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To determine best Doppler index/combination for high risk pregnancies

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PURPOSE: High risk pregnancies constitute pregnancies complicated by pregnancy induced hypertension (PIH) and/or intrauterine growth retardation (IUGR). To determine the significance of umbilical artery (UA) and ductus venosus (DV) pulsatility index (PI), resistive index (RI) and systolic/diastolic ratio (S/D ratio) and their combination in these pregnancies and to correlate their findngs with cord blood pH.
MATERIALS AND METHODS: This prospective study was carried out on 110 single high risk pregnances. UA and DV Doppler velocimetry was performed in last 1 week before delivery using Toshibo Aplio Doppler machine. After delivery, cord blood pH was analysed and pH < 7.20 was considered to represent acidemia.
RESULTS: Best parameter demonstrating sensitivity of 70.9%, specificity 77.2%, positive predictive value of 55.0%, negative predictive value 87.1% & diagnostic accuracy of 75.5% was UA-S/D ratio. By combining Doppler indices, sensitivity was increased and best Doppler parameter was UA - PI + S/D ratio.
CONCLUSION: umbilical artery Doppler velocimetry were good predictors of birth acidemia in IUGR &/or PIH pregnancies. In our country where IUGR constitute 25% of pregnancies, prediction of babies at risk by a non-invasive method can guide in appropriate timing of delivery, thereby significantly reducing perinatal mortality and morbidity.