, P37
 Vanaki, M., O9, O117
 Varmaghani, S., P49, P59
- Yaghmaei, P., P60
 Yaghobzadeh, A., P137
 Yahyavi, M., P134
 Yavarian, M., P236
 Yazdanipour, N., P67
 Yousefi, A., P53, P54
- Zabihian, S., P222
 Zaboli, F., P96, P169
 Zadsar, M., P215
 Zaeembashi Tajabadi, Z., P81
 Zahmatkesh Roudsari, R., P231
 Zaini, F., P123, P158
 Zaker, F., P73
 Zamanfar, D., O101
 Zamani, F., P83
 Zandi, F., P243
 Zangheneh, A., P50
 Zare, F., P240
 Zarean, M., P149
 Zareebrahimabad, M., O47, P24
 Zargari Samani, O., P91
 Zargari, M., P1
 Zarnani, A.H., O75
 Zarrin, S., P100, P101
 Zarrinfar, H., P174
 Zeighami, H., O61
 Zeinoddini, M., P89
 Zhalehjoo, N., P26
 Zhiani, M., P55, P58, P94
 Zoladl, M., P13



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Laboratory & Diagnosis

Official Journal of Iranian Association of
Clinical Laboratory Doctors

Vol. 7, No. 30, Supplement Issue, April 2016