

Serum biomarkers can predict women at risk of pre-eclampsia

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Levels of biomarkers in the blood of pregnant women can be used to predict which women are at risk of pre-eclampsia, finds a study published today (22 July) in *BJOG: An International Journal of Obstetrics and Gynaecology (BJOG)*. ADMA and Hcy, both known to be raised in women with pre-eclampsia, are present in the blood in higher than normal concentrations a month before the onset of the condition.

Pre-eclampsia is a combination of raised [blood pressure](#) (hypertension) and protein in the urine (proteinuria). It is quite common, usually occurring after 20 weeks of pregnancy, affecting between 2 and 8 in 100 women during pregnancy. In most cases it is mild and has little effect on the pregnancy.

However for 1 in 200 women, the effects are more serious. Severe pre-eclampsia can affect the mother by damaging the kidneys, liver and other organs and, in really severe cases, cause seizures and coma. There is often less fluid than normal around the baby and the placenta can be affected, restricting blood flow and nutrients necessary for the baby's growth.

The exact cause of pre-eclampsia is not understood but it is more common in first pregnancies. Once identified, mothers can be monitored and treated. Often the baby will be delivered early by being induced or by [caesarean section](#).

This study addresses the need to find a reliable way of screening women

to find those at risk of pre-eclampsia. The research team led by Dr Mardia López-Alarcón investigated several possible biomarkers including serum levels of asymmetric dimethylarginine (ADMA) and homocysteine (Hcy) which are known to be raised in several conditions, including pre-eclampsia.

The team found that of the 252 women in their study (based at two hospitals) the 49 in the group who went on to develop pre-eclampsia had raised levels of ADMA and Hcy a month before onset of the condition. The levels of these two biomarkers were raised regardless of the eventual severity of the pre-eclampsia.

Dr López-Alarcón said, "While for most of the women we tested the levels of ADMA and Hcy remained constant throughout pregnancy, these serum biomarkers were clearly raised a month before onset in women who went on to develop pre-eclampsia. Of the other factors we tested, obesity and low levels of folic acid at the start of the pregnancy (all the mothers received folic acid supplementation) were also independently linked to pre-eclampsia.

John Thorp, Deputy Editor-in-Chief of *BJOG* said, "This is a small but important study as it has potential to be helpful in identifying those who need closer monitoring for pre-eclampsia."

More information: *BJOG: An International Journal of Obstetrics and Gynaecology* (BJOG) 2015; [DOI: 10.1111/1471-0528.13516](https://doi.org/10.1111/1471-0528.13516)

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