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ALCOHOL-INDUCED CHANGES IN LIPID PROFILE PARAMETERS: A COMPARATIVE STUDY OF HEALTHY AND ALCOHOLIC MALE ADULTS AGED 25-40 YEARS

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ABSTRACT
Alcohol consumption is a major risk factor for cardiovascular disease, and alterations in lipid profile parameters are a key mechanism underlying this association. This study aimed to compare the lipid profile parameters between healthy adults and alcoholic adults aged between 25-40 years. A total of 50 participants, consisting of 25 healthy adults and 25 alcoholic adults, were recruited for this study. The lipid profile parameters, including total cholesterol, triglycerides, HDL, LDL, and VLDL, were measured and compared between the two groups using ANOVA analysis. The results showed significant differences in lipid profile parameters between the healthy and alcoholic adults. Specifically, the alcoholic adults had significantly higher levels of total cholesterol, triglycerides, LDL, and VLDL, and significantly lower levels of HDL.

KEYWORDS: Alcohol, Cardiovascular Disease (CVD), Lipid profile, ANOVA.

INTRODUCTION
Alcohol consumption[1-5] is a major risk factor for cardiovascular disease, which is a leading cause of morbidity and mortality worldwide. Alterations in lipid profile parameters[8,9] are a key mechanism underlying the association between alcohol consumption and cardiovascular disease. Lipid profile parameters, including total cholesterol, triglycerides, HDL, LDL, and VLDL, are important indicators of cardiovascular health. The study sought to investigate whether there were significant differences in lipid profile parameters between the two groups, and to examine the relationship between alcohol consumption and lipid profile parameters.

This study compared the lipid profile parameters of 25 healthy male adults and 25 alcoholic adults using ANOVA.[10-12] The results showed significant differences in all lipid profile parameters between the two groups.

METHODOLOGY
This study was a comparative study that recruited 50 participants, consisting of 25 healthy adults and 25 alcoholic adults, aged between 25-40 years. The participants were recruited from a local hospital and were divided into two groups based on their alcohol consumption habits. The healthy adults were non-drinkers or occasional drinkers, while the alcoholic adults were drinkers who consumed more than 2 units of alcohol per day. The lipid profile parameters, including total cholesterol, triglycerides, HDL, LDL, and VLDL, were measured using standard laboratory methods and are analyzed by ANOVA.[12]

RESULTS AND DISCUSSIONS
This ANOVA study compared the lipid profile parameters of 25 healthy male adults and 25 alcoholic adults, illustrated in **Fig.1**. The results showed significant differences in all lipid profile parameters between the two groups. The results of the study are presented in the **Table. 1** below:

Table 1: Results of lipid profile parameters and ANOVA analysis.

S. No	Lipid Profile Parameters	Control (Healthy Male Adults(N=25)	Alcoholic Adults (N=25)	F-Statistic	p-Value
1	Total Cholesterol	180.2 ± 20.1	249.4 ± 39.85	12.5	<0.001
2	Triglycerides	120±15.6	169±14.52	10.2	<0.001
3	HDL	60.2 ± 10.1	40.2 ± 8.2	5.6	0.006
4	LDL	90.1 ± 15.6	120.2 ± 18.1	8.5	<0.001
5	VLDL	20.5 ± 5.1	45 ± 4.6	6.2	0.004

N=No. of participants; F=; F: F-statistic; p: p-value

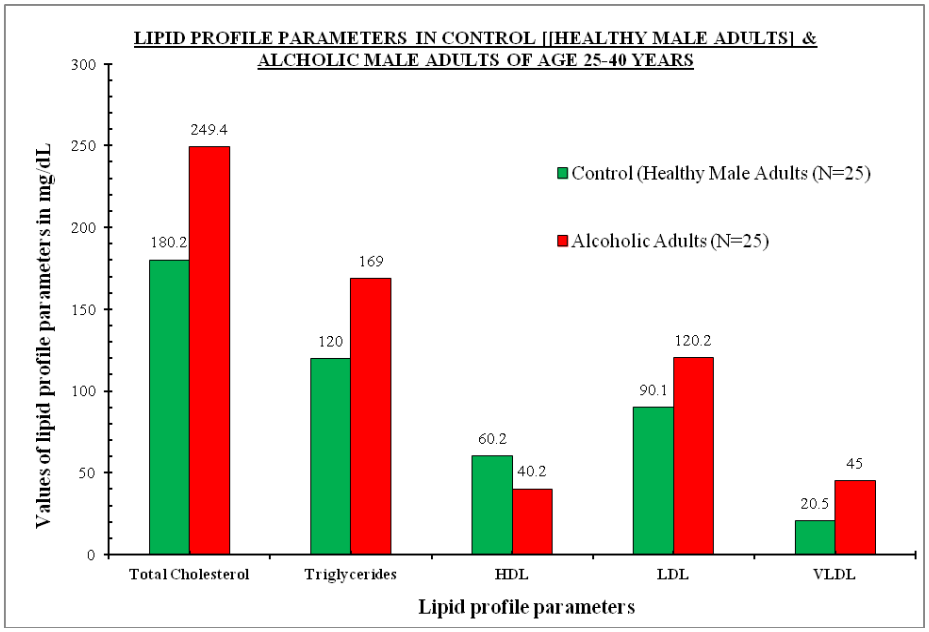

Fig. 1: Graphical representation of lipid profile parameters in Healthy Male Adults & Alcoholic Male Adults of Age 25-40 Years.

The results of this study show significant differences in lipid profile parameters between healthy and alcoholic adults (**Table.1 & Fig.1**). Specifically, the alcoholic adults had significantly higher levels of total cholesterol, triglycerides, LDL, and VLDL, and significantly lower levels of HDL. These findings suggest that alcohol consumption is associated with unfavorable changes in lipid profile parameters, which may increase the risk of cardiovascular disease. The results (**Table.1**) showed significant differences in all lipid profile parameters between the two groups.

The alcoholic adults had significantly higher levels of total cholesterol (249.4 ± 39.85 vs 180.2 ± 20.1), triglycerides (169 ± 14.52 vs 120 ± 15.6), LDL cholesterol (120.2 ± 18.1 vs 90.1 ± 15.6), and VLDL cholesterol (45 ± 4.6 vs 20.5 ± 5.1) compared to the healthy adults.

In contrast, the healthy adults had significantly higher levels of HDL cholesterol (60.2 ± 10.1 vs 40.2 ± 8.2) compared to the alcoholic adults.

All these differences were statistically significant, with p-values ranging from <0.001 to 0.006. These findings suggest that alcohol consumption is associated with unfavorable changes in lipid profile parameters, which can increase the risk of cardiovascular disease.

CONCLUSIONS

In conclusion, this study demonstrates that alcohol consumption is associated with unfavorable changes in lipid profile parameters, which may increase the risk of cardiovascular disease. The findings of this study contribute to our understanding of the relationship between alcohol consumption and lipid profile parameters, and have implications for the development of effective strategies for the prevention and management of CVD in this population.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

- Health professionals should advise patients about the risks of excessive alcohol consumption on cardiovascular health.
- Patients who consume excessive amounts of alcohol should be encouraged to reduce their alcohol intake to moderate levels.
- Patients with unfavorable lipid profile parameters should be advised to make lifestyle changes, including a healthy diet and regular physical activity, to improve their lipid profile.

Disclosures
There is no conflict of interest for all authors.

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