Comparison of three algorithms for prediction of preeclampsia in the first trimester of pregnancy
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Objective
To compare a new simple algorithm for preeclampsia (PE) prediction among Brazilian women with two international guidelines - National Institute for Clinical Excellence (NICE) and American College of Obstetricians and Gynecologists (ACOG).

Methods
We performed a secondary analysis of two prospective cohort studies to predict PE between 11 and 13+6 weeks of gestation, developed between August 2009 and January 2014. Outcomes measured were total PE, preterm PE (< 37 weeks), and term PE (≥37 weeks). The predictive accuracy of the models was assessed using the area under the receiver operator characteristic curve (AUC-ROC) and via calculation of sensitivity and specificity for each outcome.

Results
Of a total of 733 patients, 55 patients developed PE, 21 preterm and 34 term. The AUC-ROC were low, which compromised the performance of NICE (AUC-ROC 0.65) and ACOG (AUC-ROC 0.56) algorithms. The best predictive model for preterm PE included maternal factors (MF) and mean arterial pressure (MAP) (AUC-ROC 0.84), with a statistically superiority to detect preterm PE when compared with ACOG (p < 0.0001) and NICE (p = 0.0002) guidelines.

Conclusion
The performances of NICE and ACOG guidelines to predict preterm PE were low and a simple algorithm involving maternal factors and MAP performed better for the Brazilian population.