

Screening for Preterm Pre-eclampsia

Patient Information Series – What you should know, what you should ask.

What is pre-eclampsia?

Pre-eclampsia describes a condition related to high blood pressure during pregnancy. It generally develops in the second half of pregnancy and can affect up to 1 in 20 pregnant women.

In some rare circumstances women with pre-eclampsia have very high blood pressure which can cause them to have a fit (seizure). This is called an eclamptic fit. Pre-eclampsia can also cause problems with kidney and liver function and can make some women very sick.

A very small number of women develop pre-eclampsia at an early stage and need to be delivered early to stop further progression of the disease. In this circumstance, the fetus is delivered prematurely, which can be a problem for health development. Babies born to mothers with pre-eclampsia are often small – and this can also be problematic.

How does pre-eclampsia happen?

The developing pregnancy includes the fetus and the placenta (afterbirth). The placenta can fail to develop a proper root system – and this appears to be a common cause of pre-eclampsia. Once this has happened, the only way to stop pre-eclampsia from becoming more severe is to deliver the placenta – and therefore to deliver the baby at the same time. That is why some babies are delivered prematurely when their mothers develop pre-eclampsia.

Why screen for early onset pre-eclampsia?

It is possible to prevent, or delay, some cases of pre-eclampsia by recognising the fact that the placenta is not implanting well early in the pregnancy and then asking the mother to take aspirin which improves placental implantation. Rather than prescribing aspirin to all pregnant women, many clinicians prefer to assess risk and limit treatment to those that appear to have a higher risk of developing this disease.

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How do you screen for preterm pre-eclampsia?

It is possible to assess how well the placenta is developing at the first routine scan (11-13⁺6 weeks of pregnancy).

This screening test for pre-eclampsia combines a risk derived from the mother's medical and obstetric history with results of a blood test (checking placental function) and results of an ultrasound scan (checking blood flow from the mother to the placenta). The test predicts the risk of 'preterm' pre-eclampsia - leading to delivery at less than 37 weeks. It is not very effective at predicting 'term' pre-eclampsia (at, or more than 37 weeks).

Research studies have shown that screening for preterm pre-eclampsia with a combination of maternal history, measurement of maternal serum PaPP-A or PIGF and ultrasound assessment of uterine Doppler blood flow can identify 80-90% of pregnancies that are destined to deliver preterm for this reason.

What happens if I have a high-risk screening test result?

In addition to identifying up to 90% of women who develop pre-eclampsia and deliver preterm, the test will place up to 10% (1 in 10) of women who have a normal pregnancy outcome in a high-risk group. This actually means that many – in fact most – of the women who have a 'higher risk' result will have a completely normal outcome of pregnancy.

Women who have a 'higher risk' result are typically asked to take aspirin (100-150mg once daily – usually just before going to bed) from the time of risk assessment through to 36 weeks of pregnancy.

Women who take aspirin regularly will reduce their chance of developing pre-eclampsia leading to preterm delivery by more than 60% - and reduce their risk of delivery before 34 weeks (known as very preterm delivery) by 80%. At the moment, about 15% of all very early preterm deliveries are related to pre-eclampsia – so screening and treatment has the potential to have a very significant impact on the proportion of babies admitted to the special care nursery because of prematurity.

Low dose aspirin is very safe in pregnancy. Studies have examined the effect of this drug on tens of thousands of pregnancies and have not found any significant adverse effect. That is why many doctors feel it is appropriate to treat up to 10% of pregnant women to prevent the majority of cases of preterm pre-eclampsia.

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Are all women offered first trimester screening for preterm pre-eclampsia?

The traditional method of assessing risk for pre-eclampsia involves taking a mother's medical history and assessing their blood pressure.

The new method of screening, that includes assessment of a maternal blood test and ultrasound measurement of placental blood flow is currently established in a few obstetric services but is becoming more widespread.

Is there any value in screening if I had pre-eclampsia in a previous pregnancy?

Some obstetricians will advise all women who had a previous pregnancy affected by pre-eclampsia to take aspirin – purely based on their medical history. Others may choose to use this screening test, which factors in your previous history, to calculate a risk specific to this pregnancy, and only treat those with a high-risk result. Even if you are going to take aspirin based on history, the screening test is useful to assess risk – as in many circumstances it will give a reassuring result relieving stress for the remainder of the pregnancy.

What other questions should I ask?

- Am I at high risk of developing pre-eclampsia?
- Will aspirin prevent me from developing this condition?
- When is the best time to take the aspirin?
- When can I stop taking aspirin?
- Are there any long-term consequences of having pre-eclampsia?

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