

Hypertensive disorders in pregnancy and the general practitioner: a vignette and lessons to learn

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Abstract

In South Africa, the general practitioner is often the first health professional to provide care and health advice to pregnant women. Estimation of blood pressure levels is an essential basic step, particularly in pregnant women. Hypertensive disorders occur frequently in pregnancy and are significant causes of maternal morbidity and mortality. General practitioners should be aware of the complications associated with hypertension and recognise that severe hypertension requires prompt, gradual and sustained lowering of blood pressure, intensive counselling and early referral to an appropriate hospital.

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Introduction

Hypertensive disorders of pregnancy are the most common direct cause of maternal morbidity and mortality in South Africa.¹ The Saving Mothers Report 2005–2007 indicates that approximately 15% of all maternal deaths were caused by hypertensive disorders of pregnancy during the period 2005–2007. This report also suggests that although patient-related factors such as delay in seeking help and booking for antenatal care at a late gestational age are significant factors, deficiencies in providing emergency health care also play an important role in the chain of events leading to maternal deaths.¹ A large proportion of maternal deaths due to hypertensive disorders occur in district hospitals, despite the provision of referral criteria.

It is well known that in South Africa, although pregnant women in the public sector present for initial antenatal care in late pregnancy, many in fact visit general practitioners (GPs) to establish whether they are pregnant following a period of amenorrhoea.² It would appear that many GPs do not take the opportunity to provide advice on antenatal care or to share care with health care facilities in the public sector if pregnancy is confirmed. Some GPs also fail to recognise the seriousness of the symptoms and signs that various disorders elicit in pregnant women seeking emergency health care. This relates particularly to the lack of awareness of the hazards of high blood pressure in pregnancy. The following vignette highlights some of these points and lessons to learn for GPs and medical officers working in district hospitals.

Vignette

A 28-year-old woman, parity 2, who had had a previous Caesarean section for pregnancy-related hypertension, presented to a GP at 33 weeks gestation. This was her first visit to a health care provider during the current pregnancy. The GP found an elevated blood pressure (150/100 mmHg) and prescribed methyldopa. No further advice was provided, as could be ascertained from the GP's referral letter. The patient presented to the same GP a week later. On this occasion the blood pressure was 170/115 mmHg and it was not clear whether the patient had signs and symptoms of imminent eclampsia. The patient was given a referral letter for probable admission to hospital. The patient returned home and a number of hours later had a seizure. Following a delay in obtaining transport, she arrived at a public hospital in extremis and demised within 30 minutes of admission.

Discussion

The lessons to learn from this case are similar to those of a vignette reported in the Saving Mothers Report 2005–2007.¹ Failure to recognise the severity of a condition and to take action when abnormal signs are detected is a problem facing health care professionals in South Africa. In this instance, the GP, having detected an elevated blood pressure at the initial visit, should have referred the patient to a public health care facility for further management of her hypertension. Patients with a previous history of hypertensive disorders of pregnancy are known to have a 20% chance of having early onset pre-eclampsia in subsequent pregnancies.

General practitioners should therefore counsel and refer patients in whom they have detected moderate to severe hypertension in pregnancy to a regional health care facility to receive intensive investigations involving maternal and foetal tests to prevent complications such as eclampsia. The referral criteria for the management of patients with moderate to severe pre-eclampsia (BP \geq 150/100 mmHg) are to direct such patients to either a regional or a tertiary hospital.¹ In this case, the patient had given a history of having had hypertension in her previous pregnancy and required laboratory investigations such as a complete blood count, a serum uric acid levels test, a liver function test and foetal function tests (sonography and electronic foetal monitoring) to assess whether urgent delivery was necessary, even at 33–34 weeks gestational age. There is good evidence that delivery of women with early onset pre-eclampsia and severe proteinuric hypertension results in good perinatal outcomes.^{3,4} Opportunities to contact consultants at public health care facilities should be taken to obtain advice on further management and timing of referral. In this case, it appears that the patient was sent home with antihypertensive drugs. The patient returned to the GP a week later. The GP established severe hypertension and although the patient was referred, it does not appear that she was counselled and informed about the dangers of severe hypertension in pregnancy, nor was the seriousness of blood pressure levels of > 160/110 mmHg in young women recognised.

Hypertension in pregnancy is usually defined as a blood pressure level of > 140 mmHg systolic and \geq 90 mmHg diastolic, taken on two occasions 2–4 hours apart. Severe hypertension is defined as a blood pressure of > 170 mmHg systolic and/or > 110 mmHg diastolic.

Cerebrovascular accidents are the most common causes of maternal deaths associated with pre-eclampsia. Because it is not known how long severe hypertension may be left untreated prior to a cerebral complication occurring, most clinical guidelines indicate that rapid-acting antihypertensive agents be used promptly, aiming for a gradual and sustained lowering of very high blood pressure.⁵ Most GPs may not be able to use rapid-acting antihypertensives in their consulting rooms. They should, however, counsel patients on the likely complications of severe hypertension in pregnancy, and in under-resourced countries such as South Africa, arrangements should even be made to transfer such patients directly from their consulting rooms to a health care facility with the requisite expertise to manage severe pre-eclampsia. GPs should also strongly consider the use of a 10 mg tablet of nifedipine orally for acute lowering of high blood pressure in young pregnant women who have symptoms of nausea, vomiting, persistent headaches and visual disturbances.⁵

