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Severe Hypertension in Primary Care: A Case Study Highlighting Classification and Management

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Abstract **Case Report**

Severe hypertension when encountered in primary care requires accurate assessment and classification, and a systematic work-through of guidelines, as it determines the need for immediate referral versus following up with a primary care physician. Here we discuss a 35-year-old male presenting with a complaint of general fatigue. On nurse assessment, he was found to have an elevated blood pressure of 195/115 mmHg and he reported no previous history of diagnosed hypertension or any previous treatment for raised blood pressure. On examination, he had no signs of end organ damage. After a brief period of observation, his BP remained above accepted limits for severe hypertension and a short-acting agent was administered. His BP reduced and he was discharged on long-term anti-hypertensive medication with a review with his primary care physician within 1 week.

Keywords: Hypertensive urgency, Hypertensive emergency, Primary care, Severe hypertension, Target organ damage, Captopril.

INTRODUCTION

Severe hypertension is usually defined as a systolic blood pressure of ≥180 mmHg and/or diastolic blood pressure of ≥120 mmHg [1]. In primary care, the physician should be able to further breakdown severe hypertension between hypertensive urgency and hypertensive emergency. In order to this, the physician should take a history and effectively examine the patient, looking for signs of target organ damage. Hypertensive emergencies require urgent emergency department referral and treatment in a secondary-care setting, while those presenting without acute target organ damage can be managed in the primary-care setting. This case illustrates a pragmatic and guideline based abroach on managing a patient with severe hypertension.

CASE REPORT

A 35-year-old male presented to a primary care centre with symptoms of fatigue. He had no medical history and was on no long-term medication. He reported a mild headache a few days prior, but this had settled with over-the-counter analgesia. A history revealed a family history of hypertension.

Investigations:

The initial nurse assessment revealed a blood pressure reading of 195/115 mmHg and he was asked to be seen as a priority. The rest of his vitals were normal. He denied any previous history of hypertension. He had an ECG which showed normal sinus rhythm, but mild left ventricular hypertrophy. A random blood glucose was normal at 5.2 mmol/L and urinalysis was normal.

Examination:

He was assessed for signs of end organ damage as follows:

- Neurological: he denied headache in the preceding 24 hours; he reported no vision changes or seizures. He had no neurological deficits.
- Cardiovascular: he denied chest pain, shortness of breath, syncope and had no history of palpitations.
- ENT: there was no epistaxis reported.
- Renal: the patient denied oliguria or anuria
- Ophthalmological: no papilledema or retinal haemorrhages were found on examination.
- No severe back pain was reported. [The presence of this can point towards possible aortic dissection.]

He was asked to sit in a quiet room for 30 minutes to see if his blood pressure settled, however it remained elevated at 200/110 mmHg. He was treated with Captopril 25mg, aiming for a reduction of around 25%, and followed up again after 30 minutes. His blood pressure had reduced to 160/101 mmHg. He was initiated on long-term hypertensive treatment, given advice on lifestyle changes and advised to follow-up with his primary care physician after one week for review of his blood pressure.

DISCUSSION

This case demonstrates a common but potentially high-risk scenario presenting in primary care: the incidental finding of asymptomatic severe hypertension [i.e. blood pressure of ≥180 mmHg and/or diastolic blood pressure of ≥120 mmHg with no signs of end organ damage], commonly called hypertensive urgency. This is two to three times more common than hypertensive emergency [2] and as such likely be the majority of patients seen in primary care with severe hypertension. The recognition remains paramount to distinguish those needing further input from secondary care urgently, from those who can be followed up in primary care.

However, in the presence of target organ damage, "hypertensive emergency" should be diagnosed, and after stabilising the patient using an ABCD approach, the patient should be referred directly to the Emergency Department via an ambulance for immediate and aggressive treatment [3].

In the case of an absence of end organ damage, and a previous history of hypertension, the patient's hypertensive management should be titrated, strict compliance advice should be given, and follow up in the primary care setting within 1 to 7 days should be organised.

Without end organ damage, and no previous history of hypertension, the patient should be advised to rest in a quiet room for 30 minutes and then the blood pressure rechecked.

A study of 549 patients with severe hypertension who presented to an emergency department showed blood pressure dropped to less than 180/110 mmHg after 30 minutes of quiet rest in 31.9% of the patients [4].

If, however, blood pressure remains high, a short-acting anti-hypertensive medication, e.g. Captopril 25mg should be given [as long as no contraindications] and blood pressure rechecked after 30 mins. Other possible medications include clonidine, labetalol, prazosin, or nitroglycerin 2% topical ointment [3]. Guidelines differ, but the goal should be a reduction of no more than 25% over the first hour [5] in the mean arterial pressure. If the blood pressure is improved, long-term anti-hypertensive treatment should be initiated and followup should be organised in primary care within 1 to 7 days [3].

While guidelines generally do not recommend onwards referral based solely on inadequate response to oral short acting therapy, any signs of evolving end organ damage or limitations in safely managing the patient in primary care should consider a trigger for urgent referral.

CONCLUSION

This case shows the benefit of accurate assessment, following a structured, systematic approach to severe hypertension and – vitally – not omitting screening for signs of end organ injury. This approach avoids unnecessary referral to the Emergency Department, avoids rapid blood pressure reduction, but also recognises when a patient may require IV blood pressure control and further investigations in secondary care on a timely basis.

A recommendation would be to include a printed structured pathway protocol including signs and symptoms of end organ injury in the primary care physician's room as an aid memoire.

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