Fetal distress in labor: cerebroplacental ratio at term
Etchegaray A, Moren JM, Ciammella RM, Esteban M
Hospital Universitario Austral, Pilar, Buenos Aires, Argentina

Objective
To evaluate the value of cerebroplacental ratio (CPR) at term as a marker of antepartum placental reserve.

Methods
This was a retrospective cohort study of patients with a singleton pregnancy who had a Doppler evaluation at term within 2 weeks of delivery in a single tertiary center between November 2011 and September 2015. Out of 559 initial pregnancies, we excluded 28 patients (5%) with fetal anomalies, 23 with incomplete perinatal data (4.1%) and 12 who had an elective cesarean section (2.1%). We defined Intrapartum Caesarean section for fetal distress (ICFD) to those indicated due to presumed fetal distress (pathological CTG) or prolonged fetal bradycardia. Fetuses were divided into groups according to birthweight centile (small for gestational age, SGA and appropriate for gestational age, AGA) and CPR.

Results
The study population included 496 patients. Mean gestational age at Doppler examination was 37.8 wk +/- 0.1. There was a positive correlation between CPR and birth weight (R² = 0.071, Fisher test < 0.001). The need for ICFD was almost 5 times higher in patients with CPR below the 5th centile than in those with normal CPR (14.3% vs 2.9%, p < 0.001). While the rate of ICFD was inversely proportional to birth weight, there were no significant differences between the rate in small fetuses regardless of CPR (SGA with abnormal CPR 14% vs SGA with normal CPR 8.1%, p = 0.083) compared with eutrophic fetuses with abnormal CPR (10.2%, p = 0.096%). However, these 3 groups had a significantly higher rate of cesarean delivery than eutrophic fetuses with normal CPR (2.03%, p < 0.001).

Conclusion
Our results suggest that CPR can be a useful tool to identify fetuses at term with an increased risk of intrapartum hemodynamic compromise. The main risk factor for intrapartum fetal distress appears to be the presence of cerebral redistribution before labor rather than the fetal biometric status.