

آیا جواب آزمایش‌های تشخیص بروسلوزیس  
مطابق با علائم بالینی می باشد؟

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	% (95% CI)
Fever	79 (49; 97)
Sweats	73 (60; 85)
Chills	60 (34; 83)
Fatigue	51 (27; 75)
Headache	52 (32; 72)
Malaise	74 (48; 93)
Nausea/vomiting	26 (15; 38)
Weight loss	29 (15; 47)
<i>Abdominal</i>	
Abdominal pain	26 (13; 41)
Splenomegaly	25 (17; 34)
Hepatomegaly	22 (15; 29)
Hepatitis	3 (1; 6)
<i>Musculoskeletal</i>	
Arthralgia	62 (52; 70)
Arthritis	25 (17; 34)
Myalgia	49 (36; 63)
Back pain	45 (31; 60)
Sacroiliitis	14 (7; 22)
Spondylitis	11 (6; 18)
<i>Specific organs</i>	
Epididymo-orchitis	9 (6; 13)
Endocarditis	1 (1; 2)
Neurological	4 (2; 6)
Respiratory	9 (4; 14)
Cutaneous	8 (4; 14)

## تنوع علائم بالینی

# Transmission

**1: GI tract**

**2: Contact:**

Transplacental, Breastfeeding, sexual, transplation, blood transfusion, ....HHT?

**3: Aerosol**

# Diagnosis

1: Culture

2: PCR-based

3: Serological/Immunological

# Culture

- 1: Gold standard,
- 2: Sensitivity 10 to 90%
- 3: >2 or more blood culture
  - i) 80% Pos. with 2 BC
  - ii) 59% Pos. with 1 BC
- 4: Bacteremia transient
- 5: Upto 4 wks, BACTEC
- 6: Safety
- 7: Sensitivity LOW  
Severity HIGH

# PCR-Based

## No standardization

- 1: Sample preparation
- 2: Primer target
- 3: Viable vs. Dead

# Serological

**1: High Sensitivity**

**1: Cross reactivity;** *Y. enterocolitica* O:9, *Salmonella*, *E. coli*, *Francisella*, *V. cholerae*,  
*S. marcescens*, *H. influenzae*, *P. aeruginosa*, TB

