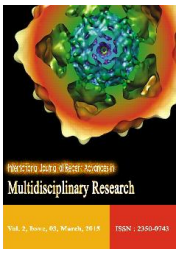

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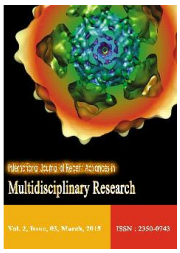

Review Article

A STUDY OF LIPID PROFILE IN YOUNG SMOKERS

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ABSTRACT

Study of lipid profile in young smokers provides opportunity to explain the physiological consequences of the cigarette smoking activity. As the current report concerns solely to the study of lipid profile in normal healthy controls and smoking male subjects, the results of this study can be correlated with other biochemical, physiological and clinical aspects. This approach is hence, helpful for the future studies in understanding the underlying mechanism causing series of changes influenced by smoking activity.

INTRODUCTION

Smoking is an escalating health problem especially in developing countries such as India. The prevalence of smoking in India varies about 15% to over 50% among men. However smoking is less common among women with prevalence of 4% (or) less. Cigarette smoking has been found to alter the Lipoprotiens levels. Plasma Lipoprotiens abnormalities are major risk factors for the occurrence of atherosclerotic vascular disease. Cigarette smoking also increases oxidative modification of LDL, circulating products of lipid peroxidation and autoantibody titres to oxidized LDL are significantly increased in smokers.

MATERIALS AND METHODS

The present study has carried in the Department of Biochemistry, Kurnool Medical College, Kurnool, during the year 2012 – 2103.The study composed of 100 select age and sex matched smokers and nonsmokers between the age group of 20 to 35 years. All the subjects were consuming both vegetarian diet and non vegetarian diet, and belonging to different walks of community.

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The subjects were volunteer participants in the study and gave informed consent. All subjects were evaluated and selected by detailed medical history, physical examination, systemic examination and routine investigations to rule out any underlying diseases. Subjects having diseases, which are known to influence the blood lipids or patients on lipid lowering drugs or a diet restriction for any reason and persons chewing tobacco, ex- smokers, obese persons, alcoholics and having risk factors like Hypertension, Diabetes Mellitus were excluded from the present study. Each patient gave informed consent and the study was approved by ethical and research committee of Kurnool Medical College, Kurnool. The present comprises of 2 groups.

Group I Non Smokers (Control) n = 25
Group II Cigarette Smokers n=75
IIA – Mild Smokers (n = 25)
IIB – Moderate Smokers (n = 25)
IIC – Heavy Smokers (n = 25)

In order to ensure accurate and reproducible results overnight 12-24 hours fasting blood samples were collected from these subjects. Serum was separated by centrifugation at 3600 rpm for six minutes. The clear serum sample were employed for the estimation of

Table 1. Comparison of total cholesterol levels between nonsmokers and different groups of smokers

Groups	Total Cholesterol		Groups-Wise Comparison		
	Range	Mean±SD	II-A	II-B	II-C
I. Non smokers (n=25)	135.3±188.7	162.2 ± 16.2	P<0.01	P<0.01	P<0.01
II. Mild smokers (n=25)	162.5 ± 190.8	178.7± 7.1	P<0.01	P<0.01	P<0.01
III. Moderate smokers (n=25)	176.8 ±221.2	193.0± 13.8	P<0.01	P<0.01	P<0.01
IV. Heavy smokers (n=25)	180.7 ±236.8	210.7 ± 16.1	P<0.01	P<0.01	P<0.01

From the Table-IV it is evident that there is a significant dose dependent increase in the levels of total cholesterol among the groups. (P<0.01)

Table 2. Comparison of various biochemical parameters between non smokers and smokers

Groups	Total Cholesterol (mg/dl)	TAG(mg/dl)	HDL-C (mg/dl)	LDL-C (mg/dl)	VLDL-C (mg/dl)
Controls nonsmokers (n=25)	162.2 ± 16.2	121.9 ± 32.0	49.1 ± 5.7	88.8 ± 21.1	24.4± 6.4
Total smokers (n=75)	194.1± 18.3	180.8 ±32.2	42.1 ± 6.7	116.2± 25.1	36.2± 6.5
t-value	7.78	7.98	4.70	4.92	7.92
p-value	<0.01	<0.01	<0.01	<0.01	<0.01

- Total Cholesterol
- Triglycerides
- HDL-Cholesterol.

The levels of LDL Cholesterol and VLDL Cholesterol were calculated by using Friedwalds formula.

- LDL Cholesterol (mg%) = Total Cholesterol – (HDL Cholesterol + TG/5)
- VLDL Cholesterol (mg %) = TG/5.

The significant levels of different parameters between the study groups were calculated by using student't' test. From the Table-4 it is evident that there is a significant dose dependent increase in the levels of total cholesterol among the groups. (P<0.01).

RESULTS

Table 2 showing comparison of various biochemical parameters between non smokers and smokers. In the present study the mean level of Total Cholesterol in control group and in total smokers are in the range of 162±16.2mg% and 192±18.3mg% repectively. This difference is found to be highly significant (p<0.001). The association of Total Cholesterol level with smoking is indeed very prominent; the present study is in accordance with the study of M.Khurana. Inger N J Istad, Egil Arnesen.

DISCUSSION

Cigarette Smoking is the preventable cause of illness and mortality, but now even many smokers continue to smoke because of its addiction, which is caused by nicotine, which is present in cigarette smoke. Cigarette smoking is one of the major causes of Atherosclerosis.

There is correlation between the duration of smoking. Several chemical constituents present in cigarette smoke have multiple effects on different parameters.

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