NHS

DERBYSHIRE JOINT AREA PRESCRIBING COMMITTEE
(JAPC)

Management of Hypertension using ABPM

Based on NICE NG136 Hypertension in adults: diagnosis and management (2019).

- Ambulatory Blood Pressure Monitoring (ABPM) is the preferred method of diagnosis because of its accuracy. If ABPM is unsuitable or the person is unable to tolerate it, offer home blood pressure monitoring (HBPM) to confirm the diagnosis of hypertension.

- Offer lifestyle advice to people with suspected or diagnosed hypertension, and continue to offer it periodically (Healthy diet, exercise, reduce alcohol, caffeine, salt consumption, stop smoking).

- Offer antihypertensive drug treatment to adults of any age with persistent stage 2 hypertension (ABPM 150/95 mmHg or more). Use clinical judgement for people of any age with frailty or multimorbidity

- Discuss starting antihypertensive drug treatment with adults aged under 80 with persistent stage 1 hypertension (ABPM 135/85-149/94) who have any of the following:
  - Target organ damage*
  - Established cardiovascular disease
  - Renal disease
  - Diabetes
  - **An estimated 10-year risk of cardiovascular disease of 10% or more**

  *Damage to organs such as the heart, brain, kidneys and eyes. Examples are left ventricular hypertrophy, chronic kidney disease, hypertensive retinopathy or increased urine albumin:creatinine ratio.

- *Conside*r antihypertensive drug treatment for adults aged under 60 with stage 1 hypertension and an estimated 10-year risk below 10%. Bear in mind that 10-year cardiovascular risk may underestimate the lifetime probability of developing cardiovascular disease.

- Offer treatment with an angiotensin-converting enzyme (ACE) inhibitor (or an angiotensin II inhibitors (ARB) if ACE not tolerated e.g. due to cough) to people who
  - Have type 2 diabetes (any age or family origin)
  - Are aged under 55 but not of black African or African-Caribbean family origin.

- When choosing antihypertensive drug treatment for adults of black African or African–Caribbean family origin, consider an angiotensin II receptor blocker (ARB), in preference to an angiotensin-converting enzyme (ACE) inhibitor.

- Offer treatment with a calcium-channel blocker (CCB) to people who are
  - aged over 55 years and do not have type 2 diabetes
  - black African or African-Caribbean family origin and do not have type 2 diabetes

- If a CCB is not suitable, for example because of oedema or intolerance, or if there is evidence of heart failure or a high risk of heart failure, offer a thiazide-like diuretic.

- JAPC have classified Bendroflumethiazide as first line thiazide diuretic for use in the management of hypertension and the thiazide-like diuretics as second line based on cost.

- For people who have both hypertension and cardiovascular disease follow the recommendations for disease-specific indications in the NICE guideline on their condition (e.g., prescribe an ACE inhibitor or an ARB for secondary prevention of myocardial infarction). If their blood pressure remains uncontrolled, offer antihypertensive drug treatment in line with the recommendations in this guideline.
- **ACE inhibitors and ARB use in women who are planning pregnancy should be avoided**

unless absolutely necessary MHRA May 2009. Management of hypertension in pregnancy (and breastfeeding) is covered in NICE NG133 Hypertension in pregnancy. Antihypertensive drug treatment to women of child-bearing potential should be offered as per consultant/specialist advice.

- Do not combine an angiotensin-converting enzyme (ACE) inhibitor with an angiotensin II receptor blocker (ARB). MHRA June 2014

- For patients taking spironolactone particular caution is advised in people with a reduced glomerular filtration rate as they are at increased risk of hyperkalaemia. Only start if potassium level ≤4.5mmol/l and monitor renal function (including sodium and potassium) closely.

Practical advice on measuring BP

- Measure BP in both arms- If the difference in readings between arms is repeatedly more than 15 mmHg, measure subsequent BP in the arm with the higher reading.

- Measure both standing and seated BP in people at higher risk of postural hypotension- type 2 diabetes, or symptoms of postural hypotension, or aged 80 and over.

- In people with a significant postural drop (>20mmHg difference on standing for 1 min) or symptoms of postural hypotension (falls or postural dizziness), treat to a BP target based on standing blood pressure.

Referral

- If blood pressure remains uncontrolled with optimal or maximum tolerated doses of four drugs, seek expert advice if it has not yet been obtained.

- Refer for same day specialist assessment if they have:
  - a clinic blood pressure of 180/120 mmHg and higher with: signs of retinal haemorrhage or papilloedema (accelerated hypertension) or life-threatening symptoms such as new onset confusion, chest pain, signs of heart failure, or acute kidney injury.
  - suspected phaeochromocytoma (for example, labile or postural hypotension, headache, palpitations, pallor, abdominal pain or diaphoresis).