A number of rapid-acting antihypertensive agents are available for use in South Africa (see Table I). While many

GPs may not be familiar with the use of rapid-acting antihypertensive agents, there are a number of studies that have shown that nifedipine given in a dose of 5 mg or 10 mg orally is an effective agent in lowering very high blood pressure (see Table I) with minimal maternal and foetal side-effects.⁶

Table I: Acute blood pressure lowering for severe hypertension (systolic \geq 170 mmHg and/or diastolic > 110 mmHg)

Drug	Dose	Route	Onset of action
Labetalol	20–50 mg	IV bolus over 2 min	5 min, repeat after 15–30 min
Nifedipine	5–10 mg capsule 10–20 mg tablet	Oral Oral	10–20 min, repeat after 30 min 30–45 min, repeat after 45 min
Hydralazine	5–10 mg	IV bolus	20 min, repeat after 30 min
Diazoxide	15–45 mg, maximum 300 mg	IV rapid bolus	3–5 min, repeat after 5 min

Health professionals should be aware of reports of impaired placental perfusion resulting in foetal distress associated with excessive or overenthusiastic lowering of high blood pressure. These events are, however, rare and it is suggested that a small amount of fluid (200 ml normal saline) be infused prior to the rapid lowering of high blood pressure. In addition, continuous electronic foetal monitoring should be performed while lowering high blood pressure using rapid-acting agents. Such precautions may not be possible in a GP's consulting room. Therefore, in circumstances in which there may be considerable delay in transfer of a patient to a health care facility, it is better to err on the side of safety and use nifedipine orally to prevent cerebral complications such as eclampsia or a cerebral bleed and obstetrical complications such as abruptio placentae.

Methyldopa is the most common long-acting antihypertensive agent used in pregnancy; it has a variable onset of action and generally takes 24 hours to act. Methyldopa is usually prescribed for mild to moderately severe hypertension in pregnancy in South Africa.

GPs may find themselves faced with women in their reproductive phase of life in a variety of settings. Firstly, they may be faced with a patient who has chronic hypertension and requests advice on pregnancy. In such a setting, it would be advisable to inform women that if they are on angiotensin-inhibiting agents or angiotensin receptor blockade agents, these should be stopped prior to pregnancy because of their known teratogenic effects. Further, diuretics, although not teratogenic, should be stopped because of their negative impact on the increased plasma volume during pregnancy. These antihypertensives should be stopped and preferably methyldopa should be used prior to pregnancy and during the first trimester of pregnancy (see Table II). The intention of treating mild to moderate hypertension is to

Table II: Guidelines for selecting antihypertensive drug treatment in pregnancy

Drug	Dose	Action	Contraindications	Practice points
Methyldopa	250–750 mg tds	Central	Depression	Slow onset of action over 24 hours. Dry mouth, sedation, depression, blurred vision
Clonidine	75–300 µg tds			Withdrawal effect with clonidine
Labetalol	100–400 mg tds	β-blocker with mild α-vasodilator effect	Asthma, chronic airways limitation	Bradycardia, bronchospasm, headache, nausea, scalp tingling which usually resolves within 24–48 hours (labetalol only)
Oxprenolol	20–160 mg tds	β-blocker with ISA	Heart block	
Nifedipine	20 mg bd–60 mg SR bd	Ca channel antagonist	Aortic stenosis	Severe headache associated with flushing, tachycardia peripheral oedema, constipation
Prazosin	0.5–5 mg tds	α-blocker		First-dose effect – orthostatic hypotension
Hydralazine	25–50 mg tds	Vasodilator		Flushing, headache, nausea, lupus-like syndrome

prevent episodes of severe hypertension and allow the safe progression of the pregnancy to a stage at which the foetus is regarded as viable.

General practitioners should also know that there is normally a fall in blood pressure in the second trimester of pregnancy due to hormonal changes. If this fall does not occur in women with chronic hypertension, it usually signifies development of superimposed pre-eclampsia. General practitioners should also be aware of women at risk of developing pre-eclampsia and its complications, namely young and elderly primigravidae and women with a history of pre-eclampsia, chronic hypertension and connective tissue disorders; these patients should be seen more frequently during the antenatal period.

Young women in particular are likely to develop complications of pre-eclampsia if present. It is essential to recognise the early signs of pre-eclampsia such as excessive weight gain in pregnancy, development of oedema for the first time in the third trimester and isolated proteinuria.

General practitioners should also be aware that although pregnancy hypertension is defined as a blood pressure of 140/90 mmHg or greater on two occasions and two to four hours apart, rises in blood pressure of 30 mm systolic and 15 mm over baseline levels or a previous recording in young women may signify the development of pre-eclampsia and therefore require closer observations, laboratory investigations and sonographic examinations.

It is important for GPs to be aware of the fact that women who have been diagnosed with pre-eclampsia or gestational hypertension are at increased risk of subsequent cardiovascular morbidity, including hypertension and coronary heart disease. It is therefore imperative to counsel patients who have had hypertension in pregnancy about the benefits of exercising regularly, avoiding smoking and maintaining a healthy diet.

Conclusions

Hypertensive disorders of pregnancy are a common condition in the South African setting. Almost 12% of

pregnant women have some degree of hypertension. GPs are likely to be faced with such patients in their practices. They should therefore be aware of the complications associated with hypertensive disorders of pregnancy, inform patients of the dangers associated with hypertension, treat acute severe hypertension immediately and refer patients promptly to a level II or III hospital.

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