

Management of Hypertension in Pregnancy- Review

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Abstract :

Hypertension is defined as blood pressure higher than 140/90 mmHg. Hypertension in pregnancy can be either due to a chronic hypertensive patient becoming pregnant or the onset of hypertension noticed first during pregnancy when it is called gestational hypertension. Women who have high blood pressure are at higher risk for complications during pregnancy than those with normal blood pressure. The causes for hypertension during pregnancy are unhealthy lifestyle choices, being overweight or obese, or failing to stay active. The various hypertensive states of pregnancy are Gestational Hypertension, Preeclampsia and eclampsia. Although many pregnant women with high blood pressure have healthy babies without serious problems, high blood pressure can be dangerous for both the mother and the foetus. Due to the frequent occurrence and potential sequelae of hypertensive disorders in pregnancy, prompt identification and appropriate management are essential. This article reviews the management of hypertension in pregnancy.

Key Words : Hypertension, placenta, pregnancy, complications, management.

INTRODUCTION :

High blood pressure, or hypertension, is defined as blood pressure higher than 140/90 mm Hg(1). The condition can become a major problem for some pregnant women. There are several possible causes of high blood pressure during pregnancy. These include: being overweight or obese, failing to stay active, smoking, drinking alcohol, first time pregnancy, a family history of kidney disease, preeclampsia, or chronic hypertension, carrying more than one child, age (over 40), assistive technology (such as IVF), unhealthy lifestyle choices. Women carrying more than one child are more likely to develop hypertension, as their body is under additional stress from the pregnancy. Maternal age is also a factor, with pregnant women over the age of 40 being more at risk(2). High blood pressure during pregnancy can place extra stress on heart and kidneys and can increase risk of heart disease, kidney disease, and stroke. The complications includes fetal growth restriction, preeclampsia, preterm delivery, placental abruption, cesarean delivery. Hypertensive disorders during pregnancy are classified into 4 categories :Chronic hypertension, Preeclampsia-eclampsia, Preeclampsia superimposed on chronic hypertension, Gestational hypertension (transient hypertension of pregnancy or chronic hypertension identified in the latter half of pregnancy).(3)

PRECLAMPSIA :

Preeclampsia is a pregnancy-specific multisystem disorder of unknown etiology. The disorder affects approximately 5 to 7 percent of pregnancies and is a significant cause of maternal and fetal morbidity and mortality.(4) Preeclampsia is defined by the new onset of elevated blood pressure and proteinuria after 20 weeks of gestation. It is considered severe if blood pressure and proteinuria are increased substantially or symptoms of end-organ damage (including fetal growth restriction) occur. (5)

Diagnostic Criteria for Preeclampsia:

Blood pressure: 140 mm Hg or higher systolic or 90 mm Hg or higher diastolic after 20 weeks of gestation in a woman with previously normal blood pressure

Proteinuria: 0.3 g or more of protein in a 24-hour urine collection (usually corresponds with 1+ or greater on a urine dipstick test)(6).

Severe preeclampsia

Blood pressure: 160 mm Hg or higher systolic or 110 mm Hg or higher diastolic on two occasions at least six hours apart in a woman on bed rest.

Proteinuria: 5 g or more of protein in a 24-hour urine collection or 3+ or greater on urine dipstick testing of two random urine samples collected at least four hours apart

Other features: oliguria (less than 500 mL of urine in 24 hours), cerebral or visual disturbances, pulmonary edema or cyanosis, epigastric or right upper quadrant pain, impaired liver function, thrombocytopenia, intrauterine growth restriction.(7).

MANAGEMENT :

Antihypertensive Drugs Commonly Used in the Treatment of Preeclampsia

Hydralazine (Apresoline)*

Initial dose: 5 mg IV or 10 mg IM

When blood pressure is controlled, repeat initial dose as needed (usually about every 3 hours; maximum, 400 mg per day).

If blood pressure is not controlled in 20 minutes, repeat initial dose every 20 minutes until maximum dosage is reached, or go immediately to next step.

If blood pressure is not controlled with a total of 20 mg IV or 30 mg IM, consider using a different antihypertensive drug (labetalol, † nifedipine [Procardia], sodium nitroprusside [Nitropress]).

Labetalol (Normodyne, Trandate)*

Initial dose: 20 mg in IV bolus

If blood pressure is not controlled, give 40 mg 10 minutes after initial dose and then 80 mg every 10 minutes for two additional doses (maximum: 220 mg).

