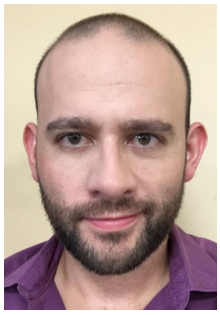

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78 – The Family Doctor Approach to Hypertensive Disorders During Pregnancy

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Hypertensive disorders during pregnancy represent a leading cause of morbidity and mortality, for mothers, fetuses and newborns (ACOG, 2013; Regitz-Zagrosek, 2011), which are at risk for severe complications, such as placental abruption, intracranial haemorrhage, multi-organ failure and disseminated intravascular coagulation (Vesto, 2012); fetuses can suffer intrauterine growth restriction, prematurity and intrauterine death (Mol, 2016). Besides, these patients have a higher future cardiovascular risk (Tooher, 2016).

The clinician must differentiate pre-eclampsia from chronic hypertension, by taking a detailed history, determining presence of risk factors (Table 1), excluding secondary causes, making a thorough physical examination, stratifying risk according to laboratory findings and assessing fetal well-being (ACOG, 2013; Magloire, 2016; Vest, 2012).

Table 1. Risk factors for hypertensive disorders during pregnancy

Source	Condition
Maternal	Age over 40, interpregnancy interval less than 2 years or more than 10 years, black ethnicity, mother born small for gestational age and nulliparity.
Medical	Previous gestational hypertension or pre-eclampsia, pregestational diabetes, obesity and/or insulin resistance, chronic HTN, chronic nephropathy, thrombophilia, lupus, history of migraine, use of SSRIs after first trimester, maternal infections.
Fetal	Multiparity, gestational trophoblastic disease, hydrops fetalis, triploidy.
Paternal	First pregnancy with partner, pregnancies due to donor insemination or limited paternal sperm exposure, partner who fathered a pre-eclamptic pregnancy in another woman.

Adapted from: Mc Carthy, 2015; Regitz-Zagrosek, 2011; Vest, 2012; Tranquilli, 2014

Initial approach for stratification includes urinalysis, 24-hour urine collection, complete blood count, serum creatinine, uric acid and liver enzymes (Magloire, 2016; Regitz-Zagrosek; 2011; Vest, 2012). Fetal well-being is assessed by non-stress tests with amniotic fluid quantification or biophysical profile (Magloire 2015; Vest; 2012). Relevant aspects from ultrasound include fetal weight, fetal growth rate and amniotic fluid volume; whenever possible, Doppler ultrasound of umbilical artery must be

performed (Maulik, 2010; Vest, 2012).

Correct diagnosis should be carried out (see Table 2), noting that undiagnosed chronic HTN may be missed during first trimester of pregnancy, since there is a physiologic reduction of BP throughout the first three months of gestation (Vest, 2012; ACOG, 2013).

Pre-eclampsia can be diagnosed in a patient with hypertension and one severe feature, i.e., thrombocytopenia (≤ 100 thousand cells per microlitre), impaired liver function (raise in blood concentration of liver enzymes to twice normal concentration, severe persistent pain in epigastrium or right upper quadrant, neither explained by other diagnosis nor alleviated with medications), recent development of renal failure (serum creatinine greater than 1,1 mg/dL or twice baseline value), pulmonary oedema or new-onset visual o cerebral disturbances (ACOG, 2013; Leeman, 2016; Vest, 2012).

Table 2. Diagnostic criteria for hypertensive disorders during pregnancy

Condition	Characteristics
Chronic hypertension	SBP ≥ 140 / DBP ≥ 90, previous to pregnancy, before week 20 of pregnancy or after 42 post-partum days
Gestational hypertension	After 20 weeks of LMP, with or without proteinuria, without other pre-eclampsia findings, disappearing before 42 post-partum days
Pre-eclampsia	After 20 weeks of gestation, with proteinuria higher than 300 mg in 24 hours. Diagnosis can be made without proteinuria but in the presence of severe features (see text)
Eclampsia	Convulsions rises in a patient with diagnostic criteria for pre-eclampsia
Pre-eclampsia superimposed to chronic HTN	Patient having chronic HTN with pre-eclampsia findings, after 20 weeks' gestation

Adapted from: Vest, 2012; ACOG, 2013.

DBP: diastolic blood pressure. LMP: last menstrual period. SBP: systolic blood pressure.

