

# Is the cerebroplacental ratio a good indicator of fetal heart anomalies during labor?

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## Objective

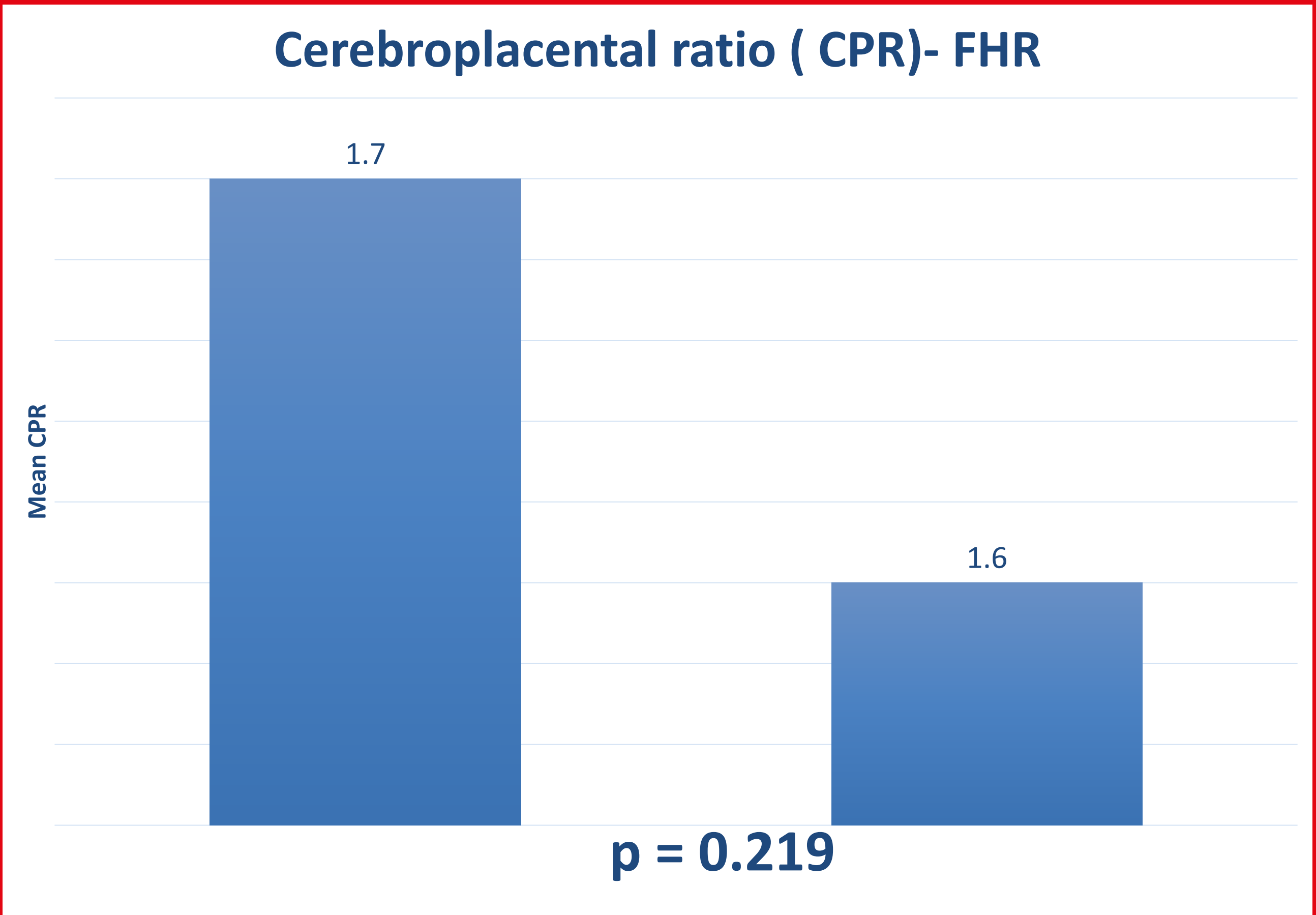
The cerebroplacental ratio (CPR), defined as the ratio between the pulsatility index of the middle cerebral artery (MCA-PI) and the pulsatility index of the umbilical artery (UA-PI), It is a key parameter in the assessment of fetal well-being. However, its ability to predict the occurrence of fetal heart rate abnormalities (FHRAs) when measured within 24 hours before delivery remains insufficiently established. We aim to determine the Doppler characteristics of MCA-PI and UA-PI and to analyze the relationship between the CPR measured in the 24 hours preceding delivery and the occurrence of fetal heart rate abnormalities.

