

First trimester (11-13 week) screening for prediction and prevention of preterm preeclampsia

Maternal and neonatal morbidities associated with preeclampsia.

Preeclampsia: preclinical and clinical stages



maternal

Affects 2-5% of pregnancies
0.8% deliver <34 weeks

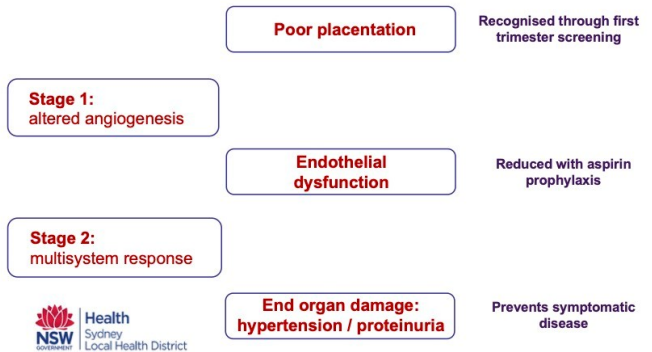
Eclamptic seizures
Cerebrovascular accident
Pulmonary oedema and ARDS
Renal failure
Liver failure (HELLP)
DIC

Ongoing risks:
Hypertension
Ischaemic heart disease
Cerebrovascular accidents

neonatal

15% of all preterm births
15% of IUGR infants

Ongoing risks:
Developmental delay
Obesity
Hypertension / cardiovascular disease
Metabolic syndrome

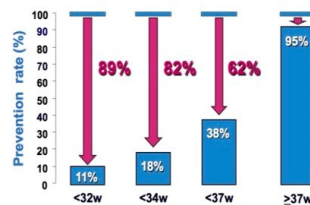
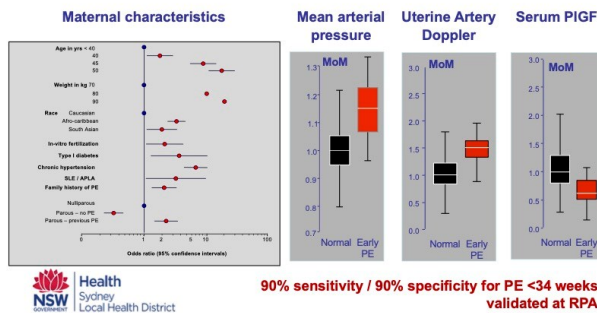


Preeclampsia presents as a significant obstetric complication for women and their babies and affects approximately 1 in 20 pregnancies. 1% of babies are born preterm due to maternal preeclampsia. This represents 1 in 8 of all preterm deliveries. First trimester prediction and provision of aspirin prophylaxis for prevention provides an opportunity to prevent 80% of these preterm deliveries. The high efficacy of this test provides reassurance and allows reduced surveillance through the mid part of pregnancy.

Efficacy of first trimester screening



Prevention of preeclampsia



Rolinik DL, Wright D, Poon L, et al. Aspirin versus placebo in pregnancies at high risk of preterm preeclampsia. N Engl J Med 2017;377:613-22.

Combination of prediction of aspirin prophylaxis gives 80% reduction in preeclampsia delivered <34 weeks gestation.

Screening for preeclampsia is done at the first trimester scan (traditionally used to screen for aneuploidy). The test involves features of maternal history and measurement of maternal blood pressure, uterine artery Doppler ultrasound and analysis of the serum marker PIGF (placental growth factor). All components of the test are done at the time of combined first trimester screening.

A high risk is defined as risk >1 in 100. High risk women are advised to take aspirin (150mg nocte PO) through to 36 weeks of pregnancy. Aspirin has a very well documented safety profile in pregnancy. High compliance (90% doses) is needed to be effective.

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