

NOTE**Effect of Cigarette Smoking on High Density Lipoprotein Cholesterol Elevation**

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The effects of cigarette smoking which is either active or passive still is in agenda by clinicians on lipid levels specifically high density lipoprotein (HDL)-cholesterol in blood. The represented study has been performed on 1006 adult persons with 598 women and 408 men between age group of 25-55 from the Cumra Government Hospital. Blood samples taken from 12 h fasting between 8 and 9.30 AM from all the patients were saved into tubes. After coagulation, HDL-cholesterol analysis was completed by separation serums. The average HDL-cholesterol levels of 1006 adult persons is found as 50.67 ± 12.30 mg/dl. HDL-cholesterol levels of men is 48.11 ± 12.59 mg/dl and for women is 52.41 ± 11.80 mg/dl. In this study, it was aimed to investigate the effect of active and passive cigarette smoking on blood HDL cholesterol levels.

Key Words: Cigarette smoking, High density lipoprotein-cholesterol, Coronary heart disease.

It was reported that high density lipoprotein (HDL) plays a significant role in the transportation of cholesterol from peripheral tissues to liver and in the delivery of cholesterol to steroid-synthesizing tissues. In addition, HDL facilitates the output of cholesterol, which means the initial phase of inverse cholesterol transportation, out of non-liver tissues¹. In some studies, it is indicated that decreased HDL, significant factor in terms of heart, leads to increased LDL, a risk factor for atherosclerosis². It is also suggested in some studies that decreased HDL, one of the significant risk factors in coronary heart disease will be encountered on a large scale in near future¹. Active-passive cigarette smoking, however, is a condition experienced at homes, at works, cafes, etc. In our daily lives, the effect of cigarette smoking, on HDL cholesterol level, have been enlightened in present study. Another significant positive fact is that government offices and non-governmental offices are warning against cigarette smoking in public places and new regulations and legal efforts is being made to large extent³.

In this study, it is aimed to investigate the effect of active and passive cigarette smoking on blood HDL cholesterol levels and passive cigarette smoking could be suggested in light of previous literature.

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For 1006 adults persons (598 women and 408 men) from Cumra Public Government, Hospital, Turkey, essential tests were performed, All necessary information was provided to them and their blood samples were put into vacuum 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.

In present study, total 1006 patients were classified in to 4 groups as fallows: the ones not smoking actively C0 group, the ones smoking less than 10 cigarettes daily were put into C1 group, the ones smoking more than 10 cigarettes daily were group as C2 grouped and the ones exposed to cigarette smoke for at least 1 h daily were group as CP grouped, passive smokers.

Detection method: 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 treatment of malinity, (4) During the last three months, not undergone by serious surgical treatment, (5) Being between the ages of 25-55 while collecting their blood samples.

As a consequence of present study, average HDL cholesterol levels in total 1006 patients were 50.67 ± 12.30 mg/dl HDL cholesterol levels, *i.e.*, 48.11 ± 12.59 mg/dl in men and 52.41 ± 11.80 mg/dl in women. HDL cholesterol levels were found to be 44.80 ± 6.88 mg/dl in C1 group, 37.20 ± 9.32 mg/dl in C2 group and 45.85 ± 7.85 mg/dl in CP group among smokers. In C0 group as non-smokers, the same levels were observed as 57.94 ± 9.68 mg/dl (Table-1).

TABLE-1
HIGH DENSITY LIPOPROTEIN

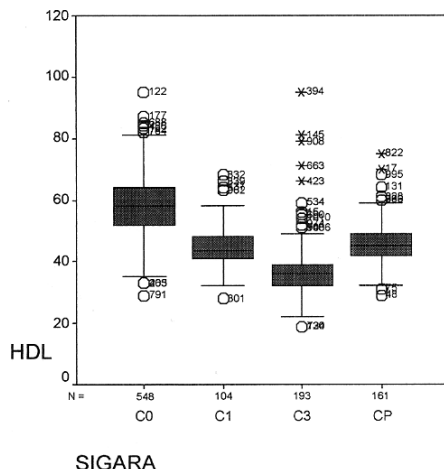
		HDL mg/dl			
		Number	Mean	Standard deviation	
Sex	Man	408	48.11	12.59	Z=-5.703, p < 0.001*
	Woman	598	52.41	11.80	
Smoking group	C0	548	57.94	9.68	Ki-square = 524.903, p < 0.001*
	C1	104	44.80	6.88	
	C2	193	37.20	9.32	
	CP	161	45.85	7.08	
Totally		1006	50.67	12.30	

NOT: *Important, Statistical (p < 0.05).

This table indicated blood levels HDL by interrogating factors such as, sex and cigarette smoking (p < 0.05).

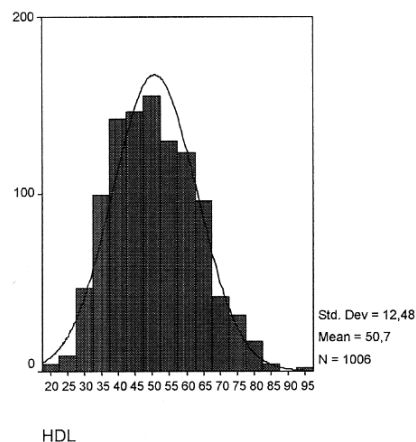
The most significant point among the considerable results of present study is that passive cigarette smoking is of negative effects on HDL cholesterol levels and this result is consistent with the results of previously reports. The decrease of HDL cholesterol levels in the patients smoking less than 10 cigarettes daily (C1 group) is almost the same as the decrease of the ones exposed to cigarette smoke for 1 h daily (Table-1, Fig. 1).

This study shows that passive cigarette smoking decreases blood HDL cholesterol level (Figs. 1 and 2). It is a commonly accepted fact that low level of HDL cholesterol is one of the main factors of deaths originating from coronary heart disease. The findings in this study, are becoming more and more significant in the prevention of the deaths from coronary heart disease due to passive cigarette smoking in societies⁴.



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Fig. 1. Cigarette smoking at different levels is determined to affect HDL cholesterol at different levels (Q-Square = 553. 299, $p < 0.001$)



HDL

Fig. 2. Cigarette smoking at different levels is determined to affect HDL cholesterol at different levels (Q-Square = 553. 299, $p < 0.001$)

Conclusion

In present studies, by interrogating factors such as sex, active and passive cigarette smoking, its connection with HDL-cholesterol levels in blood, it is found that (active-passive) smoking have negative effect on HDL (Table-1, $p < 0.05$) in blood. The most significant point among the considerable results of present study is that passive cigaret smoking is of negative effects on HDL cholesterol levels and this result is consistent with the results of previous reports.

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