Cerebroplacental ratio assessment in low-risk population

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TO THE EDITORS: Akolekar et al[1] present a large study of a test (cerebroplacental ratio) performed in late pregnancy to see whether it predicts an abnormal outcome to that pregnancy. However, the clinicians managing the pregnancies were not blinded to the test results, and the test was already known to be of clinical utility in high-risk pregnancies[2]; these facts invalidate the study and its conclusions. It can hardly be surprising that the study concluded that the test was a poor predictor of perinatal outcome.

The authors give a single scenario of how knowledge of the test result affected the outcome of the study. However, an abnormal test result would have been acted on by the managing clinicians in many different ways in attempt to improve the outcome. Thus, intervention could have taken many different forms than just the "hypothetical" proposed at the end of the article. An alternative conclusion, just as valid, could be that knowledge of the test had a good result as it did in high-risk pregnancies[2] because the outcomes could well have been worse if the test was not done. ■

Roger A. McMaster-Fay, MB BS
Department of Obstetrics and Gynaecology
Faculty of Medicine
Central Clinical School
University of Sydney
Sydney, New South Wales, Australia
roger@rfay.com.au
ram@rfay.com.au

The author reports no conflict of interest.

REFERENCES

1. Akolekar R, Ciobanu A, Zingler E, et al. Routine assessment of cerebroplacental ratio at 35-37 weeks' gestation in the prediction of adverse perinatal outcome. Am J Obstet Gynecol 2019;221:65.e1–18.

2. Lees C, Marlow N, Arabin B, et al. Perinatal morbidity and mortality in early-onset fetal growth restriction: cohort outcomes of the trial of randomized umbilical and fetal flow in Europe (TRUFFLE). Ultrasound Obstet Gynecol 2013;42:400–8.

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REPLY

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We thank Dr McMaster-Fay for his comments on our paper.[1] We assessed the value of the cerebroplacental ratio (CPR) in the prediction of adverse perinatal events in 47,211 women with singleton pregnancies undergoing routine ultrasound examination at 35−37 weeks of gestation.[2] We found that low CPR was associated with increased risk of adverse perinatal outcome, presence of surrogate markers of perinatal hypoxia, cesarean delivery for presumed fetal compromise in labor, and birth of neonates with birthweight less than the third percentile. However, the performance of low CPR in the prediction of each adverse outcome was poor, with detection rates of 13%−26% and a false-positive rate of about 10%. Although the incidence of these adverse events was greater in small for gestational age (SGA) than non-SGA neonates, 80%−85% of them occurred in the non-SGA group.

McMaster-Fay is concerned that our findings are not valid because the clinicians managing the pregnancies were not blinded to the test results. In pregnancies with non-SGA fetuses, the CPR results were not given to either the patients or their attending clinicians. In the case of SGA fetuses, the results were given to the clinicians, and this was acknowledged as a limitation of our study because of the potential negative bias on performance of screening by CPR for adverse perinatal events in SGA fetuses. We had 196 pregnancies with SGA fetuses in which elective cesarean delivery was carried out because of abnormal Doppler findings or fetal-heart rate patterns; had this not been carried out, it is possible that some of the cases would have resulted in stillbirth, cesarean delivery for fetal compromise in labor, and birth asphyxia. However, the contribution of these 196 pregnancies to the overall findings was minimal, and the conclusion that the performance of low CPR in the prediction of adverse events is poor in both SGA and non-SGA fetuses is valid. ■

Ranjit Akolekar, MD
Medway Maritime Hospital
Gillingham

Kypros H. Nicolaides, MD
King's College Hospital
London, United Kingdom
kypros@fetalmedicine.com

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REFERENCES

1. McMaster-Fay RA. Cerebroplacental ratio assessment in low risk population. Am J Obstet Gynecol 2019;221:659.

2. Akolekar R, Ciobanu A, Zingler E, Syngelaki A, Nicolaides KH. Routine assessment of cerebroplacental ratio at 35-37 weeks' gestation in the prediction of adverse perinatal outcome. Am J Obstet Gynecol 2019;221:65.e1–18.

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