MATERIAL AND METHODS
The present study was carried out in Department of Obstetrics and Gynaecology, M.L.B. Medical College, Jhansi. The patients were selected from the gynae OPD.

Total 50 post menopausal females with amenorrhoea more than 6 months, or panhysterectomy at least one month back with one or other climacteric symptoms, were selected for study.

Selection of Patient :-

1. **Source**: Patients are selected from - OPD
   - Gynaec ward
   - Natural menopause - Age above 40 yrs.
   - Artificial menopause - Hysterectomy with or without oopherectomy

2. **Criteria**
   a. **Presenting complain**
      - Hot flushes
      - Night Sweating
      - Insomnia
      - Dry Vagina
      - Dyspareunia
      - Palpitation
• Burning Micturition
• Vaginal discharge
• Frequency and Urgency of urine
• Jotter syndrome
• Oligomenorrhoea
• Bone pains
• Spontaneous fracture
• Dry Skin
• Dry hair
• Dry mouth.

b. History of patient

Name, Age, parity, caste, Socio-economic Status, place of residence, occupation

• Age of menopause
• Menstrual History
• Obstetrical History
• Personal History
  ◆ Smoking
  ◆ Alcohol
  ◆ H/O past surgery
  ◆ Race
• Past History
  ◆ Tuberculosis
  ◆ Hypertension
  ◆ Ischemic Heart disease
Diabetes Mellitus
Malignancy

Family History
Menopause
Cardiovascular disease
Malignancy
Diabetes mellitus

Drug History

b. Clinical Examination

General Examination:
General condition, weight, Blood pressure, pulse rate, Respiratory rate, Body temperature, pallor, cyanosis, Jaundice edema lymphadenopathy.

Chest Examination

Cardiovascular system

Any evidence of
Coronary artery disease
Hypertension
thromboembolic phenomenon.

Central Nervous System

Irritability.
Loss of memory.
Any psychological symptom.
Abdomen:

- Any lump
- Scar mark
- Hepatosplenomegaly

Breast Examination for

- Lump
- Discharge
- Tenderness

Perspeculum and pervaginal Examination

- Condition of vaginal and vaginal secretion.
- Any pathology of cervix
- Size and position of uterus and adnexa.

C. Investigations

Hemogram

- Hb%, TLC, DLC, ESR

  R

- Urine

  M

- Blood sugar
- Electrocardiogram

Lipid Profile

- Total serum cholesterol
- Serum triglyceride
- High Density Lipoprotein
♦ Low Density Lipoprotein.

**Liver function test**

♦ Serum bilirubin
♦ SGOT, SGPT

**Method of Collection of Blood Control**

5 ml of blood was withdrawn from antecubital vein of the female in recumbent posture with all aseptic precautions,

- After 12-14 hour of fasting.
- After 10 minutes of supine rest.
- Without venous stasis.

After withdrawal blood was allowed to settle down for half an hour and then centrifuged and serum was preserved with standard precautions.

**Period of Collection of Blood Sample**

1. Basal Sample (before HRT).
2. After 2 months of HRT.
3. After 6 months of HRT.

**Estimation of Lipid Factors**

Various lipid factors, serum total cholesterol (STC), serum triglyceride (STG), high density lipoprotein (HDL) were estimated by diagnostic kits while low density lipoprotein (LDL) and very low density lipoprotein (VLDL) and HDL/LDL
ratio were derived from values of above mentioned lipid by standard formulae.

1. **Method of Estimation of Various Lipid Factors** -
   Serum total cholesterol (STC) was estimated by commercial kit supplied by Ethnor. The basic principle is that cholesterol reacts with kits solution of ferric perchlorate, ethyl acetate and sulphuric acid and gives levender coloured complex which is measured colorimetrically.

2. **Estimation of Serum Triglyceride (STG)** -
   Serum triglyceride was estimated by acetyle acetone method. Principle behind this is that triglycerides are determined by measuring glycerol after its liberation from fatty acids by saponification glycerol is oxidised by sodium metaperiodate to formaldehyde which is directly proportional to the amount of triglycerides.

