

Cardiac function in first trimester in women with preeclampsia

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Objective

The aim of this study was to describe clinical, laboratory and cardiovascular (CV) risk parameters in the first trimester of pregnancy in high-risk women that may aid in predicting who eventually will develop preeclampsia (PE).

Methods

Prospective cohort study of pregnant women with high-risk of PE in the first trimester screening, nesting cases that developed PE and those that did not. High-resolution images of the maternal heart were acquired between 13 and 16 weeks of gestation, for echocardiographic parameters, including myocardial strain analysis by 2D speckle-tracking. Clinical parameters, angiogenic factors and CV laboratory biomarkers were also measured. Associations between study group and current CV evaluation parameters were evaluated.

Results

172 women at high-risk of PE, 49 developed PE and 123 who, were included. As expected, there were significant differences in parameters associated with high-risk of PE such as blood pressure (systolic BP 124 ± 13 PE vs 117 ± 10 mmHg no PE, $p=0.003$). There were no significant differences in first trimester in echocardiographic parameters, lipid profile or cardiac biomarkers; however the sFlt-1/PlGF ratio was significantly higher in the group that developed clinical PE (25 ± 17 vs 17 ± 12 no PE, $p=0.025$).

Conclusion

Development of PE in women selected as high-risk in first trimester screening may be predicted by blood pressure and the sFlt-1/PlGF ratio in the first trimester. No differences were found regarding other CV parameters.