

Researchers identify circulating proteins linked to preeclampsia and other hypertensive disorders of pregnancy

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Preeclampsia and other hypertensive disorders of pregnancy—which are characterized by high blood pressure with or without organ dysfunction

during the second half of pregnancy—carry considerable short- and long-term risks for both the mother and child. Treatment options (other than expedited delivery) remain limited.

A team led by researchers at Massachusetts General Hospital (MGH) and the Broad Institute recently identified several proteins with strong evidence of causal or protective roles for hypertensive disorders of pregnancy, which could provide clues into how the conditions arise and how they might be prevented or treated.

In the study, which is published in [JAMA Cardiology](#) and involved genetic data from more than 600,000 individuals, the investigators tested whether a [genetic predisposition](#) to higher or lower levels of different proteins in the bloodstream influenced a woman's risk of developing hypertensive disorders of pregnancy.

The scientists identified six proteins involved in cardiovascular and inflammatory processes that likely contribute to or protect against these conditions. These included CD40, cystatin B, eosinophil cationic [protein](#), galectin-3, [heat shock protein](#) 27, and N-terminal pro-B type natriuretic peptide.

"These findings provide new insights into the biology of the hypertensive disorders of pregnancy, suggesting different pathways—such as blood vessel regulation, inflammation, and immunity—involved in the development of these diseases," says senior author Michael C. Honigberg, MD, MPP, a cardiologist and researcher at MGH and an assistant professor of Medicine at Harvard Medical School.

"Some of the proteins could serve as potential therapeutic targets and should be investigated further in animal models and ultimately, if promising, in human trials."

More information: Art Schuermans et al, Genetic Associations of Circulating Cardiovascular Proteins With Gestational Hypertension and Preeclampsia, *JAMA Cardiology* (2024). [DOI: 10.1001/jamacardio.2023.4994](https://doi.org/10.1001/jamacardio.2023.4994)

Provided by Massachusetts General Hospital

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