3. **Estimation of High Density Lipoproteins (HDL)** -
   HDL were estimated by utilising commercial kit supplied by Ethnor. Basic principle is that the HDL cholesterol fraction is separated by using a precipitating reagent. The precipitants contains chylomicrons, VLDL, LDL, which are removed by centrifugation. The supernatants contain HDL cholesterol which is estimated by HDL-C colour reagent which gives purple coloured complex intensity of colour developed is
proportional to the concentration of HDL cholesterol in the specimen under test.

4. **Estimation of very Low Density Lipoprotein (VLDL) -**

   VLDL was estimated by the formula given by Friedwald et al (1972). This formula is valid upto STG values to less than 400 mg%.
   
   \[ \text{VLDL (Mg/dl)} = \frac{\text{STG}}{5}. \]

5. **Estimation of Low Density Lipoprotein (LDL) -**

   LDL was estimated by using Fredrickson DA (1972) formula:
   
   \[ \text{LDL (mg/dl)} = \text{STC} + (\frac{\text{STG}}{5} + \text{HDL}) \]
   \[ = \text{STC} - (\text{VLDL} + \text{HDL}) \]

   Estimation of ratio LDL/HDL was done by values of LDL and HDL.

**Vaginal Cytology** - For exfoliative cytology :- Equipments Cusco's speculum, cotton swab, Ayre's spatula, container with spirit & ether (1:1) These would be done before the commencement of therapy. Investigation repeated after 2 months and 6 months and clinical examination repeated monthly.

**Exclusion of Patients**:

Following patients were excluded from study group such as
Patients with undiagnosed vaginal bleeding, genital neoplasm, carcinoma breast or history of carcinoma breast in family.

Patients who had any major complication in post operative period.

Patient with cardiovascular disease, hypertension, diabetes mellitus, H/o jaundice, and thromboembolic phenomenon were not included in this study.

**Selection of patients:**

The post menopausal patients were selected from the patient attending the out patients department of obstetrics and Gynaecology of M.L.B. Medical College, Jhansi.

A separate record of such patients were kept of register, maintained for this very purpose only. This procedure were adopted till the number of the postmenopausal patients attained the number fifty. Date wise serial number was attained to the cases. These fifty patients were divided into five groups. As such each group were comprised of ten post menopausal cases amongst these five groups one will be treated as control group. While remaining four groups will receive the drugs.


The selection of cases for the various drugs were made on the basis of systemic random sampling. Since there are five
groups and total number of the patients is fifty, hence 50/5 = 10. Now from random number table, any random number ≤10, Since there are five groups, were chosen, and then every next fifth patients were given drug number 1, and then starting from next number to chosen random number were given drug 2, and so on for 3rd, 4th and control group, till the list of the patients gets exhausted.

**Mode of Administration of drugs:**

**Oral**

a. Tab premarin 0-625 mg/day given in cyclical manner (3 weeks on with one week off)

b. Tab evalon 1 mg/day given in cyclic manner. (3 week on with one week off).

c. Tab ovral-L levonorgestrel 0.15 mg + ethinyl oestradiol 0.03 mg. One tab/day given in cyclic manner. (3 weeks on with one week off).

d. Transdermal Estrogen
   - E2 gel (17 beta strediol 0.06% w/w).
   - 2.5 gm gel containing 1.5 mg. of estrogen apply twice a week at forarm, arm and shoulder.
   - Madoxxy progesteral 10 mg/dy. given in last 10 days (each cycle inpatients having intact uterus).

e. Control group: Oral calcium tablet given 1000 mg/day.
Clinical examination was done monthly for 6 months and routine investigation after 2 months and 6 months.

**Enquiry would be made upon :-**

a. Control of symptoms.

b. Withdrawal bleeding.
   In non hysterectomized patient - whether withdrawal bleeding has occurred or not.

c. Health education advice.
   - Regular self breast examination.
   - Diet
   - Exercise
   - Stress management
   - Reduction in tabacco and alcohal consumption.

d. Control or weight gain

e. Blood pressure.
   Breast examination

f. **Investigation if indicated**
   - Pelvic ultrasound
   - Cervical biopsy
   - Serum cholesterol
   - Endomateral biopsy
   - Mamography.