**3: False positive; RF**

**4: LPS vs. (non-LPS) Cytoplasmic antigens**

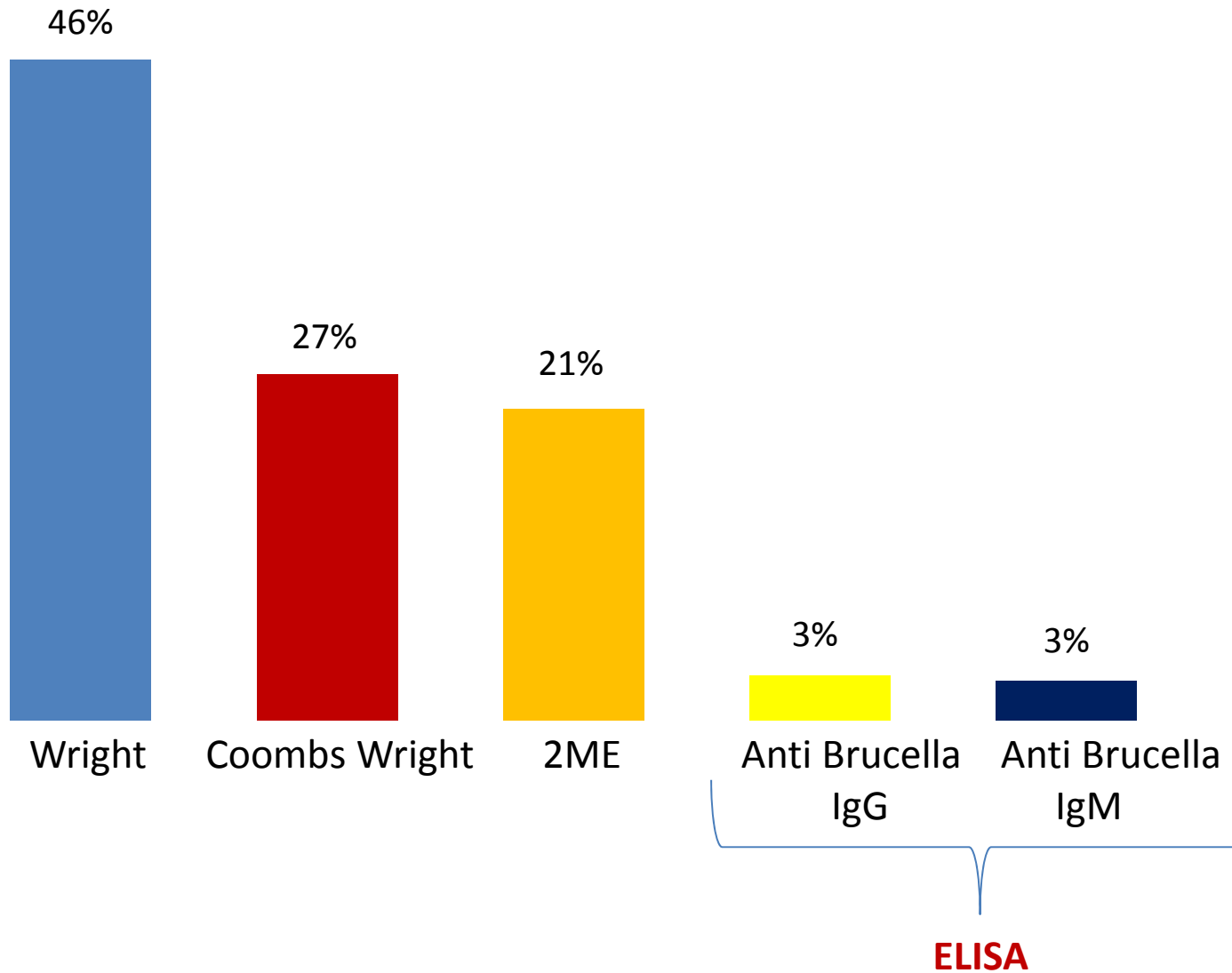
**5: Commercial Kits variability**

# ELISA

- **ELISA is preferred on CSF for neurobrucellosis**
- ELISA is sensitive but lower specificity