Optimal BP goals for chronic and gestational hypertension, when the patient has no pre-eclamptic manifestations, are not defined; nevertheless, SBP values ranging from 150 to 160 mmHg and/or DBP 100 to 110 mmHg should be treated; currently SBP is considered the best outcomes predictor, therefore, treatment is designed to diminish maternal end-organ damage (Martin, 2005; Vest, 2012).

Non-pharmacological management (ACOG, 2013; Leeman, 2016; Magloire, 2016; Vest, 2012) for patients with SBP less than 160 and/or DPB less than 110 mmHg, includes close monitoring to determine adequate time of delivery (clinical deterioration or at term) and assessment of fetal growth to discard intrauterine growth restriction. Strict bed rest for patients without severe features of pre-eclampsia, weight loss, extremely low sodium intake (less than 100 mEq/day) are not recommended.

Drug treatment (ACOG, 2013; Mancia, 2013; McCarthy, 2015; Vest, 2012) is suggested with SBP ≥ 150-160 and/or DBP 100-110 mmHg; recommended drugs are methyldopa, labetalol or nifedipine, with SBP objectives between 120-160 mmHg and DBP 80 to 105 mmHg; aspirin, 60 to 80 mg, is recommended for patients with chronic HTN and high risk of adverse pregnancy outcomes (pre-eclampsia in two or more preceding pregnancies, or previous early-onset pre-eclampsia and preterm delivery at less than 34 weeks' gestation), initiating at the end of first trimester; corticosteroids are recommended for patients having expectant management, at less than 34 weeks, with severe pre-eclampsia or pre-eclampsia superimposed; magnesium sulfate, during and after partum, is suggested in case of eclampsia, severe pre-eclampsia, chronic HTN and superimposed pre-eclampsia.

Take Home Message

- Hypertensive disorders during pregnancy are a main cause of morbidity and mortality, as long as a future cardiovascular risk. In any patient with elevated blood pressure, pre-eclampsia must be excluded and correct classification and management should be done, through complete history, physical exam, laboratory tests and fetal well-being assessment. Actual classification includes: chronic hypertension, gestational hypertension, pre-eclampsia, eclampsia and pre-eclampsia superimposed to chronic hypertension.
- Drug treatment is suggested for SBP over 160 mmHg and/or DBP over 110 mmHg, with methyldopa, labetalol of nifedipine. Aspirin, corticosteroids and magnesium sulfate are helpful medications in these patients.

Original Abstract

http://www.woncaeurope.org/content/op-265-reduction-maternal-mortality-pre-eclampsia-eclampsia-hellp-syndrome-and-low-birth

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Hypertensive disorders are a major cause of what? - perinatal morbidity and mortality worldwide. Why do women/babies die due to hypertensive disorders during pregnancy? - uteroplacental insufficiency - premature birth. Of maternal deaths worldwide, _% can be attributed to preeclampsia and eclampsia.Â Impact of maternal hypertension in the mother (family life issues). - loss of income and normal flow of family life - frequent doctor visits - often requires tertiary care, transport - bed rest. Characteristics of hyper dynamic patients.Â 78 terms. Jfroth. Hypertensive Disorders in Pregnancy. 25 terms. hheaattherr. Women who have high blood pressure (hypertension) during pregnancy or who develop pre-eclampsia (high blood pressure with protein in the urine or other organ systems involvement, or both) can develop serious complications. Potential complications for the mother are worsening of pre-eclampsia, development of seizures and eclampsia, HELLP syndrome (haemolysis, elevated liver enzymes and low platelet count), detachment of the placenta, liver failure, renal failure, and difficulty breathing because of fluid in the lungs.Â Further studies are needed to look at the different types of hypertensive disorders individually. Authors' conclusions Hypertension in Pregnancy: The Management of Hypertensive Disorders During Pregnancy. London, UK: Royal College of Obstetricians and Gynaecologists; 2011. 8. Churchill D, Beevers GD, Meher S, et al.Â 52. Hofmeyr GJ, Lawrie TA, Atallah AN, et al. Calcium supplementation during pregnancy for preventing hypertensive disorders and related problems. Cochrane Database Syst Rev. 2014;(6):CD001059. Although hypertensive disorders of pregnancy are the leading cause of poor perinatal outcomes in Ethiopia, there is no study that shows the national prevalence. Therefore, the aim of this study was to estimate the national pooled prevalence of hypertensive disorders of pregnancy from studies conducted in different parts of the country. Databases; MEDLINE, PubMed, HINARI, EMBASE, Google Scholar and African Journals Online were searched by using different search terms on HDP and Ethiopia. Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument was used for critical a