MATERIAL AND METHODS
Selection of controls & patients –

Source of data:

Study will be conducted in the Department of Biochemistry with collaboration of Dept. of General Medicine and Pathology at the Central Laboratory of Rama medical college & research centre, Kanpur.

Sample size:......

Sample size will be calculated using this formula.

\[ n = \frac{4Pq}{(L^2)} \]

P= Prevalence in %

q = 1-P

L = Allowable error (10%)

A total of 400 samples are to be analyzed.

Patients’ selection:

In the present study, 200 patients aged 25 to 65 years who are known hypertensive and confirmed by recording of hypertension >130/90mmHg or reported with the use of antihypertensive medications will be recruited from the Medicine OPD & IPD of Rama Medical College Kanpur. 200 normal healthy subjects, age and sex matched with the hypertensive patients will be selected as controls.
Inclusion criteria:

Recently diagnosed (below 3 months) case of hypertension without any cause- Essential hypertension.

Exclusion criteria

i) Hypertension > 1 year of duration

ii) Secondary hypertension

iii) Diabetes mellitus, congestive heart failure, history of any atherosclerotic disease, urinary tract infection, any intercurrent illness, strenuous exercise and menstruation to rule out any proteinuria due to other causes.

Male/Female ratio of subjects: Equal

Age range of subjects:

1) < 30 years.

2) 31 to 40 years.

3) 41 to 50 years.

4) 51 to 60 years.

5) > 60 years.

Method of examination:

For biochemical analysis 3 ml venous blood will be collected under aseptic condition in a plain vacutainer from each patient and healthy subjects, who
were fasting overnight (12-14 hr)

For haematological examination 3 ml venous blood will be collected in EDTA vaccutainers from each patients and healthy subjects. The sample will be immediately dispatched to the biochemistry lab and pathology lab for the examination.

- The following biochemical investigations will be done; by the ERBA Auto analyzer

1) Vitamin D by Chemiluminesenceassay (kit by Abbott architect company) \(^{[47]}\).

2) Blood glucose by Glucose by Glucose Oxidase-Peroxidase method \(^{[48]}\).

3) Serum total cholesterol by CHOD-PAP Method \(^{[49]}\).

4) Triglycerides by Enzymatic method \(^{[50]}\).

5) HDL by precipitation method \(^{[51]}\).

6) LDL by LDL-C = total cholesterol – (HDL-C+VLDL-C).

7) VLDL by triglycerides/5.

8) Uric acid by uricase method \(^{[40]}\).

9) Creatinine by jaffe method \(^{[41]}\).
The following hematological investigations will be done by **ERBA Xs- 800(5 parts) fully automatic analyzer**.

10) Haemoglobin by ERBA complete blood cell counter.

11) RBC count by ERBA complete blood cell counter.

12) Hematocrit by ERBA complete blood cell counter.

13) WBC count by ERBA complete blood cell counter.

14) MCV by ERBA complete blood cell counter.

15) MCH by ERBA complete blood cell counter.

16) MCHC by ERBA complete blood cell counter.