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Determination of Bloods Lipid of Adult Policlinics in Konya Region, Turkey

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In this study, the blood lipid levels of adult policlinics in Konya region, Turkey were determined. Several factors such as central obesity, active-passive cigarette smoking, eating habits, life style, body mass indexes, obstruct sleep syndrome (snoring), sex has been considered for present studies. An interesting correlation was also determined as smoking effects.

Key Words: Triacylglycerol, Total cholesterol, HDL cholesterol, LDL cholesterol.

INTRODUCTION

Hereditary factors play an important role in determining individual blood lipid levels. But the dietary and environmental factors which lower blood cholesterol, as the substitution in the diet are polyunsaturated and monounsaturated fatty acids. Some of the saturated fatty acids are most beneficial. Naturally occurring oils that contain a high proportion of polyunsaturated fatty acids include sunflower, cootton seed, corn soybean and olive oil contain a high concentration of monounsaturated fatty acids.Sucrose and fructose have a greater effect in raising blood lipids, particularly triacylglycerols, than do other carbohydrates[1,2].

Blood lipids level may be unaffected, when fasting blood glucose (FBG), CRP, SGOT, SGPT, TSH, FT3, FT4, urea and creatine levels within normal limits. In addition to being out of dialysis application, treament of malinity and during the last 3 months not undergone by serious surgical treatment.

Regular exercise affects the plasma lipid profile favourably. Total cholesterol concentrations are reduced as a result of lowering of LDL. Triacylglycerol concentrations are also reduced, due to most likely to increased insulin sensitivity, which enhances expression of lipoprotein lipase[2].

For all subjects, body mass indexes (BMI) were computed using their weights and heights. The ones with BMI >= 30 were considered obese and the ones with 30 < were considered 'nonobese'. According to central obesity measurements, those with 88 cm over among women and those with 102 cm among men were evaluated as central obese[1,2].

EXPERIMENTAL

The present study was performed on total 1006 adult patients (598 women and 408 men) from Cumra Public Hospital, Turkey between January 2005 and December 2006 and the following criteria adopted into the study.

Criteria: (1) Fasting Blood Glucose (FBG), CRP, SGOT, SGPT, TSH, FT3, FT4, Urea and Creatine levels within normal limits, (2) Being out of dialysis application, (3) Not being in the treament of malinity, (4) During the last 3 monts, not undergone by serious surgical treatment, (5) Being between the ages of 25-55 while collecting their blood samples.

All necessory informations were provided to these patients and their blood samples were put into vacuumed vials after 12 h - fasting between 8 and 9.30 AM. From collected samples, all sera were centrifuged after clotting and HDL analysis tests were performed simultaneously. These tests were performed using Thermo Electron HDL:981657 kits on Conelab 60 i Automated Test Device.

Obese groups: The heavy body of adult persons, their body mass index (BMI) are measured by making the measurement of height. A formula body weight kg/ Vucut square m. Adult persons whose BMI is 30 and over are grouped as obese O2 and O1 whose is under 30 are grouped as not obese.

Central obese groups:

Women + group: central obese 88 cm and over.
Women - group: not central under 88 cm.
Men + group : central obese 102 cm and over.
Men - group : not central obese under 102 cm.

Eating habits groups:

EO group : pure diet
E1 group : diets rich unsaturated fatty.
E2 group : diets rich saturated fatty.
E3 group : mix diets.

Life style groups:

L0 group : inert life style
L1 group : irregular exercise
L2 group : partially regular exercise
L3 group : very regular exercise

Cigarette smoking groups:

C0 group : not smoking
C1 group : under 10 per a day
C2 group : 10 and over per a day
CP group : passive cigarette smoking

Obstruct sleep syndrome (Snoring)

S0 group : not snore
S1 group : execeptional snore
S2 group : consistently snore

Sex:

EE1 group : one time in a month
EE2 group : two times in a month
EE3 group : three times in a month

RESULTS AND DISCUSSION

In outgoing study by interrogating factors such as eating habits life styles, cigarette and snoring, its connection with the measured parameters are evaluated.

From the obtained data when 1006 adult persons average TG levels are found as 167.80 ± 98.43 mg/dl, this number is found in men as 174.37 ± 102.69 mg/dl and it is found in women as 163.31 ± 95.00 mg/dl. The obtained results are seen in the definition of high frontier between 150/190 mg/dl (Table-1).

