Management of Hypertensive Crisis for the Obstetrician/Gynecologist

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KEYWORDS

• Hypertension • Pregnancy • Hypertensive crisis • Hypertensive urgency/emergency
• Preeclampsia • Eclampsia • HELLP syndrome • Pregnancy safety bundles

KEY POINTS

- Systolic blood pressure greater than 160 mm Hg is associated with many adverse maternal outcomes, such as stroke and pulmonary edema.
- Blood pressure measurements greater than or equal to 160/110 mm Hg lasting longer than 15 minutes warrant immediate medical therapy.
- Hydralazine, labetalol, and nifedipine are currently considered first-line treatment options for the emergent reduction of blood pressure in pregnancy.
- Early maternal warning signs, such as a systolic blood pressure greater than 160 mm Hg, tachycardia, and oliguria, allow timely diagnostic and therapeutic interventions.
- Health care providers taking care of obstetric patients should familiarize themselves with the most updated classifications and management of hypertensive disorders of pregnancy.

INTRODUCTION

Hypertensive disorders of pregnancy are considered among the leading causes of maternal and fetal morbidity and mortality. Complicating approximately 10% of pregnancies, they are responsible for an estimated 50,000 to 60,000 preeclampsia-related deaths per year worldwide, many of which are preventable.[1–7]

In pregnancy, irrespective of the underlying cause, a blood pressure measurement greater than or equal to 160/110 mm Hg persisting for more than 15 minutes is considered an obstetric emergency. This condition warrants immediate attention and prompt appropriate therapy.[1,5,8] Medical professionals taking care of obstetric patients must

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have a good understanding of maternal physiology, as well as the classification and management of hypertensive disorders encountered during pregnancy and the puerperium. They should also be familiar and comfortable with the most up-to-date and evidence-based guidelines. Adherence to these guidelines is of paramount importance, because it has been shown in numerous studies to reduce the incidence of adverse maternal and fetal outcomes. The improvement in maternal outcomes is mainly secondary to a reduction in cerebral and respiratory complications.[1,5,7–11] Prompt medical treatment is extremely important in cases of hypertensive urgency/crisis because the timing of initiation of therapy can alter morbidity and mortality risk.

WHY ARE HYPERTENSIVE DISORDERS IN PREGNANT AND POSTPARTUM PATIENTS IMPORTANT?

Hypertensive disorders are a leading cause of preventable maternal and fetal morbidity and mortality. Hypertensive disorders in pregnancy are often complex, and usually involve multiple organ systems and may be related to the secondary causes. Optimizing blood pressure remains of paramount importance, especially the control of systolic pressure, given its direct association with stroke and pulmonary edema.[1,5,7,11] However, treatment and management go beyond controlling the blood pressure. The entire disease spectrum needs to be taken into consideration to achieve desired outcomes and avoidance of complications. Optimal delivery timing needs to be considered as well as the treatment of any underlying disorder when applicable. Treatment with other necessary medications, such as betamethasone and magnesium sulfate, to prepare the fetus for delivery or to stabilize the mother must also accompany blood pressure control.[1,5]

COMMON COMPLICATIONS ASSOCIATED WITH HYPERTENSIVE DISORDERS OF PREGNANCY

These complications can be divided into maternal and fetal types and include[1,2,5,12–16]:

Maternal

- Increased risk of:
  - Hemorrhagic stroke
  - Pulmonary edema
  - Acute renal failure or accelerated end-organ damage
  - Gestational diabetes
  - Heart failure/cardiopulmonary decompensation
  - Hypertensive encephalopathy
  - Retinopathy
  - Cesarean delivery
  - Postpartum hemorrhage
  - Maternal mortality

Fetal

- Increased risk of:
  - Abruptio placenta
  - Fetal growth restriction (intrauterine growth restriction [IUGR])
  - Preterm delivery
  - Intrauterine fetal demise
  - Perinatal mortality
  - Complications of prematurity
  - Potential teratogen exposure from hypertensive medications