

Effective Diagnosis, Treatment, and Monitoring of Hypertension in Primary Care

Facilitator Notes

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Treatment of Hypertension

Content should be adapted with country-specific information prior to use.

Red text denotes places where modification may be required. Guidance on how to adapt the training is provided in the Course Overview.

Facilitators should review all materials prior to the training workshop to ensure they have a full understanding of the session and to determine what hard copy print outs will be required to conduct the exercises.

Overview of session

Participants will apply what they learn about hypertension treatment to the primary health care setting.



EXERCISE 1: CASE SCENARIOS: TREATMENT OF HYPERTENSION

Instructions

- A total of **50** minutes is recommended for this exercise.
- Randomly assign the five case studies to the participants, either as individuals or in groups (page **11-12** of participant guide).
- Invite the participants to spend up to **10** minutes working on each case, reading the details of the case and answering the questions presented.
- Invite the individuals or groups to share their answers with the group, spending about **5–8** minutes on each scenario.

Answers

Case 1

A 55-year-old man has been found to have a BP reading of 172/104.

1. *How should the doctor manage this patient? (Work through your country's protocol.)*

Don't wait for second BP measurement as the diastolic BP is already more than 100. Treat with **5mg amlodipine** and follow up with a BP reading in one month.

2. *He was started on [NUMBER] mg [CALCIUM CHANNEL BLOCKER]. During monthly follow-up, BP continues to be 152/94. How would you manage this patient?*

Since BP is still high at the follow-up visit, ask the patient if he takes his medication every day as prescribed. If the patient adheres to the treatment regimen, double the dose of **amlodipine** to **10 mg** per day and schedule the next visit for one month later.

Case 2

A previously diagnosed patient of hypertension comes to the primary health clinic to see the doctor. He is 70 years old. He asks for [SPECIFIC ACE INHIBITOR] and says he takes it regularly. The doctor measures his BP and finds it is 132/84. However, [SPECIFIC ACE INHIBITOR] is not in the drug protocol of the [COUNTRY/STATE].

1. What should the doctor advise if patient's BP is 132/84?

The patient is taking medication regularly and has BP under control. Check for side effects and check serum creatinine and potassium. This is especially important for people at high risk for renal injury and/or hyperkalaemia, for example, individuals with advanced age, chronic kidney disease (CKD), atherosclerotic cardiovascular disease (ASCVD), or high risk for ASCVD. If no side effects, continue [SPECIFIC ACE INHIBITOR] at the same dose, i.e. no need to change medication according to the protocol. Advise the patient to continue with his treatment plan and to come back for medication **after one month or per the stated policy**. Start a new patient card.

2. What should the doctor advise if patient's BP is 162/102?

The patient is taking medication regularly and BP is not under control. Change medication per the protocol and advise the patient to come back after a month. Start a new patient card.

Case 3

*A previously diagnosed patient with hypertension comes to the primary health clinic to see the doctor. She is 60 years old, a non-smoker and her blood pressure is 152/86. She is on **atenolol 50 mg od**. She does not have any history of heart attack.*

1. What advice should the doctor give?

Check if the patient takes medication regularly, where she is getting her medication from, and whether she has any side effects.

Since the patient's BP is currently not under control, revise her medication. As she has not had a heart attack in the last three years, **discontinue atenolol and prescribe medication per the protocol**. Beta blockers are no longer advised for the treatment of essential hypertension for most patients because other medications (calcium channel blockers, ace inhibitors [ACE-I], angiotensin receptor blockers, and thiazide diuretics) have better cardiovascular outcomes in clinical trials. Start a patient treatment card.

Case 4

A 40-year old patient known to have diabetes comes to the doctor and is found to have a blood pressure of 152/96. She has an old record from four months ago that shows a blood pressure of 144/92. She is not on any treatment.

