

## Prediction and prevention of early onset pre-eclampsia: The impact of aspirin after first trimester screening

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### Objective

Several studies have shown that demographic, biophysical and biochemical parameters can be combined to screen for early onset pre-eclampsia (ePET) at 11-13+6 weeks' gestation. Meta-analyses support the use of Aspirin (<16 weeks) as a therapeutic intervention to reduce the prevalence of ePET and improve neonatal morbidity. We aimed to demonstrate the value of first trimester prediction and intervention for ePET.

### Methods

This is a retrospective analysis of two consecutive cohorts screened for ePET. The first cohort, screened between 16 April 2010 and 9 March 2012, were observed and used to validate the FMF ePET algorithm. Women were screened using demographic history, mean arterial pressure, uterine artery Doppler and PaPP-A. High-risk women (>2% ePET risk) in the second cohort (2012 to 2013) were advised to take Aspirin (150mg per day) until 34 weeks' gestation. Pregnancy outcomes were collected from the State mandated midwifery dataset. Case notes of women delivered <34 weeks' gestation were reviewed to ensure accuracy of registry information.

### Results

3, 066 women were screened for ePET in the observational cohort; 12 (0. 4%) of these women required delivery <34 weeks. 2515 women were screened in the therapeutic cohort; 250 (9. 9%) women were high risk and advised to take Aspirin; 1 (0. 04%) developed ePET (Chi-squared:  $p=0. 01$ ). There were no cases of ePET reported in women who had a low risk in this second cohort.

### Conclusion

The FMF algorithm predicting risk of ePET appears to be effective in an Australian population. Aspirin effects a significant, ten-fold reduction in the prevalence of ePET.