

## TRANSLATING GUIDELINES INTO CLINICAL PRACTICE

### Presenter:



**Professor James Ker, Snr**  
Pretoria

# Managing hypertension

## Case study

**Patient:** Mr T, 60 years old

- Sedentary clerical work in office every day
- Past smoker (stopped at least 30 years ago)
- Uses alcohol on occasion
- No illicit drug use
- Has no hobbies

### Family history:

- Father died at age 65 of a stroke
- Mother died at age 80 from heart failure; he does not know what the cause was

### Past medical history:

- Nil of any importance
- The patient came to the doctor because he was worried that he might die early like his father

### Clinical examination:

- His general phenotype: superficially he has central abdominal obesity (metabolic syndrome appearance)

- Vital signs: BP in right arm 145/92mmHg, pulse rate 79/minute, respiratory rate 16/minute, temperature 36.5°C
- Head: no arcus cornea seen, no xanthelasma, no elevated jugular venous pressure
- Heart: apex beat could not be found while lying on the back. S1 normal, S2 normal, no S3 or S4 cardiac murmurs
- Chest: clear
- Abdomen: no overt organomegaly, but liver size clinically is 14cm in the mid-clavicular line (non-tender)
- Neurological system: power and sensory system normal except for a possible reduced vibration sense in the lower limbs. Cerebellar function normal
- Fundoscopy attempted without success

### Clinical problem statement:

- 60-year-old asymptomatic male patient with a slightly elevated BP, as measured in the right arm
- Inability to find the apex beat reduces the certainty that the cardiac size is normal

*This case study was made possible by an unrestricted educational grant from Cipla. The content of the report is independent of the sponsor. The expert participated voluntarily.*

**Cipla**

1. Which clinical test should be done before we consider special tests?

- A. Measure BP in left arm only
- B. Measure BP in both arms only
- C. Measure BP at the wrist
- D. Measure BP in both arms and one leg

**Expert comment**

Measurement of leg BP is to exclude coarctation of the aorta, in which case the BP in the leg will be lower than the arm BP.

A large difference in systolic BP between the two arms may indicate severe atherosclerosis of the proximal aorta.

2. With a provisional diagnosis of hypertension, how can we be certain that he has true hypertension?

- A. Measure the BP once a day for three days
- B. Gold standard confirmation test is a 24-hour ambulatory BP measurement
- C. Home BP should never be undertaken as a confirmatory test
- D. Multiple office measurements, home measurements for a week and 24-hour ambulatory BP are all possibilities for confirmatory tests
- E. B and D
- F. C and D

**Expert comment**

The reason that we must be certain of the diagnosis of hypertension is that the patient can be committed to life-long therapy - unnecessary therapy may be associated with harm and little or no benefit.

3. Which special tests would you now do?

- A. Chest X-ray for cardiac size and electrocardiogram (ECG) for left ventricular hypertrophy
- B. Urea, creatinine and electrolytes, and blood count
- C. Lipogram and blood sugar (including HbA<sub>1c</sub>)
- D. Urine dipstick for proteinuria
- E. All of the above
- F. B, C and D

**Expert comment**

It is important to determine if there is target organ damage as this increases the risk of cardiovascular disease, including stroke, myocardial infarction, heart failure, arrhythmias such as atrial fibrillation and peripheral arterial disease.

The Framingham study has shown that more than 80% of all hypertensive patients have other cardiovascular risk factors that require treatment; tests for detecting these are also necessary. Smoking should be included in the risk evaluation as it increases cardiovascular risk.

**EARN FREE  
CPD POINTS**

Join our CPD community at  
[www.denovomedica.com](http://www.denovomedica.com)  
and start to earn today!

4. Which of the following are important lifestyle changes that may assist in BP control?

- A. High saturated fat intake in the diet
- B. DASH-type diet (rich in whole grains and low-fat foods) which includes salt reduction and increased vegetable and fruit intake
- C. Reduction in all types of fat
- D. Elimination of all types of carbohydrate from the diet
- E. B and C
- F. B and D

**Expert comment**

Trial data show the DASH diet to be of benefit. Salt should be restricted to <5g per day, with increased intake of vegetables and fruit. Despite this, there is still debate on the optimal diet. Recently, it has been shown that an absence of unrefined carbohydrate is associated with an increased mortality rate. There is ongoing debate as to whether red meat consumption should be reduced. Loss of weight will contribute to easier control of BP.