TABLE-1
MEASUREMENT OF TRIACYLGLYCEROL LEVEL

			Triacylglycerol (mg/dl)			
			Number	Mean	Standard deviation	
BMI	Normal		527	165.55	102.93	Z=-1.639, p=0.101
	Obese		479	170.27	93.28	
Sex	Men		408	174.37	102.69	Z=-1.686, p=0.092
	Women		598	163.31	95.25	
Central obesite	Men	+	151	242.85	123.97	Z=-10.012, p<0.001*
		–	257	134.14	58.04	
	Women	+	219	214.71	112.03	Z=-10.394, p<0.001*
		–	379	133.61	68.38	
Life style	L0		101	169.65	106.05	Ki-square=7.921, p=0.048*
	L1		195	150.09	84.22	
	L2		354	168.54	95.40	
	L3		356	176.23	105.31	
Smoking	C0		548	151.24	87.73	Ki-squre=56.335, p<0.001*
	C1		104	178.07	97.44	
	C2		193	205.20	109.69	
	C3		161	172.69	106.19	
Eating habits	E0		210	160.18	82.98	Ki-square=4.557, p=0.207
	E1		187	183.49	112.21	
	E2		214	165.49	90.10	
	E3		395	165.68	102.83	
Snoring	S0		317	159.12	87.21	Ki-square=3.468, p=0.177
	S1		459	174.39	102.96	
	S2		230	166.61	103.12	
Etli ekmek	EE1		201	169.68	94.87	Ki-square=14.014, p=0.001*
	EE2		266	185.09	111.10	
	EE3		539	158.56	91.86	
Totally			1006	167.80	98.43	

NOTE: *Important, statistical ($p < 0.05$).
This table indicated blood levels TG by interrogating factors such as central obesity, life style, cigarette smoking, etli ekmek, eating habits ($p < 0.05$).

When looked other criteria, TG values are seen over average in central obese people and in smoker. When it comes to the person who ears too much 'Etli Ekmek', on the contrary to our expectation it is found under the average and this stuation explained with the reguler exercise they do in their life style.

When all the groups average total cholesterol level is defined as 196.66 ± 44.93 mg/dl, it is found in men as 191.76 ± 43.00 mg/dl and in women as 200.00 ± 45.59 mg/dl. According to these results, the effect of sex on total cholesterol is measured as $p < 0.05$. Also, both in women and men it is observed that central obestiy has on impact effect ($p < 0.05$) on total cholesterol (Table-2).

TABLE-2
MEASUREMENT OF TOTAL CHOLESTEROL

			Total cholesterol (mg/dl)			
			Number	Mean	Standard deviation	
BMI	Normal		527	196.66	43.59	Z=-0.050, p=0.960
	Obese		479	196.65	46.41	
Sex	Men		408	191.76	43.55	Z=-3.033, p=0.002*
	Women		598	200.00	45.59	
Central obesite	Men	+	151	209.95	49.76	Z=-6.097, p<0.001*
		–	257	181.07	35.42	
	Women	+	219	218.03	47.83	Z=-7.267, P<0.001*
		–	379	189.57	40.81	
Life style	L0		101	195.14	50.21	Ki-square=0.960, p=0.811
	L1		195	194.98	41.78	
	L2		354	197.06	43.92	
	L3		356	197.60	46.16	
Smoking	C0		548	203.88	46.72	Ki-square=36.750, p<0.001*
	C1		104	191.53	44.82	
	C2		193	183.47	41.43	
	C3		161	191.19	37.85	
Eating habits	E0		210	186.49	39.60	Ki-square=16.563, p=0.001*
	E1		187	196.79	48.86	
	E2		214	201.49	44.84	
	E3		395	199.38	45.05	
Snoring	S0		317	194.26	43.90	Ki-square=4.880, p=0.087
	S1		459	200.04	46.52	
	S2		230	193.21	42.78	
Etli ekmek	EE1		201	185.21	40.67	Ki-square=20.176, p<0.001*
	EE2		266	196.31	46.14	
	EE3		539	201.09	45.16	
Totally			1006	196.66	44.93	

NOTE: *Important, statistical ($p < 0.05$).
This table indicated blood levels TK by interrogating factors such as, sex, central obesity, cigarette smoking, etli ekmek, eating habits ($p < 0.05$).

Average HDL cholesterol level is found as 50.67 ± 12.30 mg/dl, in men this number is 48.11 ± 12.59 mg/dl and in women as 52.41 ± 11.80 mg/dl. It is found that (active-passive) smoking and sedanter life style have negative effect on HDL ($p < 0.05$) (Table-3).