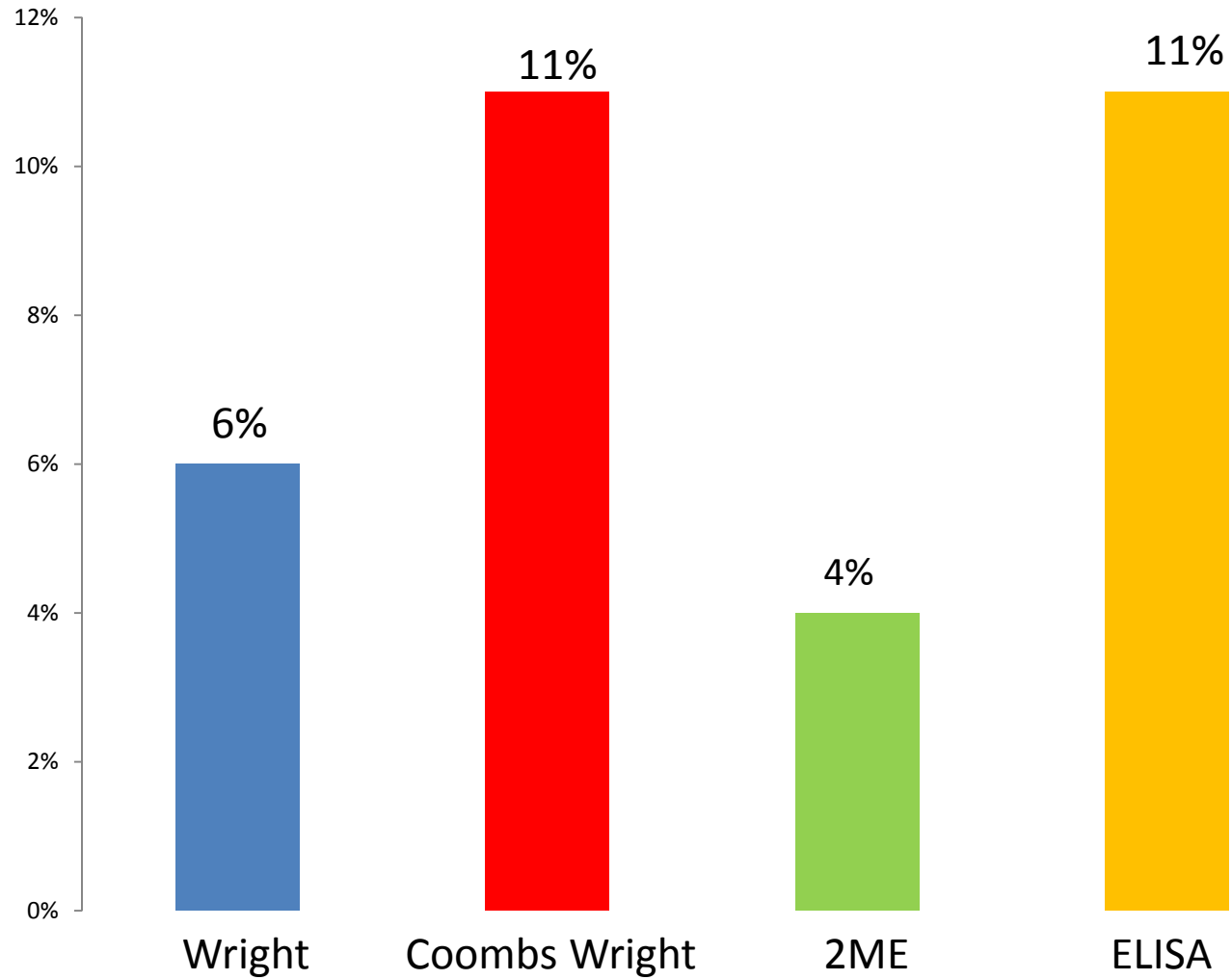


# % tests requested by physicians of suspected patients over 5 years



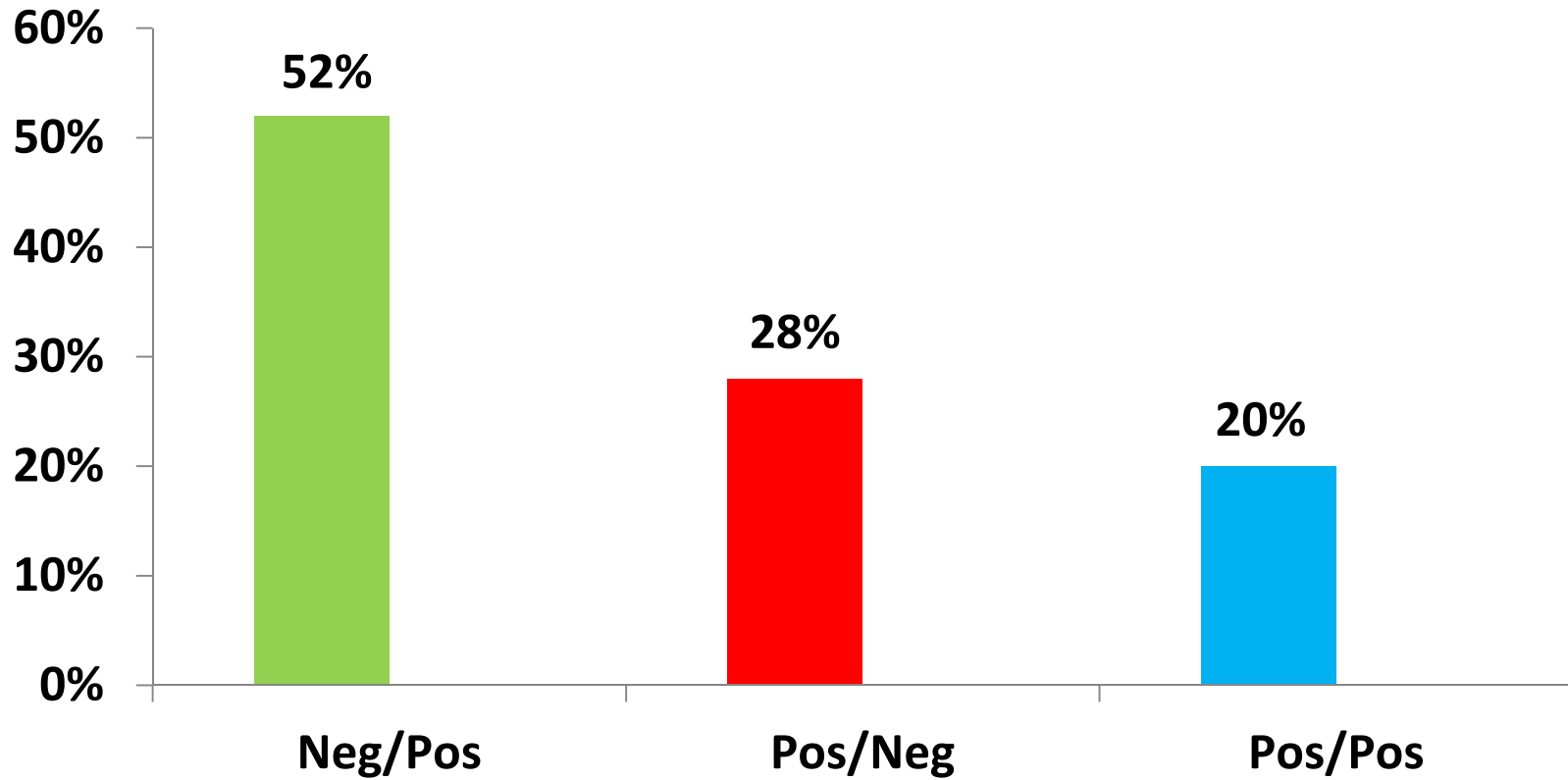
- **Wright screening**
- **22% reduction of 2ME as compared with Coombs Wright**
- **status of the infection: coombs tests + 2ME is preferred**
- **6% ELISA requests**

