

# A man who has poor blood pressure control

Commentary by

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**A 60-year-old man has deteriorating blood pressure control. What could be the cause? Should his antihypertensive medication be changed?**

## Case scenario

A 60-year-old man has been on a standard dose of a beta blocker for years. His last three readings, each three months apart, have been 140/90, 170/110 and 160/100 mmHg. He is otherwise well – no heart failure and no asthma, although his cholesterol level is mildly elevated. Should I increase, add to, or alter his antihypertensive agent?

## Commentary

This case scenario of deteriorating blood pressure control is quite a common clinical problem. In this patient, the factors that may be contributing to the change in blood pressure are readily identifiable:

- a 'white coat' effect
- a new secondary cause of hypertension.

## Check compliance, other drugs and lifestyle

Major factors that may contribute to a deterioration in blood pressure control are poor compliance with medication, drug interactions, or lifestyle factors that may be significantly impacting on the patient's blood pressure. Compliance with medication is difficult to assess; however, asking about medication side effects, whether the patient has run out of medication and how often the patient misses doses are potential ways of raising

this issue. Instances of poor compliance may be improved by the use of medications with once daily dosing.

Nonsteroidal anti-inflammatory drugs (NSAIDs) are the most common prescribed medications that antagonise antihypertensive treatment. NSAIDs may cause significant sodium retention, which has the potential to cause deterioration in blood pressure control in patients treated with diuretics, ACE inhibitors or angiotensin II receptor antagonists. When possible, a trial of withdrawing NSAIDs to determine the effect on blood pressure should be considered.

Finally, weight gain can cause significant deterioration in blood pressure control. Strategies to reduce weight may result in improved blood pressure control and less requirement for antihypertensive medications.

## Consider 'white coat' hypertension

It has been estimated that up to one-quarter of patients with apparent resistant hypertension have well controlled hypertension with a superimposed white coat effect. White coat effect arises as a result of an involuntary alerting reaction that occurs during blood pressure measurement.

The most effective way of determining whether a patient has white coat hypertension is to arrange for ambulatory blood pressure monitoring or to use home blood pressure monitoring devices. It is important to recognise that the

accuracy of ambulatory and home blood pressure monitors varies, and this should be taken into account when assessing results obtained from these instruments. Nevertheless, documentation of normal ambulatory blood pressure by a reliable monitor can avoid an unnecessary adjustment of medication in a patient with a white coat effect.

## Look for a secondary cause

If deterioration in blood pressure control is confirmed, then secondary causes of hypertension contributing to the recent deterioration in blood pressure control should be sought. Haematuria or proteinuria on urinalysis may indicate significant renal disease as a cause of resistant hypertension. In the patient with diffuse vascular disease, the possibility of a renal artery stenosis should be considered. Both hyper- and hypothyroidism can result in refractory hypertension.

Primary hyperaldosteronism is a recently recognised common form of secondary or resistant hypertension. This condition can be screened for by measuring plasma renin and aldosterone concentrations. However, many antihypertensive medications influence these measurements, and caution needs to be used in interpreting the results.

## Try a change of medication

Ultimately, if none of the above factors is operating, there will be a need to change medications. Treatment with two or more different classes of medication is more likely to be effective than monotherapy in controlling this patient's blood pressure. The use of diuretics together with beta blockers has a synergistic effect in reducing blood pressure. If the patient has normal renal function, the use of a thiazide diuretic, such as hydrochlorothiazide, would be an appropriate initial choice. Alternative combinations that could be used with a beta blocker include dihydropyridine calcium antagonists, such as nifedipine, amlodipine and felodipine. **MT**

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