TABLE-3
MEASUREMENT OF HIGH DENSITY LIPOPROTEIN

			High density lipoprotein (mg/dl)			
			Number	Mean	Standard deviation	
BMI	Normal		527	51.22	12.37	Z=-1.538. p=0.124
	Obese		479	50.07	12.21	
Sex	Men		408	48.11	12.59	Z=-5.703, p<0.001*
	Women		598	52.41	11.80	
Central obesite	Men	+	151	47.45	12.90	Z=-0.952, p=0.341
		–	257	48.50	12.42	
	Women	+	219	46.69	11.14	Z=-4.369, p<0.001*
		–	379	53.98	11.90	
Life style	L0		101	47.42	11.97	Ki-square=19.804,p<0.001*
	L1		195	52.55	11.39	
	L2		354	49.39	12.28	
	L3		356	51.83	12.63	
Smoking	C0		548	57.94	9.68	Ki-square=524.903, p<0.001*
	C1		104	44.80	6.88	
	C2		193	37.20	9.32	
	C3		161	45.85	7.08	
Eating habits	E0		210	48.06	13.68	Ki-square=51.034, p<0.001*
	E1		187	47.39	12.00	
	E2		214	52.59	11.65	
	E3		395	52.57	11.45	
Snoring	S0		317	52.28	12.13	Ki-square=9.361,p=0.09
	S1		459	50.00	12.33	
	S2		230	49.78	12.33	
Etli ekmek	EE1		201	45.71	12.94	Ki-square=135.350, p<0.001*
	EE2		266	46.72	11.68	
	EE3		539	54.47	11.05	
Totally			1006	50.67	12.30	

NOT: *Important, statistical ($p < 0.05$).
This table indicated blood levels HDL by interrogating factors such as, sex, central obesity especially women, life style, cigarette smoking, etli ekmek, eating habits ($p < 0.05$).

In the out come of searching, 1006 persons both men and women level is 115.49 ± 38.52 mg/dl, in man this number is 112.23 ± 36.19 mg/dl, in women it is found as 117.71 ± 39.90 mg /dl. It is defined central obesity has negative effect on LDL as ($p < 0.05$) (Table-4).

According to the calculation which is mode with the data, the findings of a connection between snoring and smoking which will be defined as interesting, gives us the idea, this situation can gain importance as a criteria which can be on essential criteria in scientific studies.

TABLE-4
MEASUREMENT OF LOW DENSITY LIPOPROTEIN LEVEL

			Low density lipoprotein level (mg/dl)			
			Number	Mean	Standard deviation	
BMI	Normal		527	116.53	37.72	Z=-0.616, p=0.538
	Obese		479	114.33	39.38	
Sex	Men		408	112.23	36.19	Z=-2.227, p=0.026*
	Women		598	117.71	39.90	
Central obesite	Men	+	151	119.95	40.12	Z=-2.902, p=0.004*
		–	257	107.69	32.92	
	Women	+	219	128.72	43.57	Z=-4.419, p<0.001*
		–	379	111.34	36.18	
Life style	L0		101	114.73	40.86	Ki-square=0.607, p=0.895
	L1		195	115.18	36.73	
	L2		354	116.38	38.29	
	L3		356	114.98	39.15	
Smoking	C0		548	117.91	40.66	Ki-square=7.408, p=0.060
	C1		104	113.50	34.94	
	C2		193	110.83	36.51	
	C3		161	114.09	35.07	
Eating habits	E0		210	110.34	36.02	Ki-square=7.946, p=0.047*
	E1		187	116.07	42.31	
	E2		214	119.05	38.08	
	E3		395	116.01	38.02	
Snoring	S0		317	113.25	38.12	Ki-square=4.962, p=0.084
	S1		459	118.10	38.93	
	S2		230	113.35	38.07	
Etli ekmek	EE1		201	109.52	35.63	Ki-square=7.914, p=0.019*
	EE2		266	116.22	39.22	
	EE3		539	117.35	39.05	
Totally			1006	115.49	38.52	

NOT: *Important, statistical ($p < 0.05$).
This table indicated blood levels LDL by interrogating factors such as, sex, central obesity, etli ekmek, eating habits ($p < 0.05$).

Conclusion

The dietary and environmental factors that polyunsaturated and monounsaturated fatty acids for some of the saturated fatty acids is most is most beneficial, especially total cholesterol and high density lipoprotein and low density lipoprotein[1-3].

According to the previous reports[4,5] that decreased high density lipoprotein levels is one of the most leading death causes in coronary disease heart.

(i) This study performed on total 1006 adult men and women indicates that regular exercise affects the plasma lipid profilie favourable, especially high density lipoprotein (Table-3, $p < 0.05$).

(ii) In comparions, the lowest high density lipoprotein levels were determined in C2 group, smokers and the highest high density lipoprotein levels were determined in C0 group.

This fact will underline the negative effect of passive cigarette smoking in societies and further studies will be needed to enlighten its significance in high mortality and morbidity rates among the patients with coronary heart disease. It should also be remembered that passive cigarette smoking could be a major risk factor owing to increasing prevalance in societies and in the assessment of likely causes of coronary heart disease, medical workers should be alert of passive cigarette smoking. It was aimed to investigate the effect of passive cigarette smoking on blood high density lipoprotein cholesterol levels and it could be suggested in light of literature that this a rarely investigated condition in previous studies. In addition to this study, on interesting correlation was determined between smoking and snoring in light of histories provided from the patients is thought to be a significant charecteristic to be used in future studies.

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