If blood pressure is not controlled, use a different antihypertensive drug (hydralazine, nifedipine, sodium nitroprusside).(8).

GESTATIONAL HYPERTENSION:

Hypertension occurring in the second half of pregnancy in a previously normotensive woman, without significant proteinuria or other features of pre-eclampsia, is termed gestational or pregnancy induced hypertension.(9). gestational hypertension is diagnosed after 36 weeks of pregnancy, the risk falls to 10%.With gestational hypertension, blood pressure usually normalises by six weeks post partum.

Diagnostic Criteria for Gestational hypertension :

Systolic BP of at least 140 mmHg and/or diastolic BP of at least 90 mmHg obtained during a minimum of 2 occasions.Measurements must be taken at least 6 hours apart after 20 weeks' gestation, but should not be more than 7 days apart.Women are typically known to be normotensive prior to both pregnancy and 20 weeks' gestation.

Severity classification of gestational hypertension:

Mild: BP measurements between 140/90 mmHg and 160/110 mmHg.

Severe: sustained BP elevations for a minimum of 6 hours with systolic BP of at least 160 mmHg and/or diastolic BP of at least 110 mmHg.(9).

MANAGEMENT :

There is no specific treatment, but is monitored closely to rapidly identify pre-eclampsia and its life-threatening complications (HELLP syndrome and eclampsia).

Drug treatment options are limited, as many anti hypertensives may negatively affect the foetus. Methyl Dopa, hydralazine, and labetalol are most commonly used for severe pregnancy hypertension.(10)

The fetus is at increased risk for a variety of life-threatening conditions, including pulmonary hypoplasia (immature lungs). If the dangerous complications appear after the fetus has reached a point of viability, even though still immature, then an early delivery may be warranted to save the lives of both mother and baby. An appropriate plan for labor and delivery includes selection of a hospital with provisions for advanced life support of newborn babies.(11)

CHRONIC HYPERTENSION:

It is hypertension that is present at the booking visit or before 20 weeks or if the woman is already taking antihypertensive medication when referred to maternity services. It can be primary or secondary in aetiology. (12)

Diagnostic criteria for chronic hypertension::

* Mild: Systolic blood pressure \geq 140 mmHg Diastolic blood pressure \geq 90 mmHg

* Severe: Systolic blood pressure \geq 180 mmHg Diastolic blood pressure \geq 110 mmHg

* Use of antihypertensive medications before pregnancy

* Onset of hypertension before 20th week of gestation

* Persistence of hypertension beyond the usual postpartum period. (13)

MANAGEMENT :

- 1.Stop antihypertensive treatment in women taking ACE inhibitors or ARBs if they become pregnant (preferably within 2 working days of notification of pregnancy) and offer alternatives.
- 2.In women with chronic hypertension, schedule additional antenatal consultations based on the individual needs of the woman and her baby.
- 3.Diagnose significant proteinuria if the urinary protein:creatinine ratio is greater than 30 mg/mmol or a validated 24-hour urine collection result shows greater than 300 mg protein.(14)

PREECLAMPSIA SUPERIMPOSED ON CHRONIC HYPERTENSION:

Development of new signs and/or symptoms associated with preeclampsia after gestational week 20, as above, in a woman with chronic hypertension.

Diagnostic criteria for preeclampsia superimposed on chronic hypertension:

The appearance of de nova proteinuria starting with gestational Week 20.

A sudden increase in the magnitude of the hypertension. the appearance of thrombocytopenia, and/or abnormal levels of transaminases, and in women who have proteinuria early in gestation, a sudden increase in proteinuria, are labeled as highly likely of superimposed Preeclampsia although none of these suggestions are quantified. (15)

MANAGEMENT:

- *For women with superimposed preeclampsia who receive expectant management at less than 34 0/7 weeks of gestation, the administration of corticosteroids for fetal lung maturity benefit is recommended.
- *For women with superimposed preeclampsia without severe features and stable maternal and fetal conditions, expectant management until 37/7 weeks of gestation is suggested.
- *For women with chronic hypertension and superimposed preeclampsia with severe features, the administration of intrapartum–postpartum parenteral magnesium sulfate to prevent eclampsia is recommended.(16)

CONCLUSION :

Hypertensive disorders of pregnancy remain leading causes of maternal and perinatal morbidity and mortality.Maternity care for women who are planning pregnancy and are at risk of an HDP, have an HDP in the current pregnancy, or are postpartum and had an HDP is necessary.Thus this article is an overview of management of hypertension during pregnancy.

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