

MODERATE ALCOHOL INTAKE AND HIGH DENSITY LIPOPROTEIN CHOLESTEROL

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ABSTRACT

Moderate alcohol intake appears to exert a protective effect against coronary Heart Disease. There are reports stating that mild to moderate intake of alcohol marginally elevates HDL cholesterol and hence reduces the risk of myocardial infarction to a certain extent. In present study we compared HDL cholesterol levels in men with moderate alcohol intake and men with alcohol intake. Mean HDL cholesterol level in cases was found to be 46.3 ± 11.6 mg/dL and in controls it was 32.8 ± 9.1 mg/dl. The levels of HDL cholesterol were significantly higher in cases compared to controls (graph 2). This was statistically significant ($p < 0.001$). We found that mean HDL cholesterol in men consuming alcohol was significantly elevated than men in men without alcohol consumption. Hence life style factors including moderate consumption of alcohol positively influence the incidence of cardiovascular disease.

KEY WORDS

Alcohol consumption, Atherosclerosis, HDL cholesterol, lipoprotein.

INTRODUCTION

High Density Lipoproteins (HDL) transport cholesterol from peripheral tissues to liver. It is later excreted through bile. It is also called reverse cholesterol transport by HDL. HDL cholesterol is known as anti atherogenic in nature. The level of HDL in serum is inversely related to incidence of myocardial infarction. HDL level below 35mg/dl increases the risk, while HDL levels above 60 mg/dL protects the person from coronary artery diseases (1). Alcohol is a pure carbohydrate and can be quickest source of energy. Alcohol has poor nutritive value. Alcohol exerts direct destructive effect on heart muscles (2). Effects of alcohol consumption on cardiovascular disease is complex. Heavy alcohol intake increases mortality due to cardiovascular diseases (3). Moderate intake appears to exert a protective effect against coronary heart disease as compared with drinking no alcohol (4). Alcohol consumption is one of the major determinants of serum HDL cholesterol (5). There are reports stating that mild to moderate

alcohol intake marginally elevate HDL cholesterol and hence reduce the risk of myocardial infarction to certain extent. Hence the present study was undertaken to study HDL cholesterol levels in men with moderate alcohol intake and men without alcohol intake.

MATERIALS AND METHODS

We included men in age group of 35 yrs to 55 yrs with intake of >1 drink/day and <3 drinks/day (CASES) and compared them with age matched men with no history of alcohol intake (CONTROLS). Men with history of diabetes mellitus, other major illness and on medication that could affect lipid levels were excluded.

Brief history was taken. Serum total cholesterol and HDL cholesterol were estimated using autoanalyzer. Mean levels of total cholesterol and HDL cholesterol were compared between the groups.

