Material and Methods
The case material for the present study consisted of the patients of IHD and patients of systemic hypertension.

The study was conducted in the department of Medicine M.L.B. Medical College & Hospital Jhansi.

Informed consent was taken from each and every patient. The detailed history and clinical examination were done and important investigations were also performed.

Family history, environmental stress and other risk factors were also elucidated. A total of 35 patients were studied, 15 patients were in the group of SHT and 10 patients were in the group of IHD. 3 Patients of IHD also had SHT.

**SHT GROUP**

Total 15 patients in the mean age group of 49.6 ± 3.40 2 were females and 13 males.

**CAD GROUP**

Total of 20 patients in the mean age group of (54.4±7.91) 4 were females and 16 males.

**GENERAL CHARACTERISTICS OF SHT GROUP**

1. **Occupation**:
   - Farmer - 2
   - Serviceman / exserviceman - 11
   - House wife - 2

2. **Physical activity**:
   - Active - 10
   - Sedentary - 5

**DIETARY HABIT**

- Vegetarian - 10
- Non Vegetarian - 5
- Diabetes - 0
- Non Diabetic - 15
**FAT CONSUMPTION**

Low fat < 40 gm/day - 1

High fat > 40 gm/day - 14

**SMOKING:**

Smoker - 9

Non Smoker - 6

**HYPERCHOLESTEROLEMIA**

Present - 3

Absent - 12

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**GENERAL CHARACTERISTICS OF IHD GROUP**

**OCCUPATION**

Farmer - 5

Service man - 11

House wife - 4

**HYPER CHOLESTEROLEMIA**

Present - 4

Absent - 16

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**PHYSICAL ACTIVITY**

Active - 13

Sedentar - 7

**DIABETES MELLITUS**

1

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**DIETARY HABBIT**

Vegetarian - 12

Non Vegetarian - 8

**SMOKING**

Smoker - 12

Non Smoker - 8

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**DESIGN OF TEST**

All the subject were asked to have their dinner at around 6 pm on the previous evening and they were instructed not to take anything except water till the next morning. Smokers were not allowed to smoke during the study period. In the next morning after 12 hours of fasting blood samples were collected at about 8 am in the morning in the recumbent posture without producing venous stasis (Koerserman
et al. 1961) by a disposable syringe and needle. After that they were given the test meal in the form of two boiled egg (hen) with 250 ml of sweetened milk (buffalo) or 50 gm of butter. 4 slices of bread and 250 ml of sweetened milk for those who were vegetarian. There after two post prandial blood samples were withdrawn at 1 and 3 hour after HCFD.

Plasma was separated from each samples and the following test were performed in the laboratory.

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

Estimation was done by one step method utilising the kit provided by "Ranbaxy" diagnostics.

**Procedure**

Three test tubes are taken and labelled as test (T), Standard (S) and blank (B) and then following steps are taken.

<table>
<thead>
<tr>
<th>Test</th>
<th>Standard</th>
<th>Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reagent</td>
<td>4 ml</td>
<td>4 ml</td>
</tr>
<tr>
<td>Serum</td>
<td>20 ul</td>
<td>-</td>
</tr>
<tr>
<td>Cholesterol standard (250mg%)</td>
<td>-</td>
<td>20 ul</td>
</tr>
<tr>
<td>Distilled water</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Mix the contents of each tube simultaneously for 10 seconds and immediately placed them to a boiling water bath for exactly 45 second followed by cooling with running tap water or cold water for 5 minutes. Dry the exterior surface of tubes and mix their contents.

Measure optical density of each solution at 560 nm (range 560-600 nm). Set blank at calorimetric zero and calculation is done as follows :

Cholesterol concentration of test sample (mg/dl) = \( \frac{O.D. \text{ of } T}{O.D. \text{ of } S} \times 250 \)

Cholesterol mg/dl or mg%/38.7 = m mol/l.

(Range of normal expected values = 150-200 mg/dl).
2. **SERUM TRIGLYCERIDES (STG)**

It was estimated by using GPO PAP method for quantitative determination (Enzymatic method) of STG.

**Procedure**

The reagents in kit are:

4 vials of reagent I (Lyophilised enzymes)

1 vial of reagent II (Phenol solution)

1 vial of triglyceride standard (300 mg%)

Reconstitute reagent I in 2.5 ml of distilled water, while reagent II and triglyceride standard are supplied ready to use.

