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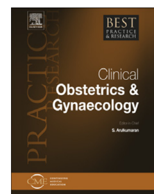

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# The hypertensive disorders of pregnancy (29.3)

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Hypertensive disorders are the most common medical complication of pregnancy. As such, a large part of antenatal care is dedicated to the detection of pre-eclampsia, the most dangerous of the hypertensive disorders. The highlights of this chapter include progress in the use of out-of-office blood pressure measurement as an adjunct to office blood pressure measurement, pre-eclampsia defined as proteinuria or relevant end-organ dysfunction, antihypertensive therapy for severe and non-severe hypertension and post-partum follow-up to mitigate the increased cardiovascular risk associated with any of the hypertensive disorders of pregnancy.

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## Introduction

Hypertensive disorders complicate up to 10% of pregnancies, and they remain a leading cause of maternal and perinatal morbidity and mortality, worldwide. Rates are expected to rise, given older and more obese obstetric populations with more antecedent medical complications.

## Definitions of hypertension and proteinuria

### *Measurement of blood pressure and definition of hypertension*

Blood pressure (BP) should be measured thrice, with the average of the second and third values taken as the BP for the visit [1,2]. BP may be measured in the office (by auscultatory or automated methods) or outside the office (by ambulatory blood pressure monitoring (ABPM) or home blood pressure monitoring (HBPM)) [1]. In ABPM, BP is measured serially using an automated device over 24 h or repeatedly in a day unit. HBPM is done by the woman using an automated device, with duplicate measurements taken at least twice daily over several days.

Although pregnant women and their care providers prefer HBPM to ABPM, data are insufficient to guide choice. Patients require education about devices acceptable for use in pregnancy, monitoring procedures and the BP threshold for alerting maternity care providers. If women are unable to access pregnancy-validated devices, clinicians should compare contemporaneous HBPM and office readings.

Hypertension in pregnancy is an office/hospital systolic blood pressure (sBP) ≥140 mmHg and/or diastolic blood pressure (dBP) ≥90 mmHg, or ABPM or HBPM sBP ≥135 and/or dBP ≥85 mmHg [1]. Severe hypertension is sBP ≥160 mmHg and/or dBP ≥110 mmHg, confirmed after 15 min at the same visit. Hypertension may reflect a situational rise, the ‘white-coat’ effect or early pre-eclampsia [3,4]. Up to 70% of women with office hypertension have normal BP on subsequent measurements on the same visit, or by ABPM or HBPM [5]. The ‘white-coat’ effect is observed when BP is ≥ 140/90 mmHg in the office but <135/85 mmHg by daytime ABPM or average HBPM. ‘Masked hypertension’ is observed when office BP is < 140/90 mmHg but out-of-office BP is ≥ 135/85 mmHg (performed for headache, for example) [6].

### *Measurement and definition of proteinuria*

Women should be assessed for proteinuria in early pregnancy to detect pre-existing renal disease, and at ≥20 weeks to screen for pre-eclampsia in those at increased risk. Benign and/or transient causes of proteinuria should be considered.

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