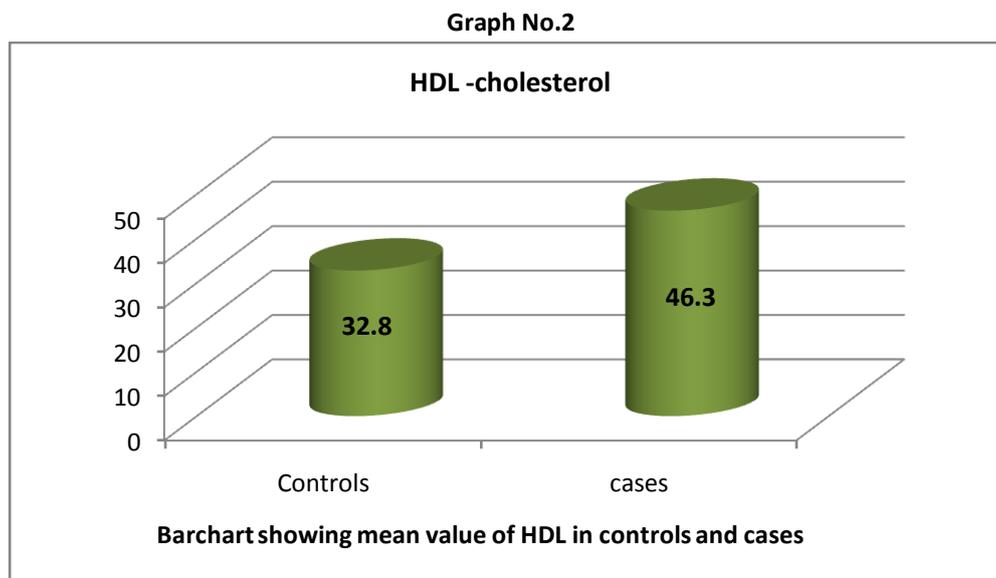
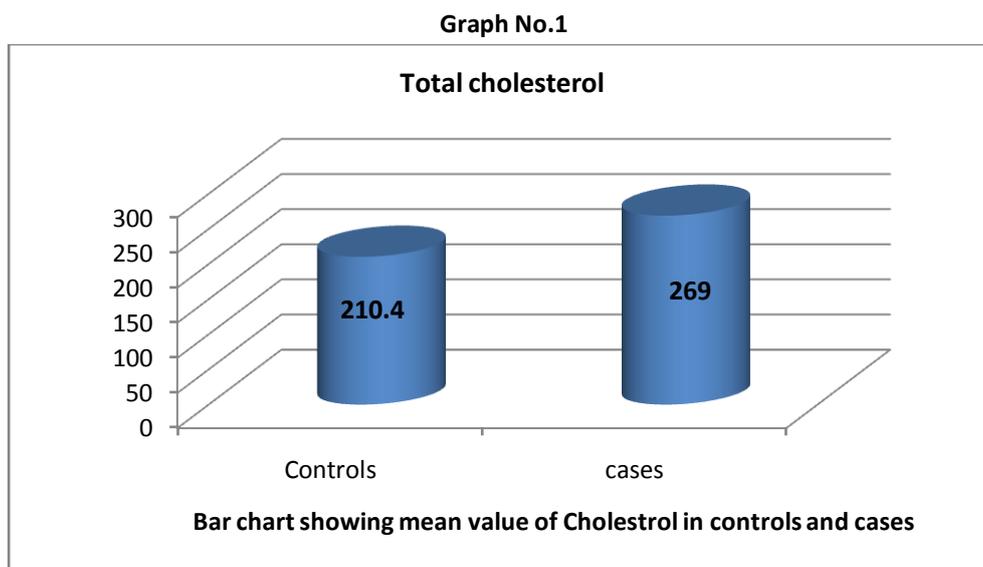
RESULTS

A total of 40 men were included in Cases group and 42 men in control group. Mean total cholesterol levels in cases was in range of 269±23.8 mg/dL and in control group it was in range of 210.4±34.6 mg/dL. Total cholesterol level in cases was more in cases than

controls (**Graph 1**). Mean HDL cholesterol level in cases was found to be 46.3±11.6 mg/dL and in controls it was 32.8± 9.1 mg/dl. The levels of HDL cholesterol were significantly higher in cases compared to controls (**Graph 2**). This was statistically significant (p<0.001).

TABLE 1: Shows mean values of serum Total Cholesterol and HDL cholesterol in cases and controls

	Controls	Cases
Total cholesterol	210.4±34.6mg/dl	269±23.8mg/dl
HDL -cholesterol	32.8±9.1mg/dl	46.3±11.6mg/dl



DISCUSSION

Alcohol has a fat sparing effect; habitual consumption of alcohol in excess of energy needs produces fat gain. Intake of alcohol is strongly correlated with high mortality from CHD. It was reported that HDL-C level is increased by moderate alcohol consumption; however this was not seen after development of alcoholic cirrhosis. Controlled alcohol consumption leads to significant increase in HDL concentration. Inclusion of alcohol in diet resulted in highly significant changes of HDL. According to Kralova Lesna et al study by (6) .Further there is inverse association of moderate alcohol intake with risk of M.I. mediated by increased level of HDL (7) .Our study also showed increased level of HDL-C in men with intake of 1 to 3 drinks per day compared to men without alcohol intake. Alcohol increases HDL-c by raising transport rates of major HDL apolipoproteins(5).

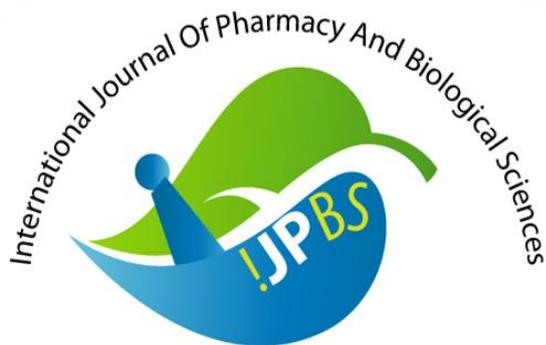
CONCLUSION

Moderate alcohol intake is associated with increased HDL-C concentration.which is further associated with

increased HDL-C concentration,Which is further associated with lower risk of atherosclerosis,hence may help in reducing the incidence of CHD.

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