

First trimester screening for preterm and term pre-eclampsia by maternal characteristics and biophysical markers in a low-risk population.

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AIM: To develop a combined predictive model for preterm and term pre-eclampsia (PE) during the first trimester of pregnancy.

METHODS: This investigation was a nested case-control study in singleton pregnancies at the Maternal-Fetal Medicine Unit, University of Chile Hospital. A priori risks for preterm and term PE were calculated by multivariate logistic regression analyses. Biophysical markers were log₁₀ -transformed and expressed as multiples of the median. A multivariate logistic regression analysis was used to estimate a combined predictive model of preterm and term PE. Detection rates at different cut-off points were determined by a receiver operator curve analysis of a posteriori risks.

RESULTS: First trimester mean arterial pressure and uterine artery Doppler pulsatility index were significantly higher in women who develop PE than in the unaffected group. The detection rate of preterm PE based on maternal characteristics and biophysical markers was 72% at a 10% false-positive rate, corresponding to a cut-off risk of 1 in 50. The detection rate for term PE was 30% at a 10% false-positive rate.

CONCLUSION: Preterm PE can be predicted by a combination of maternal characteristics and biophysical markers. However, first trimester screening is less valuable for term PE.