



Poster 16. FIRST TRIMESTER ANEUPLOIDY SCREENING PROGRAM FOR PREECLAMPSIA PREDICTION IN A PORTUGUESE OBSTETRIC POPULATION

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Introduction: Preeclampsia (PE) is a prevalent clinical entity in pregnancy, which is responsible for substantial maternal-fetal morbidity and mortality. Prediction of PE could offer a window of opportunity for intervention during pregnancy, making it potentially possible to prevent adverse obstetric and neonatal outcomes. As screening for PE based only on maternal history has shown to be insufficient, measurement in early pregnancy of a variety of markers implicated in the pathophysiology of PE has been proposed to predict its development. Because any single biomarker is unlikely to be effective in prediction of the onset of a disorder as heterogeneous as PE, it is under investigation which combinations of tests, such as ultrasound and serum markers, would raise the effectiveness of history and physical-based screening. The accuracy of models for PE prediction, either maternal history-based or combined with biomarkers, is unknown in the Portuguese population.

Objective: To evaluate the performance of a first trimester aneuploidy screening program for PE prediction in a Portuguese obstetric population, when performed under routine clinical conditions.

Material and Methods: Retrospective cohort study of 5672 pregnant women who underwent routine first trimester aneuploidy screening in a Portuguese university hospital from January 2009 to June 2013. Logistic regression-based predictive models were developed for prediction of PE based on maternal characteristics, crown-rump length (CRL), nuchal translucency thickness (NT), and maternal serum levels of pregnancy-associated plasma protein-A (PAPP-A) and free beta-subunit of human chorionic gonadotropin (free β -hCG).

Results: At a false-positive rate of 5/10%, the detection rate for early-onset (EO-PE) and late-onset (LO-PE) PE was 31.4/45.7% and 29.5/35.2%, respectively. Although both forms of PE were associated with decreased PAPP-A, logistic regression analysis revealed significant contributions from maternal factors, free β -hCG, CRL, and NT, but not PAPP-A, for prediction of PE.

Conclusions: Our findings support that both clinical forms of EO-PE and LO-PE can be predicted using a combination of maternal history and biomarkers assessed at first trimester aneuploidy screening. However, detection rates were modest, suggesting that models need to be improved with additional markers not included in the current aneuploidy screening programs.

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