

# ABSTRACT

## INTRODUCTION

Pregnancies are complicated by Hypertensive disorders of about 5-10% and along with hemorrhage, sepsis and fetal growth restriction constitutes a triad contributing to maternal morbidity and mortality<sup>1,2</sup>. Hypertensive disorders in pregnancy vary from mildly elevated blood pressure to severe hypertension with multi organ dysfunction. Of these disorders the preeclampsia syndrome, either alone or superimposed on chronic hypertension and its associated maternal mortality is the most dangerous and it accounts for 16% and is preventable<sup>3</sup>.

The incidence of preeclampsia varies between 8-10% of all pregnancies. In nulliparous woman, the incidence of preeclampsia ranges between 2% and 7% (who conceive with Assisted Reproductive technology). This is responsible for 29,000 maternal deaths per year world wide.<sup>4,5</sup>

The use of Doppler interrogation of this vessel in the first trimester has gained momentum in recent years. According to the National Institute for Clinical Excellence guidelines on routine prenatal care recommending that at the first prenatal visit a woman's level of risk for adverse pregnancy outcome should be evaluated so that a plan for her schedule of prenatal visits can be formulated. There is no proven effective method for the prevention of PE.

## OBJECTIVE:

Correlation of uterine artery Doppler in the first trimester with adverse pregnancy outcome (IUGR, Oligohydramnios, G. HTN, Preeclampsia and Eclampsia).

## METHODOLOGY:

This is a prospective screening study for women attending antenatal clinic during 11-13 weeks + 6 days of gestation in PSG IMSR, Coimbatore during a period of 1 year. In this visit, women will have an ultrasonogram for Nuchal Translucency thickness, along with that. Uterine artery Doppler Pulsatile Index (PI) will be measured by Transabdominal or Transvaginal colour Doppler. Based on the uterine Doppler value, my study population (n – 150) is divided equally (each 75) into control and case group. In the case group uterine artery Doppler value, both single uterine artery Doppler and average uterine Doppler  $\geq 2.3$  is considered as abnormal. Both the

control and case group were followed up throughout the gestation for the development of adverse pregnancy outcome such as PE, gestational hypertension, eclampsia, IUGR and oligohydramnios.

## **RESULTS:**

Out of 150 women recruited in the study, in the case group, out of 75, 56% of them had their single uterine artery Doppler abnormality with adverse pregnancy outcome of 38%. Remaining 44% had their average uterine artery Doppler PI abnormality, out of which 69.6% of them had adverse pregnancy outcome .The maximum adverse outcome of my study population is with IUGR. The study showed that first trimester uterine artery Doppler with single and average uterine artery PI >95<sup>th</sup> centile (2.3) has better screening value in my population.

## **CONCLUSION:**

To conclude from the present study, first trimester Doppler ultrasound is the best non-invasive investigation to assess changes in uteroplacental hemodynamics which helps in early prediction of development of hypertensive disorders in pregnancy along with maternal characteristics which helps in early prophylactic intervention.

Further research is required to evaluate the generalizability of multiparametric models in different resource settings, in addition to assessing the impact of screening on clinical outcomes.

**Keywords: Uteroplacental, Nulliparous, Preeclampsia, Oligohydramnios, Eclampsia**