

Effect of Snoring and Smoking on Blood Lipid Levels

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This study reports the relationship with snore (obstructive sleep apnea syndrome, OSAS), cigarette smoking and blood lipid levels in human. This work carried out on adult patients (age: 25-55) who applied to the polyclinic of Cumra Public Hospital between January 2005 and November 2006, of 598 women and 408 men. As a result, it has been found that the snoring and cigarette smoking adversely effect on blood lipid levels.

Key Words: Snore, Smoking, Blood lipid.

INTRODUCTION

In search of the findings of connection between snore (obstructive sleep apnea syndrome), cigarette smoking and blood triglyceride leveles, blood high density lipoprotein cholesterol levels, gives us the idea. This study can gain importance for scientific studies. In some studies, it was indicated that decreased high density lipoprotein, significant factor in terms of heart, leads to increased triglyceride, a risk factor for atherosclerosis¹. It is also suggested in some studies that decreased high density lipoprotein, one of a significant risk factors in coronary heart disease, will be encountered on a large scale in near future². This situation in present time, with lipid levels in blood open new window of research.

EXPERIMENTAL

The represented study has been carried out on 1006 adults from Cumra Public Hospital. The AKS, CRP, ALP, AST, ALT, TSH, FT3, FT4, urea and creatine levels should be within normal limits in blood, not being in the treatment of malinty, during the last 3 months and not undergone by serious surgical treatment.

Blood measures were taken into vacuum vials after 12 h fasting and following the clotting by analyzing serums, triyglycerides, cholestrol, high density lipoprotein cholesterol, low density lipoprotein cholesterol analisis are taken.

For cigarette smoking evaluation of adult patients, four main group was formed. These groups; C0 group (548 patients): never cigarette smoking, C1 (104 patients):

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Ten cigarette smoking patients, C2 (193 patients): More than 10 cigarette smoking patients, CP (161 patients): passive cigarette smoking at the very least 1 h a day be exposed with cigarette smoke.

Snore (obstructive sleep apne syndrome) assessment; S0 (317 persons): not snoring adult patients, S1 (459 persons): sometimes snoring adult patients, S2 (230 persons): always snoring adult patients, three variety are grouped. The patients snoring symptoms have been found by Doctor Hayrullah Yazar after the relatives of patients were interrogated. The interrogations were registered to poll form.

From collected samples, all sera were centrifuged after clotting and high density lipoprotein (HDL) analytical tests were performed simultaneously. These tests were performed using Thermo Electron high density lipoprotein: 981657 equipments on Conelab 60 i Automated Test Device.

Method: Including work to the criteria and blood serum normal to be at borders for required examinations, lipid levels in blood likely to affect pathological circumstances laboratory reflector³ was formed.

A. Blood levels within normal limits; fasting blood glucose (FBG), enflamation test (C reactive proteine), alkaline phosphatase (ALP), liver function tests (AST, ALT), thyroid stimulating hormone, free thyroid 3, free thyroid 4, kidney function tests (blood urea and blood creatine).

B. During the period the following conditions applied. Not being in the treatment of malinty. During the last 3 months, not undergone by serious surgical treatment. Including work ages 25-55 years women and men adult patients that, because; snore and cigarette smoking are still on the increase worldwide in 25-55 years^{3,4}.

RESULTS AND DISCUSSION

Factor levels frequency

Cigarette smoking: Never smoking person (C0) are 548 person, smokers less than 10 items (C1) are found to be 104 person, smokers smoking 10 and above a day (C2) are found to be 193 person and as for passive smokers (CP) they are found to be 161 person. Snore groups blood lipid values of a similar situation grouped smoking also stands out. In such a way that; never smoking group (C0) HDL cholesterol: 58.21 (highest in value HDL, table) as, cigarette smoking 10 and above a day (C2) group TG: 216,64 (highest in value TG, Table-1) was measured.

Snore (obstructive sleep apne syndrome): S0: not snoring (317 adult person), S1: sometimes snoring (459 adult person), S2: always/continue snoring in a bothering way (230 adult person) was evaluated. Never snoring group (S0) HDL cholesterol: 53,86 (highest in value HDL, Table-2) as, continuous snoring group (S2) TG: 173.36 (highest in value TG, Table-2) was measured.