**Of the total number of samples examined for each category**  
**PERCENT POSITIVE**



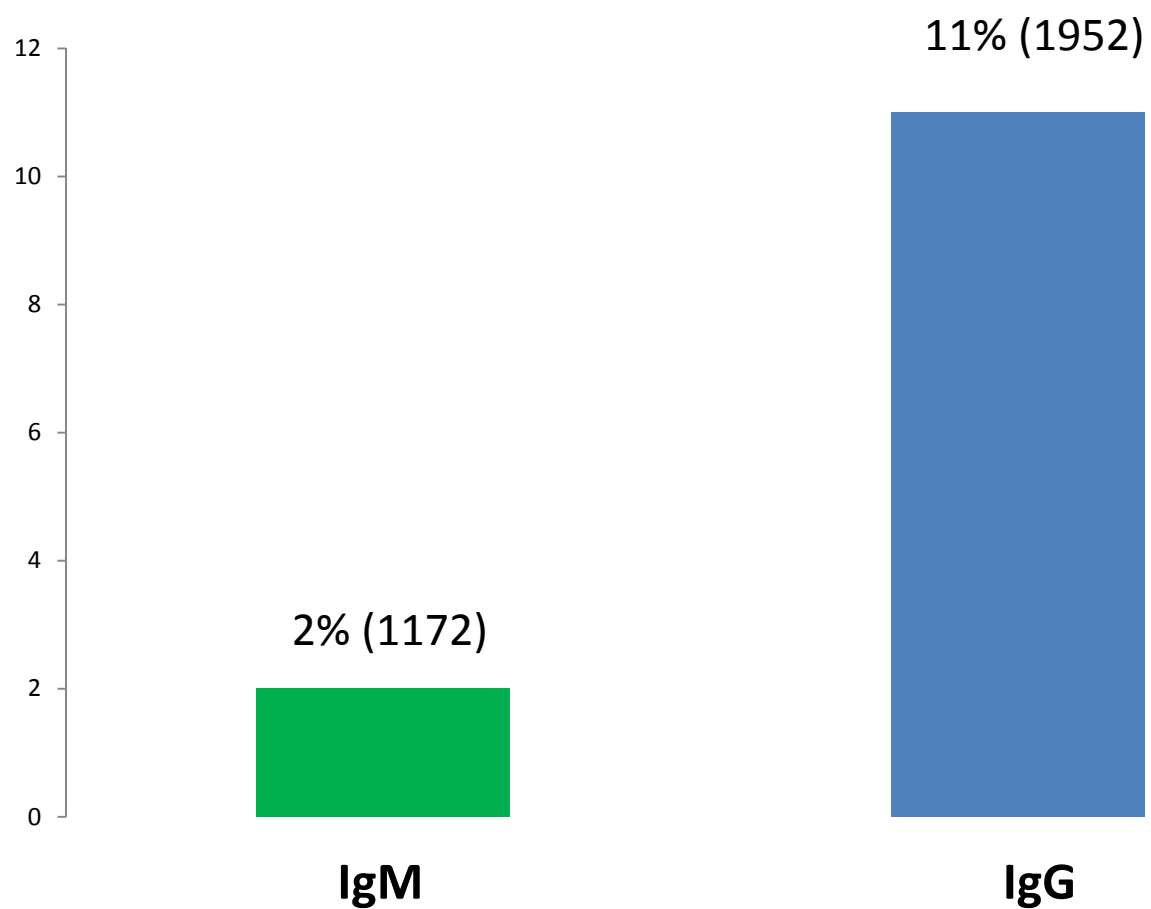
- **Coombs Wright and ELISA have the same % POSITIVE results**
- **Significant reduction in positive response when 2ME was used**

