

Value of doppler ultrasonography in predicting fetal well-being in pregnant women with preecclampsia

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Objective

Study on the value of some ultrasound explorations in predicting fetal well-beingin pregnant women with preeclampsia and to compare the effectiveness of different Doppler indices in predicting fetal well-being in pregnant women with preeclampsia.

Methods

Research objects: 153 Pregnant women diagnosed with preeclampsia and treated from03/01/2013to30/ 01/2016 atHue UniversityHospital who agreed to participate in the research. Inclusion criteria: Having minimum gestational age of 28 weeks (calculated from the first day of the last menstrual period) with one living fetus. - Having the following signs and symptoms + SBP ≥ 140 mmHgor DBP ≥ 90 mmHg + Proteinuria ≥ 0. 5 g/l on a random urine specimenor 0. 3 g/l on a 24 hour urine collection, with or without edema - Patients evaluated by ultrasonography and Doppler ultrasonography to assess UTA, UMA, and MCA at 48 hours prior to the termination of pregnancy. . Exclusion criteria: Polyhydramnios, fetal malformations, eclampsia, HELLP syndrome, congenital heart diseases, kidney diseases, hypertension, Bazedow's disease, diabetes mellitus Research methods: 1. A prospective, descriptive cross-sectional study. Sample size calculation: Since we studied the characteristics of a diagnostic tool, calculation of sample size would be based on sensitivity (Se) and specificity (Sp). Furthemore, this is a clinical study, thus, we used Sp to estimate the required sample size. Sample size was calculated using the following formula Firstly, we estimated FP + TN (false positive and true negative value) using the formula: FP + TN = In which: Nsp: Sample size required for the study, = 5%, is the normal distribution coefficient, if the significant level =0. 05, =1. 96, Psp: Power= 90% Pdis: prevelance of pregnant women diagnosed with preeclampsia in previous studies = 8%, thus1- Pdis = 0. 92. With current disease prevelance of 8%, using the above formula for calculation of sample size for Sp estimation, we had: FP + TN = = The required sample size was 150. 3, rounded as 151patients.

Results

Cut-off value of UTA RI for IUGR and fetal distress prediction at gestational age of 34-37 weeks was 0. 6. The UTA S/D ratio cut-off value of 2. 6 for fetal distress prediction at gestational age of 34-37 weeks had the sensitivity of 100% and specificity of 60%. Fetal distress prediction using UMA RI at gestational age of 34-37 weeks with cut-off value of 0. 64 had the sensitivity of 90. 9%, at gestational age above 37 weeks with cut-off value of 9. 75 had the sensitivity of 100%. Cut-off values for UMA RI for IUGR prediction at gestational age of 34-37 weeks was 0. 74 and at gestational age above 37 weeks was 0. 76.

Conclusion

The study found the cut-off values of PI, RI, S/D ratios of the UTA, UMA and MCA to predict fetal distress, IUGR in preeclampsia to help clinicians determine the most appropriate management to reduce perinatal morbidity and mortality rates. The study also compared the effectiveness of different Doppler indices in predicting fetal well-being.