SUMMARY AND CONCLUSION
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Since long a number of studies comparing different populations i.e. inter-population studies, have demonstrated etiologically significant independent association between dietary saturated fat - cholesterol and plasma cholesterol. For a single population, inter-individual variation in nutrients ingestion is generally small, nevertheless, a large inter-individual variation exists in serum cholesterol levels. Even when individuals are placed on a single uniform diet in a metabolic ward, the range of serum cholesterol remains wide.

Obviously, to put the matter in its most general form, this is a typical example of biological variability i.e. the wide range of response of protoplasm to a given environmental stimulus. Specific mechanism of the large inter-individual differences in serum cholesterol response to diet of a population remains a mystery.

Present study of post prandial lipid profile after cholesterol/fat was carried to find out that different response.

Material for the present study comprised of 58 cases (30 healthy and 28 diseased). Diseased cases were of diabetes (35.7%), chronic renal failure (32.1%) and ischaemic heart disease (32.1%). Present
Present study was undertaken with 2 aims:

1. To study the response of cholesterol/fat ingestion in healthy and diseased subjects.

2. Assessment of response after cholesterol/fat ingestion in subjects having normolipoproteinaemia and hyperlipoproteinaemia.

In each case following tests were done -

1. Estimation of total and free plasma cholesterol and plasma triglyceride.

2. Paper electrophoresis study of lipoprotein initially and after cholesterol/fat ingestion.

At same time statistical relationship was analysed between general particulars and plasma cholesterol and plasma triglyceride levels. Abnormal lipoprotein patterns were also studied in different diseases of present study.

Fredrickson's normal values for total plasma cholesterol, plasma triglyceride and W.H.O. classification of hyperlipoproteinaemia were taken as criteria for grouping cases into normolipoproteinaemia and hyperlipoproteinaemias.

In the present study test meal was containing 550 mg cholesterol in form of 2 eggs or crystalline cholesterol, 200 ml. milk, 20 gram butter and 2 bread slices.
Plasma Cholesterol:

The cholesterol in plasma has wide range of normal concentration and rises as age progress. Two third of total plasma cholesterol is found in esterified form while remaining one third is present as free form. Males generally have higher values than females but difference is statistically insignificant. Obese are reported to have significantly higher value than thin persons indicating an intimate correlation between plasma cholesterol and body built. Type and amount of work has no effect upon plasma cholesterol as non-significant difference is detected among persons engaged in different jobs. Whether individuals are vegetarian or non-vegetarian and consuming high cholesterol or low cholesterol diet, they are reported to have similar values. Similarly smoking has no effect on plasma cholesterol level. Alcoholics have significantly higher values than non-alcoholics in plasma cholesterol.

Plasma Triglyceride:

There is also wide normal range of plasma triglyceride and age dependent increase is reported in present series. Although males have shown higher values than females but difference is found insignificant. Body built, activity and diet do not seems to influence plasma triglyceride level as insignificant difference is observed among different groups in their values. Similarly lack of
relationship between smoking and plasma triglyceride is observed but, on comparing alcoholics with those not consuming alcohol, a significant effect of alcoholism is demonstrated upon plasma triglyceride level.

**Diseased Cases.**

Diseased cases were having significantly higher total and free plasma cholesterol and plasma triglyceride level than healthy cases. Highest mean values for all above biochemical parameters were observed in patients of chronic renal failure than other diseases. Incidence of hyperlipoproteinaemias were higher in diabetes, chronic renal failure and ischaemic heart disease than healthy group.

**Analysis of post prandial lipid profile:**

**Total and free plasma cholesterol:** Study of post prandial plasma cholesterol level revealed that test meal had no effect upon plasma cholesterol level. There was variable fluctuation in plasma cholesterol level but without any set pattern. There was also constancy in the ratio of total and free plasma cholesterol after the test meal. Similar effect was observed in healthy and diseased cases as well as in subjects having normolipoproteinaemia or hyperlipoproteinaemia. It was inter and intra-individual physiological variation and variable response which make difficult to demonstrate statistically significant effect of dietary cholesterol upon plasma cholesterol. The particular response of an individual to dietary cholesterol can only be demonstrated with C^{14} labeled cholesterol/fat feeding regimen.
Plasma Triglyceride:

There was significant rise in plasma triglyceride level after cholesterol/fat ingestion and peak reached near about at 4 hours. It was followed by continuous decline and returned to fasting level within 3 days after test meal. Rise in post prandial plasma triglyceride level was more in diseased than healthy cases and in subjects having hyperlipoproteinaemia than normolipoproteinaemia, indicating that post prandial rise was directly related to fasting level.

Lipoprotein:

After the test meal chylomicronaemia appeared in blood at 4 hours and disappeared rapidly. Paper electrophoresis revealed the rise in very low density lipoprotein (Pre-B band) after cholesterol/fat ingestion and peak reached at 8 hours. Very low density lipoprotein rise followed the clearance of chylomicrons. The lipoprotein pattern of post prandial samples at 3rd day and 5th day of the test meal was similar to fasting pattern. There was no change in low density lipoprotein (B band) and high density lipoprotein (A band) after test meal. Above pattern of change was observed more in diseased than healthy cases as well as in subjects having hyperlipoproteinaemia than normolipoproteinaemia.