**Percent ratio of positive samples**  
**ELisa vs Serology**



- 80% Mismatch between SEROLOGY and ELISA when both tests are examined on the same sample
- 72% showed POSITIVE SEROLOGY
- 48% showed POSITIVE ELISA
- DIFFERENT ELISA KITS USED??

## % POSITIVE Elisa IgM/IgG



**1172/38% (IgM) vs 1952/63% (IgG)**

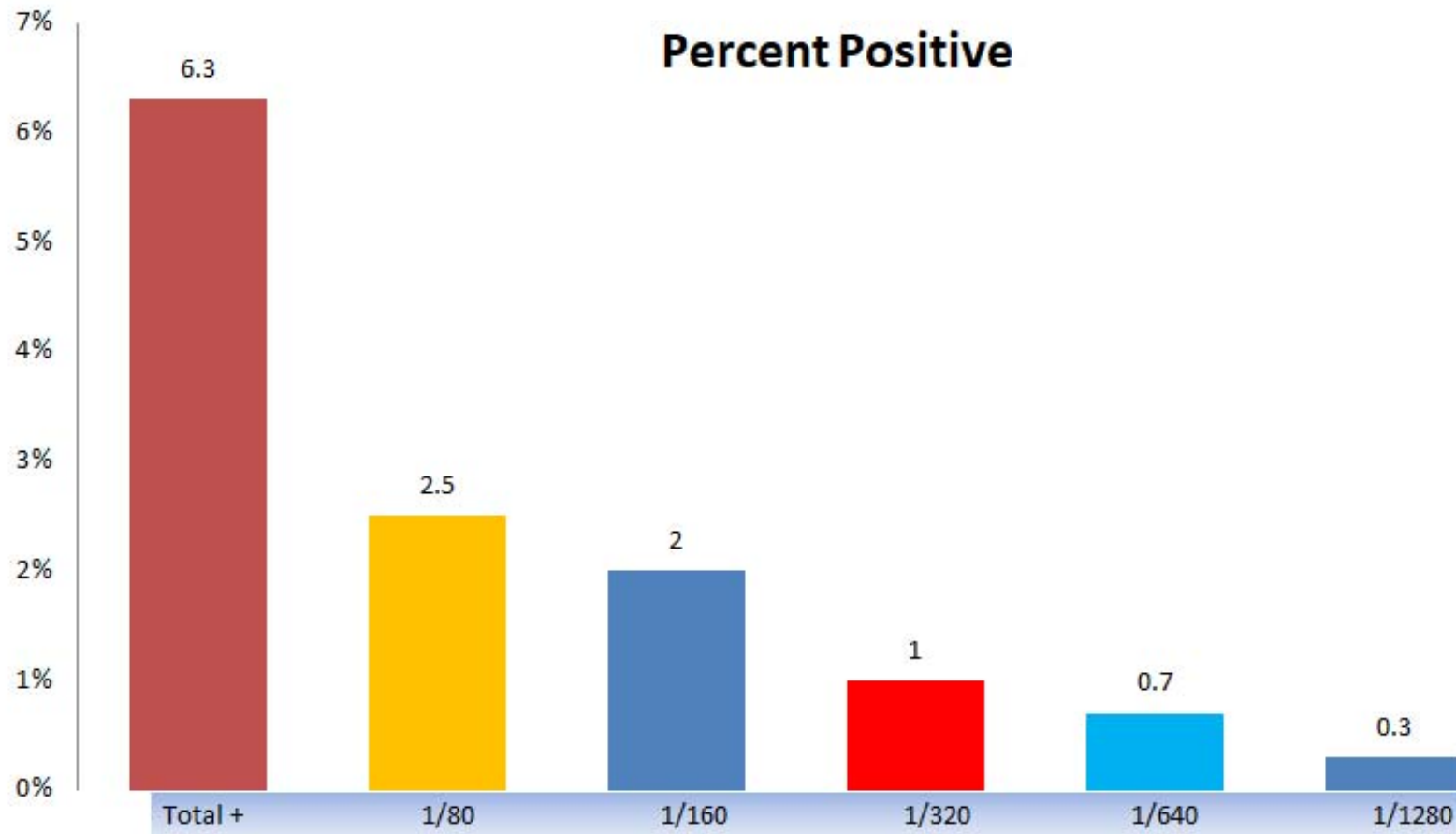
**False negative results from anti brucella IgM antibodies may result from**

