

Findings highlight importance of early monitoring and management of hypertension during and after pregnancy

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Hispanic/Latina women with a history of hypertensive disorders of pregnancy (HDP)—conditions marked by high blood pressure during

pregnancy—are more likely to have abnormalities in their heart structure and function decades later when compared with women without a history of HDP, according to a National Institutes of Health-supported study.

The findings, [published](#) in the journal *Hypertension*, also suggest that while having high blood pressure later in life can contribute to these abnormalities, HDP play the greater role, significantly raising a woman's risk of developing [cardiovascular disease](#).

"The changes in cardiac structure and function that this study uncovers are known predictors of cardiovascular events such as heart failure and even death," said Jasmina Varagic, Ph.D., program officer in the Vascular Biology and Hypertension branch at the National Heart, Lung, and Blood Institute (NHLBI), part of NIH.

"These findings emphasize the importance of recognizing HDP as an important risk factor for these future problems, especially in this understudied population of women."

The rates of HDP, which include preeclampsia, eclampsia, and gestational hypertension, more than doubled between 2007–2019 in the U.S., with Hispanic/Latina women having the highest rate of over 60 cases per 1,000 live births.

Previous studies have shown that among women who have HDP, up to 20% will continue to have high blood pressure six months after giving birth and will also have up to a 10-fold lifetime risk of chronic hypertension. But researchers were unclear just how HDP was driving the high risk of cardiovascular disease many of these women later developed.

"Prior to our study the question was: Do abnormalities in the structure and function of the heart develop because of the HDP itself, or because

many of the women who have HDP then go on to develop chronic high blood pressure?" asked Odayme Quesada, M.D., medical director for The Christ Hospital Women's Heart Center, and lead author on the study. "Our study helps to answer this question."

For the study, the researchers used participants in the Hispanic Community Health Study/Study of Latinos (HCHS/SOL), a multi-center community-based cohort of Hispanic/Latino adults. The cohort included 5,168 women who had at least one prior pregnancy and whose average age was 58.7 years—well past childbearing age—at the time of the study.

The participants underwent ultrasound scans to look for alterations in the structure and function of the heart, focusing on the left ventricle, considered the workhorse of the heart that pumps blood into the body. Researchers looked for alterations in the thickness and shape of the ventricle, and how well the heart squeezes and relaxes.

The researchers found that prior HDP was associated with alterations in how the heart contracts and relaxes, increased thickness of the heart wall, and higher rates of abnormal geometry in the left ventricle. These abnormalities, particularly in the geometry of the left ventricle, are known to predict future cardiovascular events, including [heart failure](#), ischemic heart disease, and sudden cardiac death.

The researchers also discovered that having hypertension later in life only accounted for part of the changes seen in heart structure and function. For example, they found that hypertension experienced by the women at the time of the study explained only 14% of the risk of having abnormal geometry of the [left ventricle](#), while the rest was explained by having HDP at the time of their pregnancies.

"This underscores the importance of early surveillance for heart

abnormalities in women whose pregnancy is complicated by HDP, and also the importance of managing [high blood pressure](#) to prevent later life cardiovascular disease," said Varagic. She added that factors beyond blood pressure that link HDP to later life heart abnormalities need further investigation.

More information: Odayme Quesada et al, Cardiac Abnormalities in Hispanic/Latina Women With Prior De Novo Hypertensive Disorders of Pregnancy, *Hypertension* (2023). [DOI: 10.1161/HYPERTENSIONAHA.123.21248](#)

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