5. Which drug regimen would you prescribe?

- A. Monotherapy, increasing to a maximum dose
- B. Monotherapy with maximum dose to attain BP control within 6-9 months
- C. Combination therapy with an ACE-I plus an ARB
- D. Combination therapy with an ACE-I or ARB plus a CCB

**Expert comment**

A combination of an ACE-I or ARB plus a CCB or diuretic in a single pill should be the first step for all patients with hypertension. For doctors who are hesitant about using combinations, it is prudent to start with low-dose options first and increase the dose if necessary, as these single-pill combinations have different dose options. The single-pill combination has a better control rate, with control being achieved earlier and more easily. Improved adherence and compliance are also associated with single-pill combinations.

It is commonly accepted that control of BP should occur quickly; at least within three months but preferably sooner, as such early control is associated with better event outcomes.

The South African guidelines suggest that monotherapy can be considered in the elderly (>80 years of age) or in frail patients in order to minimise the risk of falls.

6. During therapy and follow-up, when would you consider doing 24-hour ambulatory BP monitoring?

- A. To evaluate the response to the prescribed drug therapy
- B. When the ECG shows left ventricular hypertrophy
- C. When control seems difficult to achieve, especially in obese and diabetic patients with hypertension
- D. To exclude white-coat hypertension
- E. All of the above
- F. A and D only

### Expert comment

Masked hypertension (normal BP in the clinic with elevated BP outside the clinic) commonly presents as left ventricular hypertrophy. This condition is more dangerous than previously thought. White-coat hypertension is common and is associated with elevated BP in the clinic and normal BP outside the clinic. White-coat hypertension can sometimes be the reason for 'pseudo-resistance' and consequent severe symptoms of hypotension when increasing the drug dose or number of agents. The bottom line is that increasingly used 24-hour ambulatory BP monitoring gives a better perspective of what is really going on in patients with hypertension.

### 7. What target BP should we aim for?

- |                                   |   |
|-----------------------------------|---|
| A. <120/75mmHg                    | B. <140/90mmHg for all as a first step        |
| C. As close to 130/80mmHg for all | D. <130/80mmHg for all, including the elderly |
| E. B and C                        | F. B and D                                    |

### Expert comment

BP reduction to <140/90mmHg is of benefit to all patients, including diabetes patients with hypertension.

To further reduce cardiovascular events, aim for as close to 130/80mmHg as possible. The AHA/ACC guidelines recommend <130/80mmHg, but the European and South African guidelines are more pragmatic; for instance, the BP goal in diabetic patients with hypertension still causes much debate.

### 8. What would you do if the BP on a two-drug combination remains above target?

- |  |   |
|--|---|
| A. Add a third drug to end up with three drugs: ACE-I/ARB + CCB + diuretic | B. Add an aldosterone antagonist (aldactone)  |
| C. Start to think of a potential secondary cause for the hypertension      | D. Question whether the patient is compliant? |
| E. All of the above  | F. A and C only                               |

### Expert comment

There are many causes of a poor response to BP treatment that should eventually be considered. This requires a lot of experience with the treatment of hypertension, and referral may be considered.

## EARN FREE CPD POINTS

Are you a member of Southern Africa's leading digital Continuing Professional Development website earning FREE CPD points with access to best practice content?

Only a few clicks and you can register to start earning today

Visit

[www.denovomedica.com](http://www.denovomedica.com)

For all Southern African healthcare professionals

Find us at



DeNovo Medica



@deNovoMedica



### Disclaimer

The views and opinions expressed in the article are those of the presenters and do not necessarily reflect those of the publisher or its sponsor. In all clinical instances, medical practitioners are referred to the product insert documentation as approved by relevant control authorities.

Published by

© 2019 deNovo Medica

Reg: 2012/216456/07

70 Arlington Street, Everglen, Cape Town, 7550  
Tel: (021) 976 0485 | [info@denovomedica.com](mailto:info@denovomedica.com)