Lipid values

TG: From the obtained data, the average triglyceride blood levels of 1006 adults persons are found as 167.80 ± 98.43 mg/dl. This number is found in men as 174.37 ± 102.69 mg/dl and in women as 163.31 ± 95 mg/dl. The results are seen in

the definition of 'high frontier' between 150/190 mg/dl. Never smoking adult patients group (C0) women and men are obtained value lowest TG in blood (Table-1). On the other hand 10 cigarette smoking and above a day group (C2) are obtained value highest TG level in blood (Table-1).

TABLE-1
CIGARETTE SMOKING, SEX AND BLOOD LIPID LEVELS

			LDL mg/dl		HDL mg/dl		TG mg/dl		Cholesterol mg/dl	
			Count	Mean	Count	Mean	Count	Mean	Count	Mean
			Cigarette	C0	Sex Women	371	118.61	371	58.21	371
Men	177	116.45			177	57.38	177	155.65	177	202.80
C1	Sex Women	55		113.33	55	44.91	55	169.45	55	192.31
	Men	49		113.71	49	44.69	49	187.76	49	190.67
C2	Sex Women	77		113.97	77	38.38	77	216.64	77	189.68
	Men	116		108.76	116	36.43	116	197.62	116	179.35
CP	Sex Women	95		119.79	95	45.52	95	171.91	95	195.65
	Men	66		105.91	66	46.35	66	173.83	66	184.79

TABLE-2
SNORE, SEX AND BLOOD LIPID LEVELS

			LDL mg/dl		HDL mg/dl		TG mg/dl		Cholesterol mg/dl	
			Count	Mean	Count	Mean	Count	Mean	Count	Mean
			Snore	S0	Sex Women	205	116.71	205	53.86	205
Men	112	106.93			112	49.39	112	171.88	112	187.71
S1	Sex Women	270		120.44	270	51.81	270	173.36	270	204.63
	Men	189		114.76	189	47.42	189	175.87	189	193.49
S2	Sex Women	123		113.39	123	51.33	123	159.87	123	193.44
	Men	107		113.32	107	48.01	107	174.36	107	192.95

Cholesterol: The average cholesterol level is measured as 196.66 ± 44.93 mg/dl. It is found in men as 191.76 ± 43 mg/dl and in women as 200.00 ± 45.59 mg/dl.

High density lipoprotein: Average high density lipoprotein cholesterol level is found as 50.67 ± 12.30 mg/dl. In men the value is 48.11 ± 12.59 mg/dl while in women as 52.41 ± 11.80 mg/dl. It is found that (active-passive) smoking have negative effect on HDL (Table-1, $p < 0.05$).

Low density lipoprotein: In the outcome of searching, totally 1006 people 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 (Table-1).

Conclusion

The 10 cigarette smoking and above a day (C2) with continue snoring (S2) similarity which are lipid levels in blood especially TG and HDL cholesterol. The similarity between the circumstance, that ki-square test for evaluated and statistics meaningful (Table-3, $p < 0.05$).

TABLE-3
CIGARETTE, SNORE

Cigarette*Snore			Snore			Total
			S0	S1	S2	
Cigarette	C0	N	210	242	96	548
			%38.3	%44.2	%17.5	%100.0
			%66.2	%52.7	%41.7	%54.5
	C1	N	33	45	26	104
			%31.7	%43.3	%25.0	%100.0
			%10.4	%9.8	%11.3	%10.3
	C2	N	38	91	64	193
			%19.7	%47.2	%33.2	%100.0
			%12.0	%19.8	%27.8	%19.2
	CP	N	36	81	44	161
			%22.4	%50.3	%27.3	%100.0
			%11.4	%17.6	%19.1	%16.0
Total	N	317	459	230	1006	
		%31.5	%45.6	%22.9	%100.0	
		%100.0	%100.0	%100.0	%100.0	
		%3.6	%8.1	%4.4	%16.0	
		%31.5	%45.6	%22.9	%100.0	

Ki-kare = 39.574, $p < 0.001$.

In searching also, according to the calculation which is made with the datum of anamnez, the findings of a connection between obstructive sleep apne syndrome (snore), cigarette smoking and blood TG leveles, blood HDL cholesterol levels, which will be defined as interesting (Tables 1-3, $p < 0.05$), gives us the idea, this situation can gain importance as a variety which can be in scientific studies.

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