

How useful is uterine artery Doppler imaging in predicting hypertensive disorders in pregnancy and poor neonatal outcome?

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PURPOSE: (1) To study uterine artery Doppler waveform and to compare sensitivity, specificity and predictive values of diastolic notch, systolic to diastolic ratio (S/D ratio), resistive index (RI) and pulsatility index (PI) in prediction of pregnancy induced hypertension (PIH).

(2) To study the effect of placental location in prediction of PIH.

MATERIALS AND METHODS: 150 nullipara and 38 multipara with history of PIH in previous pregnancy attending antenatal clinic at JNMCH were prospectively studied. After their routine clinical examination and tests patients were subjected to color Doppler study at 16–20 wks and again at 28–30 wks. Patients were followed up till delivery to detect development of PIH and other adverse pregnancy outcomes. Presence of diastolic notch after 16 wks and S/D ratio > 2.6 , RI > 0.56 and PI > 1.45 at 28–30 wks were taken as abnormal.

RESULTS: Sensitivity, specificity and predictive values of diastolic notch and other color Doppler indices in predicting PIH were calculated. All these parameters were shown to be statistically significant (P value < 0.05) in predicting PIH. Sensitivity, specificity, positive and negative predictive values of diastolic notch (75%, 91.12%, 81.35% and 87.59% respectively) were shown to be higher than those of S/D ratio, RI and PI in predicting PIH. Out of S/D ratio, RI and PI, S/D ratio had highest specificity and predictive values. Relationship of placental location with the development of PIH was also found to be statistically significant with lateral location being associated with increased incidence of PIH, presence of diastolic notch and abnormal color Doppler indices.

CONCLUSION: Color Doppler Sonography performed to study uterine artery flow velocity waveform is highly accurate in predicting PIH early in pregnancy.