



The value of the combination of the uterine artery Doppler, sFLT-1, PIGF and PAPP-A in predicting pre-eclampsia in advanced age women

Tanprasertkul C, Nanthakomon T, Somprasit C

Department of Obstetrics and Gynecology, Thammasat University Hospital, Klongluang, Pathumthani, Thailand

Objective

To study the value of the combination of the uterine artery Doppler, sFLT-1, PIGF and PAPP-A in predicting pre-eclampsia in advanced age women in second trimester.

Methods

This is a prospective study conducted in the antenatal care clinic at Thammasat University Hospital. Pregnant women aged above 35 years between 18-24 weeks were recruited. The clinical risk factors were recorded. The mean uterine artery PI was measured the same day as the blood sampling. The pregnancy and delivery outcomes were recorded including the occurrence of pre-eclampsia.

Results

A total of 296 patients were recruited. Only 276 patients had a complete follow up. Patients were divided into 2 groups: fifteen patients (5.43%) developed pre-eclampsia while 261 (94.57%) did not. The background characteristics including age, BMI, parity and risk factors of pre-eclampsia were comparable in both groups. In the pre-eclamptic group there was a higher percentage of abnormal uterine artery Doppler compared to non pre-eclamptic group (26.67%, 4/15 vs 16.48%, 46/261) but this was not statistically significant ($p = 0.31$). The ratio of sFLT-1/PIGF in pre-eclamptic group was higher than in non pre-eclamptic group (8.60 ± 4.79 vs 8.09 ± 5.24) but this was not statistically significant ($p = 0.71$). The MoM of PAPP-A in the pre-eclamptic group was less than in non pre-eclamptic group but again this was not statistically significant. The multivariable logistic model was generated to predict the risk ratio of pre-eclampsia. The abnormal uterine artery Doppler had an adjusted risk ratio (aRR) of 1.78 (95%CI: 0.53 – 5.97) while the ratio of sFLT-1/PIGF above 14 had an aRR of 2.58 (95%CI: 0.76 – 8.72). The MoM of PAPP-A less than 0.5 had an aRR of 2.5 (95%CI: 0.65 – 9.65). The combination of these factors had a prediction value of 64.62%.

Conclusion

Using the combination of these factors in second trimester tend to predict the occurrence of pre-eclampsia in advanced age pregnant women.