- i) excess of IgG
- ii) RF

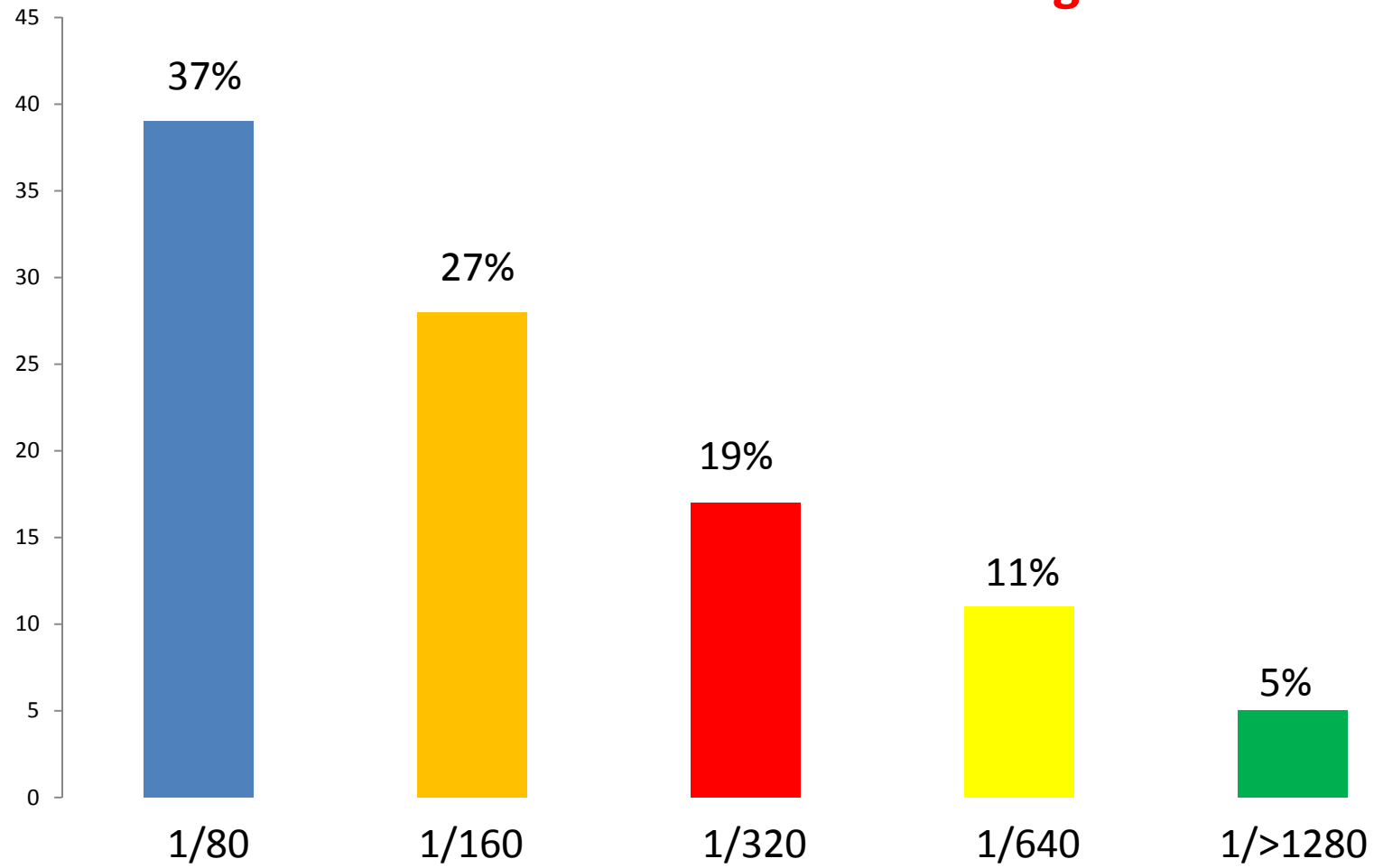
**both IgG and IgM should be tested simultaneously**



