Project publication

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Prognostic indicators of severe disease in late preterm pre-eclampsia to guide decision making on timing of delivery: the PEACOCK study

Publication

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Abstract

Objective: To assess the diagnostic performance of angiogenic biomarkers in determining need for delivery in seven days in women with late preterm preeclampsia.

Study design: In a prospective observational cohort study in 36 maternity units across England and Wales, we studied the diagnostic accuracy of placental growth factor (PlGF) and sFlt-1 in determining the risk of complications requiring delivery in late preterm (34^{+0} to 36^{+6} weeks' gestation) preeclampsia. Angiogenic biomarkers were measured using the Quidel (PlGF) and Roche (sFlt-1:PlGF ratio) assays. Additional clinical data was obtained for use within the established 'Prediction of complications in early-onset pre-eclampsia' (PREP)-S prognostic model. Biomarkers were assessed using standard methods (sensitivity, specificity, Receiver Operator Curve areas). Estimated probability of early delivery from PREP-S was compared to actual event rates.

Main outcome measures: Clinically indicated need for delivery for pre-eclampsia within seven days.

Results: PlGF (Quidel) testing had high sensitivity (97.9%) for delivery within seven days, but negative predictive value was only 71.4%, with low specificity (8.4%), with similar results from sFlt-1/PlGF assay. The area under the curve for PlGF was 0.60 (SE 0.03), and 0.65 (0.03), and 0.64 (0.03) for PREP-S in combination with PlGF, and sFlt-1:PlGF, respectively.

Conclusions: Angiogenic biomarkers do not add to clinical assessment to help determine need for delivery for women with late preterm pre-eclampsia. Existing models developed in women with early-onset pre-eclampsia to predict complications cannot be used to predict clinically indicated need for delivery in women with late preterm pre-eclampsia.

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