

Letter to the Editor

## **Significance of Biochemical Markers in the Prediction of Preeclampsia: Reliability and clinical applicability**

### **Letter**

To the Editor,

We have thoroughly engaged with the article titled "**Significance of Biochemical Markers in the Prediction of Preeclampsia: Reliability and clinical applicability**

”[1]

We sincerely appreciate the diligent work on this crucial topic which represents a significant effort in this critical area of maternal health, which merits reader recognition. We concur with the article's primary conclusion that is to focus on the role of biochemical markers in the prediction of preeclampsia, which may help early detection and improve outcome of pregnancy. However, there are a few additional elements that could further enrich the article's conclusion.

First, According to American College of Obstetricians and Gynecologists (ACOG) Several studies have evaluated the role of biochemical markers or a combination of biochemical and biophysical markers in the prediction of preeclampsia in the first and second trimesters of pregnancy. Regardless of the parameters used, screening for preeclampsia in low-risk women is associated with very low positive predictive values ranging from 8% to 33% [2]. They additionally noted. One model that was previously developed used PIGF, in addition to uterine artery Doppler and maternal demographics, to attempt to predict preterm preeclampsia. Yet, as noted by the ACOG, the calculated positive predictive value was only 21%. The ACOG statement concluded that biomarkers—with or without other factors—could not be used to accurately predict preeclampsia remote from its development, and their use in that endeavor should remain investigational [2]. In another study, They have found significant associations between maternal serum levels of analytes evaluated early in pregnancy and subsequent adverse pregnancy outcomes in nulliparous gravidas [3]. However, the test characteristics for these analytes do not support their use as clinical biomarkers to predict adverse pregnancy outcomes, either alone or in combination with maternal clinical characteristic [3] and a new a nested case-control study conducted in which Proteomics using an aptamer-based assay that included 6481 unique human proteins was performed on stored plasma and included both test and validation sets for each model [4]. In this large case-control study of nulliparous individuals, with detailed clinical data and stored plasma samples available from the first trimester, large-scale proteomics did not identify protein models that allowed good predictive capability of HDP and preeclampsia, or even added meaningful discriminatory value to clinical and demographic factors that can be

easily obtained. In addition, the author mentioned Doppler ultrasonography a good adjuvant to biochemical markers in predicting preeclampsia but according to American College of Obstetricians and Gynecologists (ACOG) , biomarkers and ultrasonography cannot accurately predict preeclampsia and should remain investigational. [2]

The authors could have evaluated the robustness of their findings by conducting sensitivity analyses. these omission may introduce bias and restrict the generalizability of the study, affecting its overall reliability and clinical applicability.

By considering complementary methodologies and focusing on the most promising pathways, we can advance our understanding and improve clinical outcomes for pregnant women at risk of preeclampsia.

## References

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- [2] Gestational Hypertension and Preeclampsia, "ACOG Practice Bulletin, Number 222 135(6)," *Obstetrics & Gynecology* , pp. p e237-e260, June 2020.
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