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Re: Cerebroplacental ratio in predicting adverse perinatal outcome: a meta-analysis of individual participant data. (First comment on BJOG-19-1584.R2)

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Letter to the Editor, BJOG Exchange

Re: Cerebroplacental ratio in predicting adverse perinatal outcome: a meta-analysis of individual participant data

Dear Sir:

We read with interest the study by Vollgraff Heidweiller-Schreurs et al[1] in which the authors compare the abilities of the umbilical Doppler, middle cerebral Doppler and cerebroplacental ratio (CPR) for the prediction of adverse perinatal outcome (APO). We would like to congratulate the authors for this collaborative study and also for the CPR IPD initiative. However, we disagree with their conclusions and methodology, upon which we would like to make several comments:

First and foremost, the main diagnostic performance of CPR relies on the ability to detect compromised fetuses that are unable to stand the stress of labor[2]. However, in the absence of contractions, even endangered fetuses with abnormal Doppler may be delivered with a good perinatal outcome. Second, CPR performance is strikingly dependent on the interval to labor, decreasing considerably after 15 days. If we take into account that beyond the appropriate performance range Doppler techniques with different abilities may seem to be equally accurate, the information about the interval becomes crucially important. Third, the possibility of APO depends on the kind of labor onset. As a consequence, inductions with poor Bishop score are more likely to present acidosis and APO than deliveries with spontaneous onset and good obstetrics conditions[4]. All these issues imply that in order to perform appropriate comparisons between different Doppler techniques, cases with elective cesarean sections and higher intervals to labor should be discarded. Moreover, the type of labor onset should be taken into account. However, as far as we are concerned, none of this was done. Last but not least, when preterm fetuses are studied, admission to pediatric care can be the result not only of hypoxia, but also of prematurity. Consequently, considering that in this scenario intrapartum and neonatal pH become the only accurate data to establish a clear diagnosis of acidosis, these parameters should be homogeneous, as they should be using similar pH thresholds. Unfortunately, this information was not provided.

Overlapping ROC curves may be the result of a similar performance between the studied parameters. However, considering the above-mentioned aspects, they might also be the result of biased comparisons performed out of the appropriate performance range. While the findings of this meta-analysis do not support the use of CPR out of a research protocol, we would still like to consider that further research is needed to reach such a conclusion, and that CPR so far remains a poor predictor, but the best individual predictor of APO.

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