# Blood test could show women at risk of Postnatal Depression

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(Medical Xpress) -- Researchers at Warwick Medical School have discovered a way of identifying which women are most at risk of postnatal depression (PND) by checking for specific genetic variants. The findings could lead to the development of a simple, accurate blood test which checks for the likelihood of developing the condition.

Presenting the research to the International Congress of Endocrinology/European Congress of Endocrinology, Professor Dimitris Grammatopoulos, Professor of Molecular Medicine at the University of Warwick, said that approximately one in seven women who give birth suffer from PND, which normally starts around two weeks after childbirth.

He explained: “Current screening policies rely on the opportunistic finding of PND cases using tools such as the Edinburgh Postnatal Depression Score (EPDS), but such tests cannot identify women at risk, ahead of them developing the condition."

The researchers assessed a group of 200 pregnant women for PND using the EPDS, once during their first visit to the ante-natal clinic, and again two to eight weeks after they had given birth. They found that the women who developed PND were more likely to have specific genetic variants of the bcl1 and rs242939 single nucleotide polymorphisms (SNPs)[2] of the glucocorticoid receptor and the corticotrophin-releasing hormone receptor-1 genes, respectively.

These receptors control the activity of the hypothalamo-pituitary adrenal (HPA) axis - an endocrine system that is activated in response to stress. The hypothalamus is part of the brain that monitors many aspects of the state of the body's systems and is closely linked with the pituitary gland, which releases a number of hormones into the blood stream that control vital body functions.

The finding appears to show that postnatal depression is a specific subgroup of depression with a distinct genetic element which means that some women are genetically more reactive to the environmental factors which trigger depression.

"Although we knew already that there was an association of the HPA axis with depression, ours is the first study to show a link between specific elements of this pathway and the particular case of PND," said Professor Grammatopoulos.

"We now intend to conduct further research on other genetic variants of the HPA axis in a larger, multi-centre study involving women from Coventry, Birmingham, and London.

"We think that we have made an important step forward in characterising the prospective risks and are therefore paving the way for timely, appropriate medical treatment for women who are likely to develop PND."

PND is a serious condition, the researchers say, and quite different from the 'baby blues', which is milder and shorter-lived. Symptoms include sadness, changes in eating and sleeping patterns, crying episodes, reduced libido, anxiety and irritability.

Effects on children can be significant; for example, depressed mothers are less likely to be affectionate towards and to play with their children

and they may use less 'baby talk' which is designed to engage the child's attention. This may lead to learning and emotional difficulties for the children in later life.

Although it may seem evident that PND is caused by some kind of hormonal upheaval but the role of the HPA axis in this form of depression has not been proved until now.

"We believe that we have made a discovery with important clinical and social implications. If we can identify women likely to suffer from PND in advance so that they can be treated appropriately and at an early stage, we will have improved the lives not just of the parents, but also of their children," Professor Grammatopoulos concluded.

**More information:** The Edinburgh Postnatal Depression Scale is a 10-item self-reported questionnaire developed to identify women with PND. Items of the scale correspond to various symptoms of clinical depression, and overall assessment is done by the total score of the sum of the ten items.

Provided by University of Warwick