## Methods

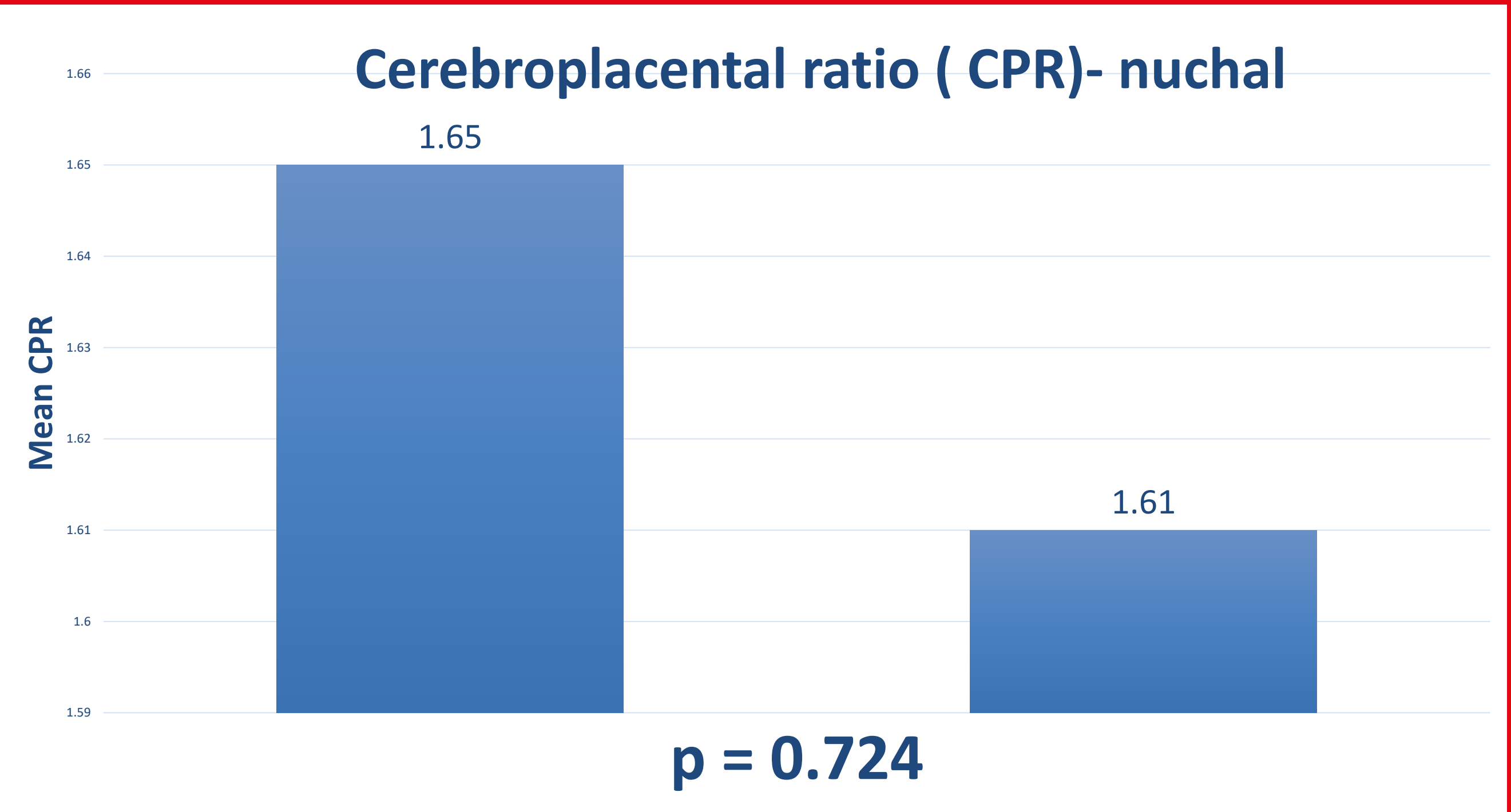
It is a prospective observational study including 40 pregnant women who underwent Doppler ultrasound examinations within 24 hours prior to delivery. Only pregnancies with normal fetal anatomy and without maternal or fetal complications were included. Obstetric characteristics and neonatal outcomes were evaluated.

## Results

A total of 40 measurements of the CPR, MCA-PI and UA-PI were collected and analyzed. The CPR measured within 24 hours before delivery did not differ significantly between patients with fetal heart rate abnormalities and those without ( $1.7 \pm 0.3$  vs.  $1.6 \pm 0.3$ ). In contrast, the MCA-PI was significantly higher in patients who experienced fetal heart rate abnormalities ( $1.7 \pm 0.2$  vs.  $1.5 \pm 0.3$ ). The UA-PI was similar between the two groups. No significant differences were observed regarding mode of delivery, presence of a nuchal cord, duration of labor, 1- and 5-minute Apgar scores, or immediate neonatal outcome.



No significant difference regarding CPR between the group with FHR abnormality (left) and the group with no FHR abnormality (right)



No significant difference regarding CPR between the group with no nuchal cord (left) and the group with a nuchal cord (right)

## Conclusion

In this low-risk term population, the CPR measured within 24 hours before delivery was not predictive of fetal heart rate abnormalities. Multicentric studies assessing cerebral Doppler and intrapartum monitoring are needed to attain solid conclusions.

