PP-031

Ratio of middle cerebral artery / umbilical artery Doppler velocimetry and status of newborn in preeclampsia

Ana Daneva Markova[1], Marija Hadzi Lega[1], Milan Stefanovic[2], Andrijana Sterjovska[3]
1 University Clinic of Gynecology and Obstetrics, Skopje, Macedonia;
2 University Clinic of Gynecology and Obstetrics, Nis, Serbia;
3 Medical Faculty, University Goce Delcev, Stip, Macedonia

Objective: Doppler velocimetry studies of placental and fetal circulation can provide important information regarding fetal well-being providing an opportunity to improve fetal outcome. The present study was undertaken to evaluate the role of middle cerebral to umbilical artery blood velocity waveform's systolic/diastolic ratio (MCA/UA) as a predictor of perinatal outcome in post term pregnant women.
Methods: This prospective case control study included one hundred pregnant women who were stratified into two groups. Fifty pregnant women during the third trimester (control group=group A) and fifty pregnant women with Preeclampsia (case group=group B). The results of the MCA/UA ratio were evaluated with respect to the outcome of the infants and adverse perinatal outcome, defined as perinatal death, cesarean delivery for fetal distress, admission to the neonatal intensive care unit, days in the neonatal intensive care unit (NICU) or low Apgar score.
Results: Twenty nine percent (29%) had an abnormal CPR (<1.0) while seventy eight percent (78%) had a normal CPR (≥1.0). Seventy eight percent (78%) were delivered via caesarean section while twenty two percent (22%) were delivered vaginally. An APGAR score < 7 was 66 times more often in mothers with CPR<1.0 than mothers with CPR≥1.0. Low birth weight was 4.7 times more likely among mothers with CPR< 1.0 as compared to those with mothers with CPR≥1.0 (95% CI 2, 11.1; p<0.001). An APGAR score <7 was 66 times more likely among neonates delivered vaginally as compared to those born via caesarean section (95% CI 1.3, 23; p=0.02).
Conclusion: CPR is significantly predictive of adverse perinatal outcome when used to monitor mothers with hypertensive states of pregnancy than UA RI or BPPS used alone. CPR was predictive of adverse perinatal outcome (live birth, APGAR score and low birth weight). Caesarian section should be the recommended mode of delivery for hypertensive mothers. Although the sample size of our study was small, our results suggested that the MCA/UA Doppler ratio of less than 1 was a good predictive tool for neonatal outcome in post term pregnant women and could be used to identify fetuses at risk of morbidity.

Keywords: Middle cerebral artery, umbilical artery, preeclampsia.

Link: http://www.perinataljournal.com/Archive/Article/20140224091