1. Should any investigations be done for her before starting treatment?

2. What medications should she be started on?

3. What other history should the doctor elicit?

Because this patient has two elevated BP measurements more than one month apart, the diagnosis of hypertension can be established. Start treatment with medication. If this woman has the potential to become pregnant, then use of **amlodipine 5 mg daily** is recommended. Start a patient treatment card. Discuss and encourage healthy lifestyle choices. If available, consider increased lab monitoring (e.g., fasting blood glucose, complete blood count, lipid profile, serum creatinine with eGFR, serum sodium, potassium, calcium, thyroid-stimulating hormone, urinalysis, electrocardiogram).

Case 5

A 65-year-old woman is on **10 mg of amlodipine**. Her BP is 136/87. During the follow-up visit, the doctor examines her ankles to see how her pedal oedema is doing.

1. How should the doctor manage this patient?

Ask her how the oedema is affecting her. If it is not bothering her, reassure her.

If it is bothering her, various strategies include:

- Non-pharmacological interventions: elevation of legs when in a prone position or use of compression stockings
- Dosage adjustments
- Addition of an ARB
- Discontinuation of CCB.



EXERCISE 2:

DISCUSSION: DRUG SELECTION CONSIDERATIONS

Instructions

- A total of **30** minutes is recommended for this exercise.
- Invite participants to discuss the following questions, either as a whole group or in break-out groups:

Answers

How important is the choice of individual drugs in a drug class (i.e., Lisinopril v. Ramipril for ACE-I)?

- Most guideline development groups do not distinguish between specific drugs in a particular class (as there is a lack of high quality data for comparison within same class), which leaves providers some flexibility
- Consider local/regional drug availability and affordability
- Choose specific drugs that have been in successful clinical trials

- Choose once-daily antihypertensive medications to increase adherence compared with twice-daily or multiple-daily dosing

Why are beta blockers not included as a first- or second-line treatment, except for those who just had a heart attack?

- Most major guidelines (including US, UK and Australian guidelines) no longer recommend beta-blockers as first step drug therapy in the absence of a compelling non-BP indication, and relegate them to second-line therapy.
- Atenolol and metoprolol are generally considered to be inadequate as once-a-day treatments
- Atenolol was shown to be ineffective for reduction of CVD events.
- Initiating treatment with beta-blockers leads to modest CVD reduction and has little or no effects on mortality.
- Beta-blockers are inferior to other drugs for the prevention of major cardiovascular disease events, stroke, and renal failure.
- Carvedilol is favoured as a beta-blocker but has not been studied in any major event-based, randomized controlled trial of blood pressure treatment. Other beta blockers have not been extensively studied in hypertension.

What is the risk of hypokalaemia among patients receiving a diuretic?

- 13% of people taking the thiazide-like diuretic chlorthalidone 12–25 mg daily developed hypokalemia in the ALLHAT trial.
- Overall all-cause mortality was no different when compared to individuals taking the calcium channel blocker amlodipine or the ACE-I Lisinopril.
- The authors of a subsequent analysis of hypokalemia in the ALLHAT trial concluded that: "...clinicians should feel reassured that hypokalemia associated with low-to-moderate dose diuretics (12.5–25.0 mg of chlorthalidone a day) affected 13% of patients and was easily remedied ... the cardioprotective actions of diuretic use are unaffected by consequent but treatable alterations in serum potassium."
- When a diuretic is combined with an ACE-I, the risk of hypokalemia is greatly reduced.



EXERCISE 3:

ROLE PLAY EXERCISE: ADHERENCE TO TREATMENT

Instructions

- A total of **10** minutes is recommended for this exercise.
- Invite two volunteers to come up and act out the scenario in front of the group.

Role 1: *A patient who was diagnosed as having hypertension 6 months ago and was initiated on treatment. He/she has no symptoms and has inconsistently taken medication. BP is 150/102.*

Role 2: *A health care provider who needs to elicit the patient's history of taking medication and convince the patient to be consistent.*

Health care provider should cover the following:

- Potential long-term complications of hypertension and their role in cardiovascular diseases
- Importance of treatment and adherence
- Habits for procuring and taking medication (when, use of reminders, where patient keeps medication).