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Correspondence

Comment on first trimester maternal serum analytes and second trimester uterine artery doppler in the prediction of preeclampsia and fetal growth restriction

Dear Editor,

We read with interest this issue of the journal where Yu N, Cui H, Chen X, Chang Y [1] determine that the biomarkers tested in the first trimester: pregnancy-associated plasma protein-A (PAPP-A) and disintegrin and β − human chorionic gonadotropin (β-hCG), metalloprotease 12 (ADAM12), placenta protein 13 (PP13) and the uterine artery Doppler (UAD) in the second trimester; are associated with preeclampsia and fetal growth restriction. Though the investigation meets its purpose, it would be more informative to include data from recent researches. Therefore, we have some suggestions that can improve the results of this article.

First, in this research the definition of preeclampsia is from a 2002's American College of Obstetricians and Gynecologists Task Force publication. It defines it as systolic and diastolic blood pressure ≥140/90 mmHg on two recordings at least 4 h apart and proteinuria (≥300 mg in 24 h or 1 + protein on dipstick urine analysis), after 20 weeks of gestation in women without previous hypertension. However, another definition from the same source, published in 2013, also includes thrombocytopenia, renal insufficiency, impaired liver function, pulmonary edema and cerebral or visual symptoms if proteinuria is absent [2]. Using an actual definition of this complication is important because it is used to select cases and controls and some cases can be omitted or missing without a complete definition.

Second, the researchers defined Fetal Growth Restriction (FGR) as birth weight below the fifth percentile for gestational age, which Yudkin described in 1987. Growth curves has been a discussed topic lately. Therefore, the European Journal of Obstetrics & Gynecology and Reproductive Biology proposed a more recent terminology. The authors define small for gestational age (SGA) as below the 10th percentile in utero estimated weight or birth weight, and FGR must be suggested with evidence of abnormal growth, confirmed with reduced fetal movement, Doppler abnormalities or oligohydramnios [3]. We would like to emphasize that definitions are important to diagnose diseases and screening purposes.

In addition, there is a lack of a multivariate analysis in the association of the model proposed by the authors, which is important because a confounding bias is possible. In a review of the medicine literature, we found many risk factors of preeclampsia, which include nulliparity, with a population attributable fraction (PAF) of 32.3% (95% confidence interval 27.4%–37.0%). Also, prepregnancy body mass index >25 (23.8%, 22%–25.6%); prior preeclampsia, with a PAF of 22.8% (95% confidence interval 19.6%–26.3%); and others described by Bartsch et al. [4]. As we can read from Chaparro et al. [5], they explored the feasibility of measuring endothelial and placental biomarkers in saliva and gingival crevicular fluid (GCF), and used a multiple logistic regression model to determine that placental growth factor (PIGF) concentrations in saliva and GCF were significantly higher in patients with preeclampsia ($p = 0.045$ and $p = 0.033$). In this multivariate analysis, they adjusted the association by tobacco use, body mass index and periodontal diagnosis; risk factors determined by the mother's profile. Therefore, to confirm the association of this combination of PI, ADAM12 and PAPP-A with the outcome of preeclampsia and restriction of fetal growth, we suggest a further study that include recent definitions and the consideration of confounding variables in the analysis.

Conflicts of interest

Authors declares no conflicts of interest.

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