MATERIAL & METHODS
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The present study was carried out in the Department of Medicine and department of obstetrics and gynaecology, MLB, Medical college Jhansi, over a period of one year starting from March 97 to March 98.

SELECTION OF CASES:

The study comprised of patients attending outdoor clinic of the department of obstetrics and Gynaecology for Antenatal examination, Antenatal wards, Eclampsia room and from labour room directly. The pts studied were broadly divided into following groups:

Group A - Pre eclamptic toxaemia group

Group B - Eclampsia group

Group C - Pts with Intra uterine growth retardation (IUGR Group)

PRE - ECLAMPTIC PATIENTS

Were taken to be those who developed hypertension after 20th week of gestation with the following associated conditions:

a) Proteinuria and or
b) Oedema or
c) Both a & b

HYPERTENSION:

An absolute rise in B.P. of at least 140 / 90 mm Hg, if the previous B.P. is not known or a rise in systolic pressure of at least 30 mm Hg or a rise in diastolic pressure of at least 15 mm Hg over the previously known B.P. is being considered as criteria for Toxaemic hypertension. The B.P. cited must manifest on at least two occasions 6 hrs. or more apart.

PROTEINURIA:

It is defined as more than 0.3 gm/lit in 24 hrs. collection or greater than 1 gm/lit in at least two random urine specimens collected 6 hrs or more apart.
OEDEMA -

Demonstration of pitting Oedema over the ankles after 12 hrs bed rest or rapid gain in weight more than 5 pounds a month in later month

Eclamptic pts. were taken to be those who developed convulsions and/or coma, not caused by any coincidental neurologic disease such as epilepsy and fulfilled all the conditions set fourth for pre-eclamptic patients as taken above.

PATIENTS WITH INTRAUTERINE GROWTH RETARDATION :-

(IUGR Group) ⇒ This group included pregnant woman who had on clinical evaluation the fundal height of uterus being less by at least four weeks from the expected period of Gestation (on the basis of LMP) and later confirmed by ultra sonography.

Total no. of cases studied were 50, 13 cases did not return at different stages of follow-up so 13 cases were excluded from the study, so total number of cases were 37, out of which 10 cases were of pre-eclampsia, 17 cases were of eclampsia and 10 cases were of (I.U.G.R.).

CLINICAL EXAMINATION :-

A complete clinical history of the above cases regarding age, parity, socio-economic status, literacy level, history of present pregnancy, past history, obstetrical history, menstrual history, family history, dietary history was taken as described in format. It was ensured that pt did not suffer from any other disease which caused increased cholestrol level such as coronary heart disease, renal disease, liver disease and diabetes mellitus. Complete general and systemic examination was done with special emphasis on - general built, pallor, height and weight, blood pressure and to rule out other disease which can cause altered lipiod profile. The pts. were examined and investigated in detail to detect Toxaemia of pregnancy. Most of the pts. in eclampsia group were in the last trimester of pregnancy nearing term. Fundal height was assessed and the period of Gestation was determined and it was ascertained if this corresponds to period of amenorrhoea as told by the pt. Per vaginal examination was done specially in pts. having labour pains to ascertain whether she was in labour or not, so that blood sample could be taken at appropriate time. Patients who were diagnosed as having pre eclampsia or I.U.G.R. in II\textsuperscript{nd} trimester were called again for regular follow up in the subsequent trimester of pregnancy to ensure best possible outcome of those pregnancies.
Investigations:

Following investigations were performed.

I. Routine: Haemoglobin, TLC, DLC, ESR, GB.P.
   - Blood group
   - Blood sugar
   - Blood urea

Blood urea, S. Creatinine, S. uric acid, liver function tests were specially done in cases of pre eclampsia and eclampsia.

Urine: (albumin) Protein (quantitative by Esbach method)
   - Sugar
   - Microscopic

II. Lipoprotein profile:
   - Serum total cholestrol
   - Low density lipoprotein
   - Very low density lipoprotein
   - High density lipoprotein
   - Serum triglyceride.

III. For I.U.G.R. Group specially
   - V D R L
   - T O R C H infection
   - Ultra sonography

Period of collection of blood samples:

1. Antenatal period
   a) One sample from 13th to 28th week (In pre eclampsia IUGR Group)
   b) One sample from 28th week to 40th week.

2. During labour

3. Within 24 hrs. of parturition

4. After one week of delivery

5. At 30th day after delivery.
METHOD OF COLLECTION OF BLOOD SAMPLES :-

- 5 ml of blood was withdrawn from the patients having fasted for 12-14 hrs. (wherever it was possible) without any venous stasis in recumbent posture with full aseptic precaution.
- After withdrawing the sample, it was allowed to settle, facilitating the serum to separate, then centrifuged and serum was preserved with standard precautions.

ESTIMATION OF LIPID FACTORS :-

Various lipid factors - Serum Total Cholestrol (STC), Serum triglyceride (STG), High density lipoprotein (HDL) were estimated with standard diagnostic kits while low density lipoprotein (LDL) and very low density lipoprotein (VLDL) were derived from values of above mentioned lipids by formulae.

1) Serum Total Cholestrol :- STC was estimated by Wyenbenga and Pileggi (1970) method utilising commercial kit supplied by ETHNOR. The basic principle is that Chalerlerel reacts with test solution of ferric Perchlorate, ethyl acetate and sulphuric acid and gives a lavender coloured complex which is measured calorimetrically.

2) Serum Triglyceride (STG) :- It was estimated by acetyl acetone method. Principle behind is that Triglycerides are determined by measuring glyceral after its liberation from fatty acid by saponification. Glycerol is oxidised by sodium meta periodate to formaldehyde which is directly proportional to the amount of triglycerides.

3) High density lipoprotein :- HDL was estimated by commercial kits supplied by ETHNOR. Basic principle is that the HDL cholestrol fraction is separated by using a precipitating reagent. The precipitate contains chylomicrons, VLDL, LDL which are removed by centrifugation. Then the supernatant contains HDL cholestrol which is estimated by HDL-C color reagent which gives purple colored complex which is measured calorimetrically at 560 nm (560 - 600 nm). The intensity of color developed is proportional to the concentration of HDL-C in the specimen under test.

4) Very low density lipoprotein :- It was calculated by formula given by Friedwald et al (1972). This formula is valid upto STG values less than 400 mg %.

5) Low density lipoprotein :- It was calculated by formula given by Fredrickson D.A. (1972)

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

or

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