A quick reference guide for hypertension

Definition
Blood pressure sustained above 140/90 after repeated measurement

Classification
- hypertension with no risk factors and no organ damage
- hypertension with risk factors alone
- hypertension with organ damage
- hypertension with risk factors and organ damage

Measurement of blood pressure
Sitting or supine, repeated twice after 3 minutes if initially $\geq 140/90$
Note. Observers require training.

High risk groups
- smokers
- diabetes mellitus
- elderly
- hyperlipidaemia
- previous myocardial infarction
- evidence of organ damage
- family history

Minimum data set for clinical assessment of hypertension

History
- presenting complaints and duration
- previous history of myocardial infarction, stroke, diabetes, renal disease and peripheral vascular disease
- family history of hypertension, myocardial infarction, stroke, diabetes and peripheral vascular disease
- drug history, e.g. use of non-steroidal anti-inflammatory drugs, oral contraceptives, corticosteroids
- previous therapies/previous adverse reactions to drugs
- risk behaviour, such as smoking

Physical examination
- to look for signs of secondary hypertension such as:
  - Cushing syndrome
  - polycystic kidney
  - renal artery stenosis
  - phaeochromocytoma
  - coarctation
  - yes/no
  - yes/no
  - yes/no
  - yes/no
- to look for signs of organ damage such as:
  - left ventricular hypertrophy and failure
    (displaced apical impulse, gallop, rales)
  - retinal changes
  - peripheral pulses reduced
  - peripheral pulses synchronous
  - cerebrovascular disease
  - yes/no
  - yes/no
  - yes/no
  - yes/no
Laboratory tests
- urine analysis
- blood glucose
- ECG (SV_{1}+RV_{4} or RV_{6})
- serum creatinine or blood urea nitrogen
- haematocrit
- serum potassium and sodium
- serum cholesterol

Target blood pressure
To achieve the maximum tolerated reduction in blood pressure ≤140/90

Management
Nonpharmacological
- reduce fat intake
- reduce salt (do not add)
- take regular dynamic exercise (e.g. walking)
- reduce weight (if obese)
- reduce alcohol
- avoid tobacco

Pharmacological
- diuretic or β-blockers as first line unless contraindicated
- ACE inhibitors especially in diabetes with incipient nephropathy
- calcium channel blockers, α-blockers
- others
Note. The choice of drug is influenced by associated disease, risk factors or organ damage.

Education
Public
- raising awareness
- change in attitudes and lifestyle

People with hypertension
- compliance with regimen
Note. Adequate time should be given to each patient during consultation

Doctors and nurses (including continuing education)
- blood pressure measurement
- levels of hypertension to treat

Indicators (audit)
- % ≥140/90 on treatment, ≥160/100, ≥180/110, ≥200/120
- % with complete data set
- % team trained in blood pressure measurement
- % lost to follow up
- % with complete medical records

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A simplified scheme for management of hypertension

Key
BP: blood pressure
CV: cardiovascular
DBP: diastolic blood pressure
SBP: systolic blood pressure

High BP: DBP ≥90 and/or SBP ≥140 mmHg

Repeated measurements

Hypertension confirmed

General assessment and evaluation of CV risk and nonpharmacological therapy for 4 weeks*

BP <140/90

SBP 140–180 mmHg
DBP 90–105 mmHg

Low CV risk

Reinforce nonpharmacological therapy for 3–6 months

DBP 90–95 mmHg
SBP 140–160 mmHg

Follow up

Start drug therapy

High CV risk

DBP ≥95 mmHg
SBP ≥160 mmHg

Follow up

Start drug therapy

Check again in six months

Important. Patients with diastolic pressures of 105 mmHg or over and/or systolic pressures of 180 mmHg or over should be referred for immediate evaluation. Drug therapy should not be delayed in patients with target organ damage or those with high risk.

* The period of 4 weeks can be extended if a significant response is shown.
## Guidelines for selecting first-line drugs for hypertension

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<sup>a</sup> Because of reduced plasma volume.
<sup>b</sup> Grade II and III atrioventricular block.
<sup>c</sup> Verapamil should be avoided or used only with great caution.
<sup>d</sup> Verapamil and diltiazem should be avoided or used only with great caution.