



سوره الفجر





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Evaluation of lipid profile in different anemic patients

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Introduction

*Lipids are important structural and metabolic materials. Many diseases can change the lipid profile.

* Hypocholesterolemia was reported in hematological disorders such major β Thalassemia, intermediate Thalassemia, sickle cell anemia; but the pathophysiology of Hypocholesterolemia is unknown.

Aims:

As both anemia and dyslipidaemia are prevalent in Iran, this study was conducted to find serum lipid profile changes in various types of anemia.

The main aim of this study is evaluation of lipid profile, Total Cholesterol, Triglyceride, Low density Lipoprotein and High density Lipoprotein, in different anemic disorders compared with control group.

Methods

in a case-control study, in 2008-2010

33 patients with Iron Deficiency Anemia (IDA),

50 β -Thalassemia Major(TM),

35 β -Thalassemia Minor (Tm)

79 healthy subjects as controls

Serum triglycerides(TG), cholesterol(TC), high-density lipoprotein cholesterol(HDLc) , low-density lipoprotein cholesterol(LDLc) ,

ferritin levels , hemoglobin (Hb) and Mean Corpuscular Volume(MCV) were measured in each subjects .

Inclusion and exclusion Criteria

IDA: low MCV & Hb for age, Fer < 12 ng/ml or TS% < 15

Tm: low MCV & Hb for age, Fer > 12 ng/ml or TS% > 15 Hb A₂ > 3.3,

TM : CBC , Hb Elect. Family history

exclusion Criteria

IDA + Tm

Results

Mean serum cholesterol, HDL cholesterol, and LDL cholesterol levels were found to be significantly lower in the TM group compared with the control group and Tm and IDA groups $P < 0.01$ for all.

Results 2

Serum TG was significantly higher in the TM group compared with the control group ,but no significant differences observed with IDA and Tm.

Results 3

Also there was not any significant differences in lipid profile between Tm and IDA with controls ($p>0.05$).

Distribution of study groups Acc. To age & gender

	gender			Mean of age ± SD (Year)
	Female	Male	total	
IDA	11	22	33	5.4±2.6
Tm	20	15	35	5.1±2.9
TM	31	19	50	15.9±7.7
Control	40	39	79	12.3±9.6
Total	102	95	197	10.7±6.1

تفاوت آماری در جنسیت افراد تحت مطالعه بطور کلی وجود نداشت ($P=0.71$). ولیکن میان گروه فقر آهن با گروه شاهد ($P=0.041$) تفاوت معنی داری دیده شد.

Hematologic parameters in Study Groups

	Hb (g/dl)	MCV (fl)	MCH (g/dl)	MCHC	Ferritin (ng/ml)	TS%
IDA	10.1±1.5	69.2±2.6	21.8±7.2	31.6±1.7	16.6±6.7	9.4±5.5
Tm	10.4±0.9	55.7±4.7	18.1±5.1	32.3±1.4	116±33	35.8±23.3
TM	9.3±2.2	---	---	---	2416±2072	---
Control	13.1±1.4	81.7±4.2	27.4±6.1	33.5±1.6	74±36.4	32.4±6.2
Total	11.2±2.1	72.6±11.8	23.6±4.3	32.7±1.8	842±629	23.3±18.8

Lipid Profile in Anemic patients and controls

	Anemic Patients (n=118)	Controls (n=79)	P value
TC	130.4±37.5	153±31	<0.001
TG	103.9±50.8	82±39.7	0.002
LDL	59.5±26.4	74.8±10.9	<0.001
HDL	37.8±17.4	44±10.9	0.005

Lipid Profile in Study Groups

	TC(mg/dl)	TG(mg/dl)	LDL(mg/dl)	HDL(mg/dl)
IDA	141.7±27.7	94±58	43.9±15	68±18.5
Tm	151.7±37	94±58	43.6±24	79.4±27.5
TM	107.9±31 ^{**}	116±49	33±9 ^{**}	40.6±15 ^{**}
Control	153±31	82±40	44±11	74.8±23

^{**} Differences are significant at <0.01

Triglyceride , Cholesterol & Sex

	TG		TC	
	<i>Female</i>	<i>Male</i>	<i>Female</i>	<i>Male</i>
IDA	106±69.5	87±52	142±35	142±28
Tm	107±49	85±29	146±30	138±31
TM	110±48	126±51	114±32	98±27.5
Control	86±42.5	78±10	157±30	149±32

Conclusions

Children with β -Thalassemia Major had lipid profile lipid disorder .
Our result suggest that hypocholesterolemia in TM may be due to increased erythropoiesis and cholesterol consumption .
Further studies are needed to clarify the main mechanism and the possible clinical consequences of this phenomenon .

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**Thank You
For Your Attention**