Groups not covered in this guideline

- People with CKD – NICE NG203 (2021); see CV formulary
- People with type 1 diabetes- NICE NG17
- Children and young people (younger than 18 years) – as per consultant advice
- women considering pregnancy or who are pregnant or breastfeeding – NICE NG133; as per consultant/specialist advice
- Secondary causes of hypertension (e.g. Conn's adenoma, phaeochromocytoma and renovascular hypertension) – as per consultant advice

Resources

- NICE patient decision aid
- Q-intervention (shows how risk could change with interventions)

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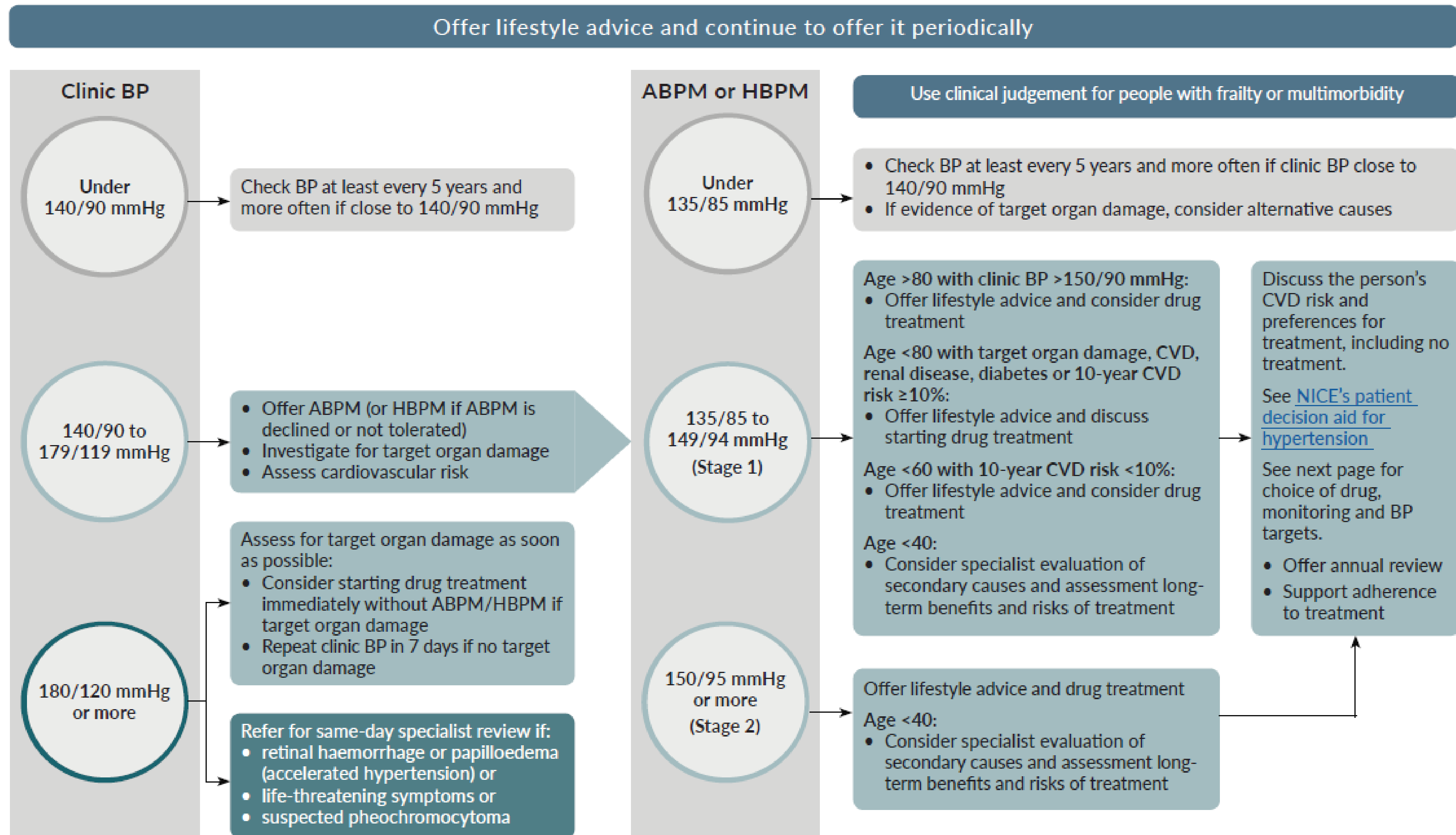
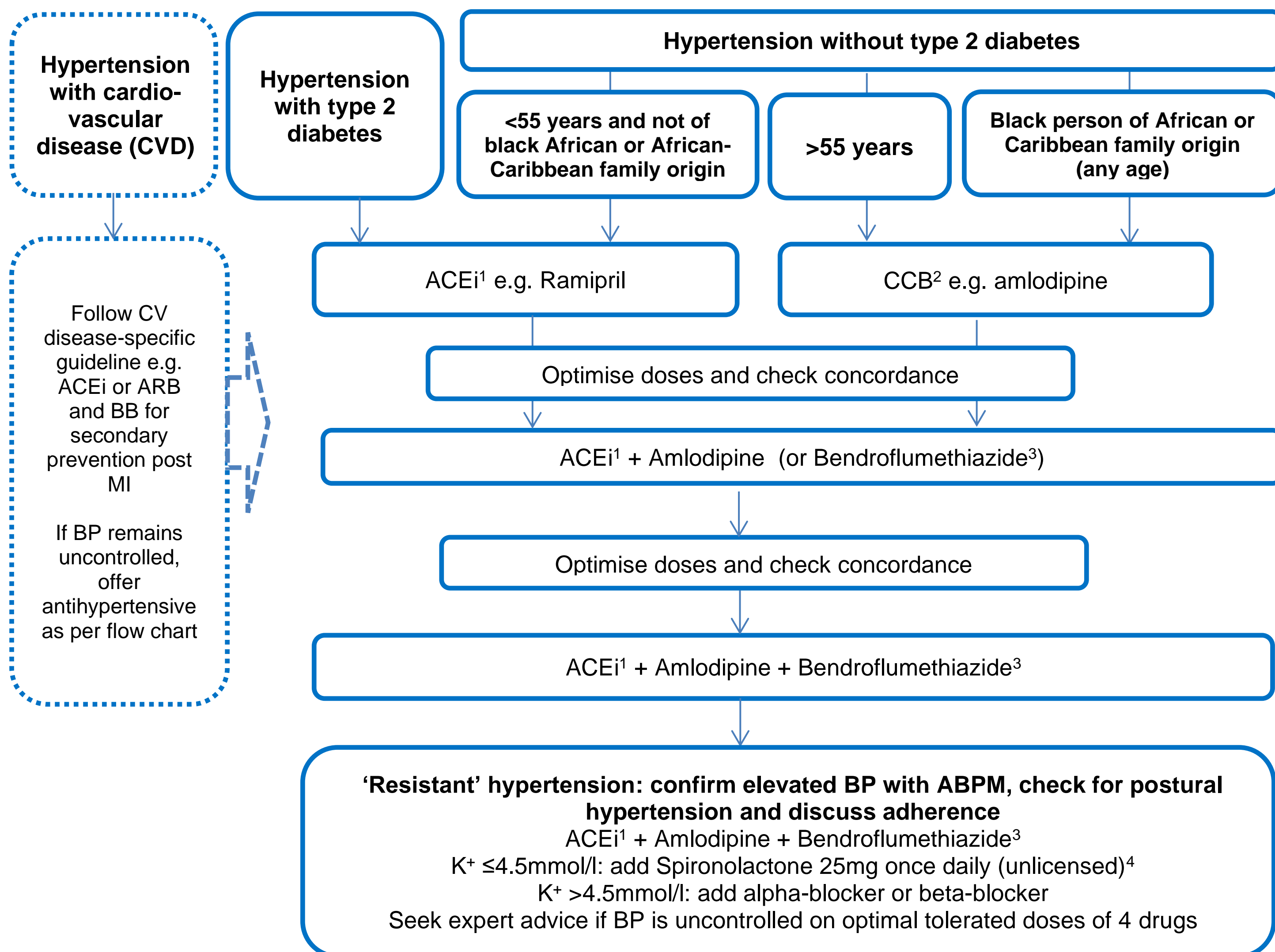
Document Update	Date updated

