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Alcohol-Induced Changes in Lipids and Lipoproteins

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Abstract

Fasting plasma samples from 42 voluntary subjects of moderate to high socioeconomic status families and living in Delhi, taking 5–20 oz/week of alcohol regularly, and 42 normal subjects from comparable socioeconomic status with no history of intake of alcohol and no evidence of any known metabolic or coronary problems were analyzed for cholesterol and triglycerides and their levels in lipoprotein fractions, i.e., very low density lipoproteins (VLDL), low density lipoproteins (LDL), and high density lipoproteins (HDL). Free fatty acids, urea, uric acid, and glucose levels were also determined and dietary intake was calculated in the two groups.

Cholesterol and triglycerides in plasma, and VLDL and LDL fractions were found to be increased in the alcohol-taking group even though their intake of alcohol was moderate. VLDL fraction formed 65 and 32% of total triglycerides and cholesterol, respectively. Sugar, uric acid, and free fatty acids (FFA) increased significantly in the alcohol-taking group. Total energy intake was significantly higher in the alcohol-taking group mainly from significant high intake of proteins and fats. Calculated on the basis of intake/day/kg of body weight the difference in intake of protein, fat, and carbohydrates was insignificant Regular intake of even small quantity of alcohol along with food rich in proteins and fats may induce elevation of high cholesterol-containing lipoproteins, i.e., LDL and VLDL with increased hypertriglyceridemia, and these increased levels may constitute important coronary risk factors.