MATERIAL AND METHODS
The case materials for the present study consisted of 22 subjects. It included both male and female. There were 8 diabetics of juvenile onset diabetes mellitus (type-1) and 14 patients were of maturity onset of diabetes (type-2).

Two types of protocols were followed:
A. Nine cases of type-2 and 5 cases of type-1 diabetes mellitus were given prolonged feeding for 7 days.
B. Five cases of type-2 and 3 cases of type-1 diabetes were given single dose feeding.

Six subjects left the ward in between the study period. Two cases after first sample and 4 cases after second sample left the ward. Such subjects have not been included in the study.

Only two cases, No.8 in type-2 diabetes and No. 5 in type-1 diabetes were female in prolonged feeding whereas in single dose feeding case No. 1 and 3 were females.

The volunteers selected for the study were the patients admitted in the medicine ward for the control of diabetes.

All the subjects were having diabetes of less than 10 years duration. The weight of the patients was almost constant during the period of study.

Informed consent was taken from each of the patient.
Detailed history taking thorough clinical examination and relevant investigations like blood TLC, DLC, Hb, ESR, blood sugar (F and PP, if needed), blood urea, urine albumin, sugar, and microscopic examination, E.C.G., X-ray chest and fundus examination were done.

Case No. 3, Hari Ram (type-2), case No. 5 of type-1, Rajkumari was also having koch's lung. Case No. 6 of type-1 was also having CVA in the form of hemiplegia.

DESIGN OF THE TEST

All the subjects were asked to have their dinner at 7 PM on the previous night and not to take anything after this. Next morning a 14 hours fasting samples were taken in recumbent posture without producing venous stasis (Koerselmer et al, 1961). By the same prick blood was also taken out for the estimation of blood sugar and blood urea, TLC, DLC, Hb, ESR.

Serum was separated from the blood within 4 hour by centrifuging the sample and the following tests were done.

1. Serum total cholesterol (STC) : By Henley (1957) method.
2. Serum triglyceride (STG) : Kit method (Acetyl acetamino method.
3. Serum High Density lipoprotein (HDL) : This test was conducted by the kit system provided by the Ethnor.
4. Serum VLDL and LDL estimation : Previously ultra-centrifugation was necessary to obtained the isolated LDL fraction upon which to perform the assay. More
recently establishment and validation of formula
given by Friedwald et al (1972) has lead to the use
of calculated VLDL and LDL. It is based on the
formula:

\[
VLDL = \frac{\text{Serum triglyceride}}{5}, (\text{It is valid till} \ STG \\
\text{values are less than 400 mg%}).
\]

\[
LDL = STC - (STG/5 + HDL)
\]

By above mentioned formula we can calculate
the cholesterol fractions of LDL which is almost equal
to ultracentrifuge method.

3. **PROTOCOL - 1**

Nine cases of type-2 and 5 cases of type-1
diabetes were asked to take high cholesterol breakfast
in form of 2 boiled eggs and 250 ml sweetened milk for
7 consecutive days (P/S ratio was 0.45). These cases
were allowed to take their other meals as usual and
there were no restriction on their physical activities.

Table : Fat, cholesterol and fatty acid contents of
test meal.

<table>
<thead>
<tr>
<th>Cholesterol (mg%)</th>
<th>Fat (gm%)</th>
<th>Saturated fat (gm%)</th>
<th>Polyunsaturated fat (gm%)</th>
<th>Monounsaturated fat (gm%)</th>
<th>P/S Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 eggs boiled (Hen, whole weight Approx. 110 gm without outer shell)</td>
<td>500</td>
<td>12</td>
<td>4.3</td>
<td>1.70</td>
<td>6.00</td>
</tr>
<tr>
<td>Milk (250 ml) (buffalo sweet)</td>
<td>27</td>
<td>20</td>
<td>13.2</td>
<td>0.66</td>
<td>6.13</td>
</tr>
<tr>
<td>Slices (4)</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>527</strong></td>
<td><strong>33</strong></td>
<td><strong>17.5</strong></td>
<td><strong>2.36</strong></td>
<td><strong>12.13</strong></td>
</tr>
</tbody>
</table>
(ii) After 7 days of continuous feeding blood samples were taken out for various lipoprotein fractions estimation and at the same time blood sugar was also estimated.

(iii) Now high cholesterol fat breakfast was withdrawn and the subjects were allowed to take their usual diet and after 7 days of this withdrawal blood sample was again taken out and estimation of various lipoprotein fractions were done. At the same time blood sugar estimation was also done.

B. PROTOCOL-2

Fasting blood samples were drawn from another 5 cases of type-2 and 3 cases of type-1 diabetes mellitus for the estimation of various lipoprotein fractions and blood sugar.

Now 3 boiled eggs and 250 ml of sweetened milk was given and the blood was taken after 1 hour and 3 hours (i.e. 2 hour after the second sample) for the estimation of various lipoprotein fractions.

During the study period the patients were given sufficient amount of drugs in the form of injection insulin (Plain or Lente) and oral hypoglycemic agents to keep the blood sugar below 140 mg/dl (Fasting).

As it was not practicable to examine blood sugar every day, so it was monitored by urine sugar examination.