MATERIAL AND METHODS

Placentas of full term pregnancy will be collected from labour room of Rama Hospital, Rama Medical College Kanpur, GSVM Medical College and Hospital Kanpur and UPRIMS & R Saifai, Etawah of all reproductive age.

Placentas from GDM and PIH women will be study for gross, histological changes and histochemistry changes in the placenta.

Angiotensinogen polymorphism and adiponectin will be evaluated in PIH and Gestational Diabetes Mellitus respectively.

Sample Size Calculation and Statistical Analysis

Sample size for the study has been calculated in order to control type-1 and type-2 error.

Assuming a minimum power 80% and 95% significance level the sample size has been calculated using the formula

\[
n = \frac{2(p)(1-p)(z_\beta^2 + z_{\alpha/2}^2)}{(p_1 - p_2)^2}
\]

Where \( p \) indicate the incidence of the clinical condition eg Hypertension and Diabetes.

Following the literature the incidence of hypertension between 7-15% and Gestational Diabetes mellitus incidence has been assumed to be 1-14%.

The calculated sample size for PIH is 141 which is approximated to 150 and for Gestational Diabetes mellitus is 128, which is approximated to 150, whereas control group consist of 150.
Logistic regression analysis and other appropriate statistical tools will be used to analysis the data and software like SPSS and MINI TAB will be used for the analysis.

**Inclusion Criteria**

- Gestational hypertension Without proteinuria or pathological oedema
- Pre-eclampsia-Hypertensio and proteinuria with or without pathological oedema.
- Eclampsia – Pre-eclampsia complicated with convulsions and / or coma.
- Pre-eclampsia or eclampsia superimposed on chronic hypertension
- Gestational Diabetes Mellitus (GDM )

**Exclusion Criteria**

- Chronic hypertension
- Essential hypertension
- Chronic renal disease (reno vascular)
- Coarctation of aorta
- Pheochromocytoma
- Thyrotoxicosis
- Connective tissue disease-systemic lupus erythematos
- Pre-existing Diabetes mellitus(IDDM-Type 1)
- Pre-existing Diabetes mellitus(NIDDM-Type 2)
Gross and Microscopic study of placenta will be perform by

- Weight of placenta
- Neonate weight in the labour room
- Morphology of placenta
- The site of attachment of umbilical cord
- Maternal and Foetal Cotyledons

For light microscopy, two cm. wedge of tissue will be taken from the centre of each placenta and fixed in 10% formalin for one week. The tissue will dehydrate and follow by embedding in paraffin wax and 5 micron serial sections will generate with the help of rotatory microtome. The tissue sections will stained with hematoxylene and eosin.

Histological appearances of placentas will be assess for Calcification, Infarction and Atherosclerosis.

Blood sample (5ml) at the time of delivery will be taken for the study of Angiotensinogen polymorphism in Preeclampsia and Adiponectin level in Gestational Diabetes Mellitus under standard protocol.

DNA isolation will be done using DNA isolation kit using standard protocol then Polymerase chain reaction (PCR) based restriction fragment length polymorphism analysis using primer for the study of Angiotensinogen polymorphism in Preeclampsia.

Serum adiponectin concentration will be measure using ELISA kit under standard protocol in Gestational Diabetes Mellitus.