MATERIAL AND METHODS
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The case material for the present study consisted of patients suffering either from ischaemic heart disease (IHD), diabetes or hypertension, admitted in the wards and attending out patient department of Medicine department, M.L.B. Medical College, Hospital, Jhansi.

The informed consent was taken from every patient who was included in the study. All the cases were subjected to a thorough clinical examination including dietary and family history to find out any hereditary risk factor predisposing to atherogenesis.

All basic clinical and biochemical parameters were recorded.

All the cases examined for the study were assigned following categories according to their disease.

GROUP A

This group consisted of 10 patients suffering from diabetes mellitus in the age group of 35-60 years. Out of these 10, 5 were having diabetes of juvenile onset while the remaining 5 having diabetes of maturity onset.

GROUP B

This group comprised 10 patients suffering from hypertension in the age group of 35-60 years.
GROUP C

This group comprised of 6 patients suffering from IHD diagnosed on the basis of clinical history and 12 lead electrocardiogram (report of the WHO task force on standardization of clinical nomenclature, 1979) in the age group of 35-60 years.

The fat consumption of the patients in the usual diet was assessed by eliciting dietary history. Specific consideration was given to record weekly amount of ghee and its type (saturated/unsaturated), oil and its type, milk and its products, eggs, and food additives. Any recent change in diet, oral or parenteral medication before or during the study were noted. Hospitalized patients were given the diet from the hospital for one week prior to the test.

DESIGN OF TEST

All the subjects were asked to have their dinner at around 6 P.M. on the previous day and then after they were instructed to have nothing in the night except water till the next morning when the test is over. Fasting blood samples were collected about 8 A.M. next morning in the recumbent posture without producing venous stasis (Koerserman et al, 1961). After this they were given the test meal consisting of three boiled eggs with 250 ml sweetened milk, which supplies approximately 750-800 mg of egg yolk cholesterol. There after three
postprandial blood samples were taken at an hourly interval for three consecutive hours. During this whole procedure the subjects were not allowed to take any thing orally except water and full instructions were given before hand to each subject to be completely relaxed and no considerable movements during the test. Smoking was strictly prohibited during the test procedure.

Plasma was separated from each sample and the following tests were performed.

I. **SERUM TOTAL CHOLESTEROL (STC)**

Cholesterol estimation was done by one step method of Wybenga and Pileggi (1970) utilizing commercial kits supplied by 'HI-TECH' diagnostics.

II. **SERUM TRIGLYCERIDES (STG)**

Estimation of the serum triglyceride was done by Acetyle Acetone method using kit supplied by 'HI-TECH' diagnostics.

III. **SERUM HIGH DENSITY LIPOPROTEIN (HDL)**

Estimation of HDL was done by using kit supplied by 'ETHNOR INDIA LIMITED'.

IV. **VERY LOW DENSITY LIPOPROTEIN (VLDL)**

**AND LOW DENSITY LIPOPROTEIN (LDL)**

VLDL value was obtained by the following formula given by Friedwald et al (1972).

\[ VLDL = \frac{STG}{5} \]  
(This formula is valid till STG values are less than 400 mg/dl).
LDL was also estimated by using the following formula given by Fredrickson, D.S. (1972).

\[ \text{LDL} = \text{STC} - (\text{STG}/5 + \text{HDL}) \text{ mg/dl.} \]

Statistical analysis of the observed group data was done by using paired 't' test and student 't' test.

**CALCULATION OF LIPID RISK FOR ATHEROGENESIS IN THE INDIVIDUAL SUBJECT**

A. Lipid risk for atherogenesis was calculated on the basis of fasting STC and LDL/HDL ratio follows:

1. STC ≥ 220, LDL/HDL ratio ≥ 3.
   Subject had higher lipid risk.
2. STC ≤ 220, LDL/HDL ratio ≤ 3.
   Subject had low lipid risk.
3. STC ≥ 220, LDL/HDL ratio ≤ 3 or STC ≤ 220, LDL/HDL ratio ≥ 3.
   Subject had moderate lipid risk.

B. Lipid risk for atherogenesis of short term high cholesterol feeding was calculated by the arbitrary criteria for rise and fall in LDL, HDL, VLDL value given the score as follows:
<table>
<thead>
<tr>
<th>Rise in Percentage</th>
<th>LDL</th>
<th>HDL</th>
<th>VLDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>+5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5 - 14</td>
<td>+ 1</td>
<td>- 1</td>
<td>+0.5</td>
</tr>
<tr>
<td>15 - 29</td>
<td>+ 2</td>
<td>- 2</td>
<td>+ 1</td>
</tr>
<tr>
<td>30 - 44</td>
<td>+ 3</td>
<td>- 3</td>
<td>+1.5</td>
</tr>
<tr>
<td>45 - 59</td>
<td>+ 4</td>
<td>- 4</td>
<td>+ 2</td>
</tr>
<tr>
<td>60 - 74</td>
<td>+ 5</td>
<td>- 5</td>
<td>+2.5</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Fall in Percentage</th>
<th>LDL</th>
<th>HDL</th>
<th>VLDL</th>
</tr>
</thead>
<tbody>
<tr>
<td>-5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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</tr>
</tbody>
</table>

The maximum rise or fall was taken in scoring and sum of the total scoring was done and atherogenic risk of short term feeding was calculated as follows:

1. For high risk subjects (on basal):
   Score: \( \leq -1 \) taken as protected.
   \( 7/ +1 \) taken as high risk.
   \( 7 \) to \( +1 \) taken as indeterminate risk.

2. For low risk subjects (on basal):
   Score: \( \leq -2 \) taken as protected
   \( 7/ +1 \) taken as high risk.
   \( 7 \) to \( +1 \) taken as indeterminate risk.

3. For borderline risk subjects:
   Same as high risk subjects.