## >3000 Coombs wright test



## Percent Positive Coombs wright



## Saudi Arabia

> *Diagn Microbiol Infect Dis.* 2002 Oct;44(2):129-32. doi: 10.1016/s0732-8893(02)00426-1.

### Comparison of the Brucella Standard Agglutination Test with the ELISA IgG and IgM in patients with Brucella bacteremia

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Affiliations

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## China

### ELISA is superior to bacterial culture and agglutination test in the diagnosis of brucellosis in an endemic area in China

Nannan Xu, Wei Wang, Fengzhe Chen, Wen Li & Gang Wang 

*BMC Infectious Diseases* 20, Article number: 11 (2020) | [Cite this article](#)

63% and 99.6% respectively. In patients with Brucella bactremia, the sensitivity of either ELISA IgM or IgG were lower than SAT, however, combining IgM and IgG had similar sensitivity and specificity to SAT. The positive predictive value of SAT and IgM is satisfactory.

> *Iran J Pathol.* Fall 2017;12(4):371-376. Epub 2017 Oct 1.

### A Comparative Evaluation of ELISA, PCR, and Serum Agglutination Tests For Diagnosis of Brucella Using Human Serum

Khashayar Mohseni<sup>1</sup>, Reza Mirnejad<sup>2</sup>, Vahab Piranfar<sup>3</sup>, Shiva Mirkalantari<sup>4 5 6</sup>

Affiliations

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<sup>1</sup> Student Research Committee, Semnan University of Medical Sciences, Semnan, Iran.

## Iran

**Results:** Out of the 100 serum samples obtained from patients with suspected brucellosis, 50 samples tested positive by SAT and displayed high titers of 1/160. Of these 50 positive samples, 49 samples were positive as per the ELISA test whereas one sample tested negative. The PCR test was conducted

## Iran

INTERNATIONAL JOURNAL  
OF INFECTIOUS DISEASES



70.002 | VOLUME 12, SUPPLEMENT 1, E459, DECEMBER 01, 2008

### Diagnostic Value of Brucella ELISA (IgG and IgM) in Patients with Brucellosis in Kashan, Iran - 2004

K. Esalatmanesh  Z. Soleimani • A. Soleimani

**Results:** Sensitivity of ELISA IgM and IgG were 76% and 75% respectively and specificity of them was 100%. Positive

## CONCLUSION

- **Since Culture is not performed routinely**
- **National Brucella Reference Lab confirmation/biotyping**
- **Epidemiological/Clinical/Lab diagnosis combined**
- **No single test is confirmatory for Brucella**
- **False Positive ELISA in the presence of RF**
- **False Positive Serology cross reactivity**
- **Multiple tests requested by Physicians**
- **Positive results should be validated**