<table>
<thead>
<tr>
<th>Test</th>
<th>Standard</th>
<th>Blank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reagent I</td>
<td>0.5 ml</td>
<td>0.5 ml</td>
</tr>
<tr>
<td>Reagent II</td>
<td>0.5 ml</td>
<td>0.5 ml</td>
</tr>
</tbody>
</table>

Mix well and add -

Serum        20.0 ul  -  -

Triglyceride standard - 20.0 ul  -

(300 mg/dl)

Distilled water - - 20.0 ul

Mix and incubate in waterbath at 37°C for 10 minutes

add distilled water 2.0 ml 2.0 ml 2.0 ml

Take reading by measuring optical density of each solution at 500 nm (500-530). Set zero with blank at calorimeter. Calculation is done as follows:

\[
\text{STG (mg/dl)} = \frac{\text{O.D. of T}}{\text{O.D. of S}} \times 300
\]

For conversion m mol/l = mg/dl x 0.0114.

Normal expected value = 30-150 mg/dl

3. **HIGH DENSITY LIPOPROTEIN (HDL)**

HDL was estimated by using commercial kits of Ranbaxy diagnostics.
4. Low density lipoproteins and very low density lipoproteins (LDL and VLDL).

VLDL and LDL were calculated by the following formula given by Friedwald et al (1972) and Fredrickson DS (1972) respectively.

\[
\text{VLDL (mg/dl)} = \frac{\text{STG}}{5} \quad \text{(this formulas is valid if STG value is} \ 600 \ \text{mg/dl)}
\]

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

The chart where prepared for each group Arbitrarily we have decided the following criterias.

**TYPE-1 RESPONSE:** \(\sim 5\%\) fall of LDL at 1 hour from the basal value.

**TYPE-2 RESPONSE:** \(\sim 5\%\) rise of LDL at 1st hour from the basal value.

**INDETERMINATE RESPONSE:** Where the rise or fall was inconclusive.

**ABBREVIATIONS:**

- HCFD = High Cholesterol fat diet
- LDL = Low density lipoproteins
- STC = Serum total cholesterol
- HDL = High density lipoproteins
- STG = Serum triglyceride
- VLDL = Very low density lipoproteins
- VE.G. = Vegetarian
- NV = Non - Vegetarian
- NS = Non Smoker
- HF.C = High fat consumer
- LFC = Low fat consumer.
- IHD = Ischemic Heart Disease
- SHT = Systemic Hypertention
- JNC-V = The fifth report of joint national committee on detection, evaluation and treatment of high blood pressure.
Charts were made for individual subjects and the pattern of change of lipid lipoprotein profile was noted.

**TABLE - 1**

<table>
<thead>
<tr>
<th>HCFD</th>
<th>Cholesterol (mg%)</th>
<th>Fat (gm%)</th>
<th>Saturated fat (gm%)</th>
<th>Poly Unsaturated</th>
<th>Mono Unst. fat</th>
<th>P/S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Egg</td>
<td>250</td>
<td>6.0</td>
<td>2.2</td>
<td>0.85</td>
<td>3.00</td>
<td>0.4</td>
</tr>
<tr>
<td>Butter</td>
<td>70</td>
<td>21.5</td>
<td>12.9</td>
<td>0.64</td>
<td>7.95</td>
<td>0.05</td>
</tr>
<tr>
<td>250 ml of milk</td>
<td>27</td>
<td>22</td>
<td>13.2</td>
<td>0.66</td>
<td>8.13</td>
<td>0.05</td>
</tr>
<tr>
<td>Slices (4)</td>
<td>-</td>
<td>1.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**NOTE** - Fat, cholesterol and fatty acids contents were calculated on the basis of values given by swaminathan MS: Essentials of food Nutrients 1974.

**TABLE - 2**

Classification of Blood pressure (AGE > 18) by JNC-V.

<table>
<thead>
<tr>
<th>Category</th>
<th>Systolic, mm Hg</th>
<th>Diastolic, mm Hg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt; 130</td>
<td>&lt; 85</td>
</tr>
<tr>
<td>High normal</td>
<td>130 - 139</td>
<td>85 - 89</td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage - 1</td>
<td>140 - 159</td>
<td>90 - 99</td>
</tr>
<tr>
<td>Stage - 2</td>
<td>160 - 179</td>
<td>100-109</td>
</tr>
<tr>
<td>Stage - 3</td>
<td>180 - 209</td>
<td>110 - 119</td>
</tr>
<tr>
<td>Stage - 4</td>
<td>&gt; 210</td>
<td>&gt; 120</td>
</tr>
</tbody>
</table>