DIABETES AND HYPERTENSION

BACKGROUND

- Hypertension is twice as common among people with diabetes as in the general population.
- People with hypertension and diabetes are at significantly increased risk of developing coronary heart disease, congestive heart failure and stroke compared with the general population.
- According to the National Diabetes Audit 2017/18, 25% of people with type 1 diabetes and 26% of those with type 2 diabetes (T2D) did not attain the NICE blood pressure (BP) target (≥140/80 mmHg).

BLOOD PRESSURE: MEASUREMENT AND TARGETS

- NICE's standard definition of hypertension is BP ≥140/90 mmHg.
- If clinic BP is between 140/90 mmHg and 180/120 mmHg, offer ambulatory BP monitoring (ABPM) to confirm the diagnosis of hypertension.
 - > If ABPM is unsuitable or not tolerated, offer home BP monitoring (HBPM).
- Whilst awaiting confirmation of a diagnosis of hypertension:
 - Undertake investigations for target organ damage: urinary albumin:creatinine ratio (ACR), bloods for HbA_{1c}, urea and electrolytes (U&Es), total cholesterol and HDL cholesterol, and fundoscopy, and arrange for an ECG.
 - > Assess CV risk using a CV risk assessment tool such as QRISK3-2018 (https://grisk.org/three/).
- Confirm a diagnosis of hypertension in people with a clinic BP of 140/90 and ABPM daytime average or HBPM average of 135/85 mmHg or higher.
- Measure standing as well as seated BP in people with hypertension and with type 2 diabetes. In those with a significant postural drop in BP, treat to a BP target based on standing BP.

Stage 1 hypertension: Clinic BP 140/90-159/99 mmHg and subsequent ABPM daytime average or HBPM average BP 135/85 Stage 2 hypertension: Clinic BP \geq 160/100 mmHg but <180/120 mmHg and subsequent ABPM daytime average or HBPM average BP \geq 150/95 mmHg

Stage 3 hypertension or severe hypertension: Clinic systolic BP ≥180 mmHg or clinic diastolic BP ≥120 mmHq

Damage to organs such as the heart, brain, kidneys and eyes (eg left ventricular bypertrophy chronic kidney

Target organ damage:

and eyes (eg left ventricular hypertrophy, chronic kidney disease [CKD], hypertensive retinopathy and increased urinary ACR)

- The "white-coat effect" is where there is a discrepancy ≥20/10 mmHg between clinic and average daytime ABPM or HBPM at the time of diagnosis.
- NICE recommend reducing clinic BP to below 140/90 mmHg or ABPM or HBPM daytime average <135/85 mmHg and maintaining that level in adults with hypertension and diabetes aged under 80 years.
 -) If there is diabetes and co-existing CKD, aim for a clinic BP <130/80 mmHg.

REINFORCE LIFESTYLE ADVICE AT ALL STAGES

- Offer all patients, including those taking antihypertensives, advice about:
 - > Physical activity and weight management.
 - > Alcohol consumption.
 - > Diet (eg DASH; see resources) and salt intake.
- Caffeine intake
- > Smoking cessation advice.
- > Initiatives to support lifestyle change; eg health trainer,

STARTING ANTIHYPERTENSIVE DRUG TREATMENT

- If lifestyle changes do not reduce BP adequately, introduce antihypertensives following a step-wise approach.
- Discuss starting antihypertensive drug treatment, in addition to lifestyle advice, with adults aged <80 years with persistent stage 1 hypertension who have one or more of the following:
 - > Target organ damage
 - > Established CVD
 - > Renal disease
 - Diabetes
 - > Estimated 10-year risk of CVD ≥10%
- Offer antihypertensive drug treatment in addition to lifestyle advice to adults of any age with persistent stage 2 hypertension
- Use clinical judgement for people of any age with frailty or multimorbidity

Step 1 treatment:

Offer an angiotensin converting enzyme (ACE) inhibitor, or if not tolerated, an ARB to adults with T2D irrespective of age or ethnic background

Step 2 treatment:

Offer a CCB or thiazide-like diuretic (eg indapamide)

Step 3 treatment:

Offer a combination of an ACE inhibitor or ARB **and** a CCB **and** a thiazide-like diuretic (eg indapamide)

Step 4 treatment:

If hypertension is not controlled in adults taking optimal tolerated doses of the above, regard them as having resistant hypertension

- Do not combine an ACE inhibitor with an ARB to treat hypertension
- Discuss with the person if they are taking their medicine as prescribed and support adherence

- Before considering further treatment:
- > Confirm elevated clinic BP readings with ABPM or HBPM readings.
- Assess for postural hypotension.Discuss adherence.
- Consider further diuretic therapy with low-dose spironolactone in patients who have blood potassium levels ≤4.5 mmol/L. Monitor U&Es and use with caution in those with CKD.
- Consider an alpha-blocker (eg doxazosin) or beta-blocker (eg bisoprolol) for those with blood potassium levels ≥4.5 mmol/L.
- if BP remains uncontrolled on optimal tolerated doses of four drugs, seek specialist advice.

MONITORING

- Use clinic blood pressure measurements to monitor the response to lifestyle changes or drug treatment in people with hypertension.
 - > Advise people with hypertension who choose to self-monitor their blood pressure to use HBPM.
 - > Be aware that the corresponding measurements for HBPM are 5 mmHg lower than for clinic measurements.

RESOURCES

- NICE NG136 Hypertension in adults: diagnosis and management (published August 2019).

 Available at: https://www.nice.org.uk/guidance/ng136/chapter/Recommendations#diagnosing-hypertension
- British and Irish Hypertension Society www.bihsoc.org
- DASH eating plan www.nhlbi.nih.gov/health-topics/dash-eating-plan
- Diabetes UK Information Prescription www.diabetes.org.uk/professionals/ resources/resources-to-improve-your-clinical-practice/information-prescriptions-qa
- GPnotebook Shortcut "Lifestyle Modifications to Manage Hypertension" www.gpnotebookeducation.com/GPnotebook-Shortcuts



Primary Care Diabetes Society

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