



Use of cerebroplacental ratio in ultrasound at Royal Berkshire Hospital

Tomé M, Arora S, Bisht S

Royal Berkshire Hospital NHS Foundation Hospital, Reading, United Kingdom

Objective

The main aim of this project was to evaluate the association of third-trimester fetal Cerebroplacental Ratio (CPR), Umbilical Artery Doppler and Estimated Fetal Weight with stillbirth and perinatal morbidity and mortality. The secondary aim was to consider introducing the use of CPR as an aid in predicting poor fetal outcome at the maternal unit of Royal Berkshire Hospital (RBH), Reading UK.

Methods

The data was collected retrospectively between December 2016 and January 2017 and a total of 54 patients' records were reviewed by using the CMIS system.

Results

The gestational age of the 54 patients that were referred for an ultrasound scan (US) varied between 22+3 and 41+3 weeks. 85% of the patients that were referred to have a scan were less than 37 weeks. The commonest indications for scans were: serial growth scans/IUGR, maternal condition (PET/PIH, maternal age) and multiple pregnancy. 8 patients (15%) were identified as having a Low CPR (defined as less than 1) versus 46 patients (85%) that had Normal CPR. Of the group with Low CPR, 62% of the patients were delivered before 37 weeks; 5 patients (62%) were delivered vaginally, and 3 patients were delivered by caesarean section (1 patient by elective caesarean section and 2 patients by emergency caesarean section). All babies from both the low and normal CPR groups had APGAR scores of 7 and above at 5 minutes. 30 % (14 babies) from the Normal CPR group weight less than 2500 g in comparison to 62% (5 babies) from the Low CPR group.

Conclusion

Patients identified to have a low CPR at US were more likely to: give birth at a lower gestational age, to have a low birth weight and to deliver by an elective or emergency caesarean section suggesting that low CPR is a marker of fetal compromise. None of our babies had abnormal APGAR scores even in the Low CPR group, as intervention was made earlier based on the CPR. Therefore CPR appears to be an essential diagnostic index to detect fetus at increased risk of stillbirth and perinatal loss and it will become a routine measurement in all US performed in the RBH.