Diagnosis of hypertension



Antihypertensive drug treatment



'Resistant' hypertension: confirm elevated BP with ABPM, check for postural hypertension and discuss adherence
ACEi[1] + Amlodipine + Bendroflumethiazide[3]
K^+ ≤4.5mmol/l: add Spironolactone 25mg once daily (unlicensed)[4]
K^+ >4.5mmol/l: add alpha-blocker or beta-blocker
Seek expert advice if BP is uncontrolled on optimal tolerated doses of 4 drugs

1. Or ARB e.g. losartan, if intolerant to ACE e.g. due to cough; or if adults of black African or African–Caribbean family origin.
2. Or thiazide diuretic bendroflumethiazide if a CCB is not suitable, e.g. oedema or intolerance; or if there is evidence of heart failure or a high risk of heart failure.
3. Thiazide-like diuretics are 2nd line options after bendroflumethiazide. Indapamide 2.5mg and modified release have been classified as GREY.
4. Monitor blood sodium and potassium and renal function within 1 month of starting treatment and repeat as needed thereafter.
5. For people who have both hypertension and cardiovascular disease- follow the CV disease recommendation. (e.g., prescribe an ACEi or an ARB for secondary prevention of MI). If BP remains uncontrolled, offer antihypertensive drug treatment in line with hypertension guideline.

Blood pressure targets on treatment
(including those with hypertension and CVD)

Clinic blood pressure-
reduce and maintain below

- People aged under 80 years: 140/90mmHg
- People aged 80 years and over: 150/90mmHg

Daytime home readings (or ABPM) – where white coat hypertension (>20/10mmHg difference at home)
reduce and maintain below

- People aged under 80 years: 135/85mmHg
- People aged 80 years and over: 145/85mmHg

Monitoring treatment

Use clinic BP to monitor treatment.

Measure standing and sitting BP in people with:

- type 2 diabetes **or**
- symptoms of postural hypotension **or**
- aged 80 and over.

Advise people who want to self-monitor to use HBPM. Consider ABPM or HBPM, in addition to clinic BP, for people with white-coat effect or masked hypertension.