



Hypertensive disorders of pregnancy as a risk factor for cardiovascular disease

Trastornos hipertensivos del embarazo como factor de riesgo para enfermedad cardiovascular

Patricia Lenny Nuriulú-Escobar,* Talía Maritza Leal-Alvarado,† Adriana Puente-Barragán§

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INTRODUCTION

It is estimated that 10% of pregnant women have hypertensive disorders of pregnancy (HDP), and the increased risk of maternal complications depends on the disorder's severity and other comorbidities. Women with a history of HDP have a higher risk of developing hypertension, diabetes, dyslipidemia, and cardiovascular disease.¹ International guidelines on cardiovascular prevention indicate close follow-up in the postpartum period and recognize preeclampsia as a risk factor specific to gender.²

HYPERTENSIVE DISORDERS OF PREGNANCY: DEFINITION AND EPIDEMIOLOGY

HDPs comprise different types of systemic arterial hypertension (SAH) that occur with pregnancy, manifesting for the first time during pregnancy or overlapping with a previous hypertensive condition (*Figure 1*). Within the spectrum of HDP, preeclampsia is recognized as a condition associated with increased gestational mortality and long-term adverse maternal outcomes.

Cardiovascular disease and preeclampsia share similar risk factors, such as diabetes and obesity. An increase in the prevalence of HDP has been observed recently, conditioned by a more significant number of comorbidities in pregnant women and gestation at advanced age.¹

PATHOPHYSIOLOGY

During pregnancy, hemodynamic changes characterized by increased intravascular volume and cardiac output occur, requiring cardiovascular adaptations. Preeclampsia may be a maladaptive process to these changes.³ In preeclampsia, abnormal trophoblast implantation and a failed remodeling process of the myometrium spiral arteries occur, causing decreased blood supply to the placenta, which translates into placental ischemia, increased circulating angiogenic markers, endothelial dysfunction, vasoconstriction, oxidative stress, and micro embolism phenomena in the maternal vascular tree. The release of proinflammatory cytokines has also been proposed resulting from mechanisms mediated by «helper T» cells.⁴

Placental abnormalities in early pregnancy are associated with local ischemia and uteroplacental insufficiency; the release of these pro-inflammatory substances into the maternal circulation clinically translates into the early onset of hypertension and preeclampsia. Chronic oxidative stress due to pre-existing metabolic abnormalities such as diabetes or obesity increases the risk of late-onset preeclampsia.⁵

Given that HDPs such as gestational hypertension and preeclampsia have a two-fold increased risk of developing cardiovascular disease, it is important to follow up with medical care since this CV risk is favored by

* Cardiology Service, Cardiovascular Institute of Hidalgo. Pachuca de Soto, Hidalgo, Mexico.

† Cardiology Service, ISSSTE. Puebla, Mexico.

§ Head of Cardiology Medical Section. National Medical Center 20 de Noviembre, ISSSTE.

Head of the Chapter on Cardiovascular Diseases in Women, ANCAM. Mexico.

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underlying risk factors and factors typical of HDPs. According to the guidelines of the American Heart Association (AHA) and the National Institute for Health and Care Excellence, women should be given medical follow-up through an assessment six to eight weeks after delivery, considering; the measurement of blood pressure (BP), weight, and promoting changes towards healthy habits and monitoring serum glucose, lipids, and BP every year until the woman reaches 50 years of age is also advised.¹

In women with a history of preeclampsia, chronic SAH, and later dyslipidemia develop earlier than those with a normotensive pregnancy.¹ The AHA and American College of Cardiology support the fact that preeclampsia is a factor that increases the risk of hypercholesterolemia.⁶

CVD risk increases if associated factors, including diabetes mellitus, obesity, and advanced maternal age, are present. A complicated pregnancy is considered to «mask»

the woman with pre-existing CV risk factors. Various meta-analyses have shown that 32% of women with HDP develop chronic SAH in the first ten years after pregnancy, compared to 11% of women with normotensive pregnancies. The risk of chronic SAH is related to the number of pregnancies with HDP effects.⁷

Regarding women who present HDP at the age of 35, the Number Needed for Detection (NNT) for a diagnosis of a woman with chronic SAH is 9; at 39 years, the NNT for a diagnosis of dyslipidemia is 18, and between 50-55 years, the NNT for diagnosis of diabetes is 22.¹

It is recommended that all women with HDP undergo evaluation of risk factors (RF); the period between pregnancy and the appearance of RF should be considered an opportunity to make changes towards a healthy lifestyle and reduce the appearance of cardiovascular disease.

CONCLUSIONS

HDPs are a relatively common complication during pregnancy; they are associated with early and late complications that increase the risk of cardiovascular disease, mainly chronic arterial hypertension. It is necessary to carry out a long-term monitoring of BP and metabolic evaluation after delivery for its detection and timely treatment, as well as to implement strategies with changes in lifestyle and weight control.

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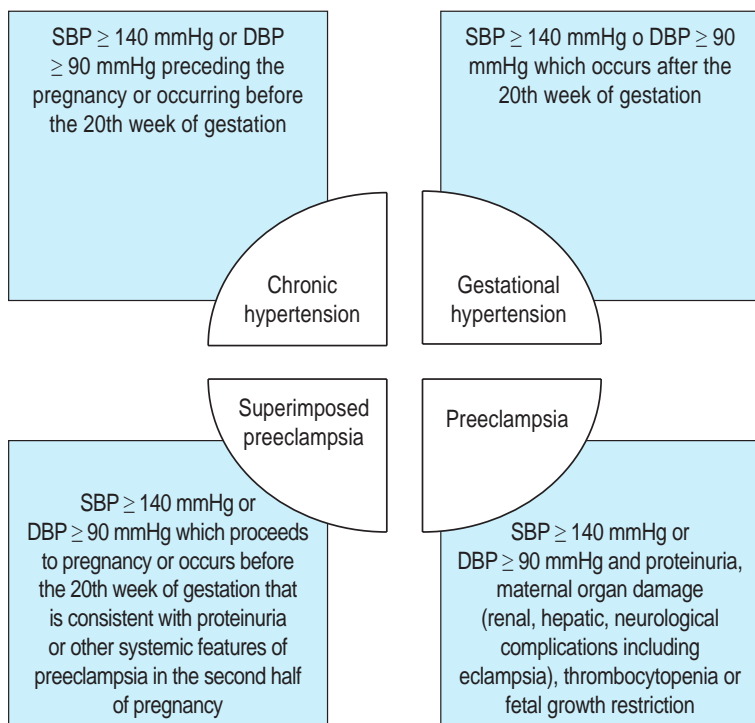


Figure 1: Hypertensive disorders in pregnancy. SBP = systolic blood pressure. DBP = diastolic blood pressure.

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Correspondence:

Patricia Lenny Nuriulú-Escobar

E-mail: dranuriulu@cardiohidalgo.net