

# Hypertension Protocol

Rosmellyn Surgery 2006

## AIM

- Detect hypertension through thorough screening of all at-risk groups
- To adequately treat hypertension, with as few side effects as possible
- To reduce the incidence of cardiovascular events and target organ damage.

## METHOD

### Definition<sup>1</sup>

	<i>Systolic BP</i>	<i>Diastolic BP</i>
High normal	135-139	85-89
<b>Mild</b>	<b>140 – 159</b>	<b>90-99</b>
<b>Moderate</b>	<b>160-179</b>	<b>100-109</b>
<b>Severe</b>	<b>180 -</b>	<b>110 -</b>

The above values are for readings taken in the surgery.

If using ambulatory BP readings (*see below*) then mean daytime pressures are preferred. This value would be expected to be approximately 10/5 mm Hg lower than the surgery BP equivalent for both thresholds and targets.

Similar adjustments are recommended for averages of home blood pressure readings.

Systolic hypertension is as important as diastolic hypertension as a predictor of cardiovascular disease. Hypertension is present if either or both of systolic and diastolic pressures are elevated.

For mild hypertension diagnosis should be based on at least 3 sets of measurements over a period of 2-3 months.

Patients with moderate or severe hypertension, patients with an elevated baseline cardiovascular risk (>15%), or those with evidence of end organ damage, may require more rapid evaluation and initiation of treatment.

BP measurements should be recorded on F8 screen to enable identification and recall of those without recent measurements.

## Who to Screen

All patients over the age of 40 should have their BP checked every 5 years up to the age of 80 or more. Those with high normal readings should have their blood pressure measured annually.

- Opportunistic screening of patients over 40 yo without a BP measurement within the last 5 years.
- Screening at flu vaccination clinics.

Patients with known CHD, diabetes, hypertension or target organ damage should have their BP measured at least annually.

- This should usually be achieved within our chronic disease management recall system.
- Those who have been missed may be identified at annual drug reviews.

## **INVESTIGATIONS AT DIAGNOSIS<sup>1</sup>**

- **Urine strip test** for protein and blood
- **Serum creatinine, electrolytes and eGFR**  
**Blood glucose** – ideally fasted  
**Blood lipid profile** – ideally fasted for consideration of triglycerides
- **ECG**
- **Relevant history and physical examination** looking for evidence of risk factors and target organ damage:  
Lifestyle – BMI, diet, salt intake, smoking, exercise  
PMH – diabetes, renal or cardiovascular disease, dyslipidaemia  
Drug therapy (eg NSAID, sympathomimetics)  
Rare causes of hypertension (Cushing's, coarctation, etc)  
Evidence of LVF, PVD, retinal changes
- 10 year CVD risk assessment

## **TREATMENT**

### **Lifestyle Measures:**

Should be offered to all patients with hypertension or high normal BP

- Smoking Cessation
- Maintain normal weight for adults (BMI 20-25)
- Reduce salt intake to <6g / day
- Limit daily alcohol to 3 units (men) / 2 units (women)
- Engage in regular aerobic physical exercise, >30 mins, at least 3 times a week, ideally most days
- Consume at least 5 portions/day of fresh fruit and vegetables
- Reduce the intake of total and saturated fat

Explain reasons for treatment, plans for follow-up and answer any other questions.

### **Pharmacological Treatment**

1. *SBP > 180* and/or  
*DBP > 110*

Confirm over 1-2 weeks then commence drug therapy.

2. *SBP > 160* and/or  
*DBP > 100*

If cardiovascular complications, target organ damage, or diabetes is present, confirm over 3-4 weeks, then treat.

Otherwise confirm over 2-3 months prior to commencing therapy.

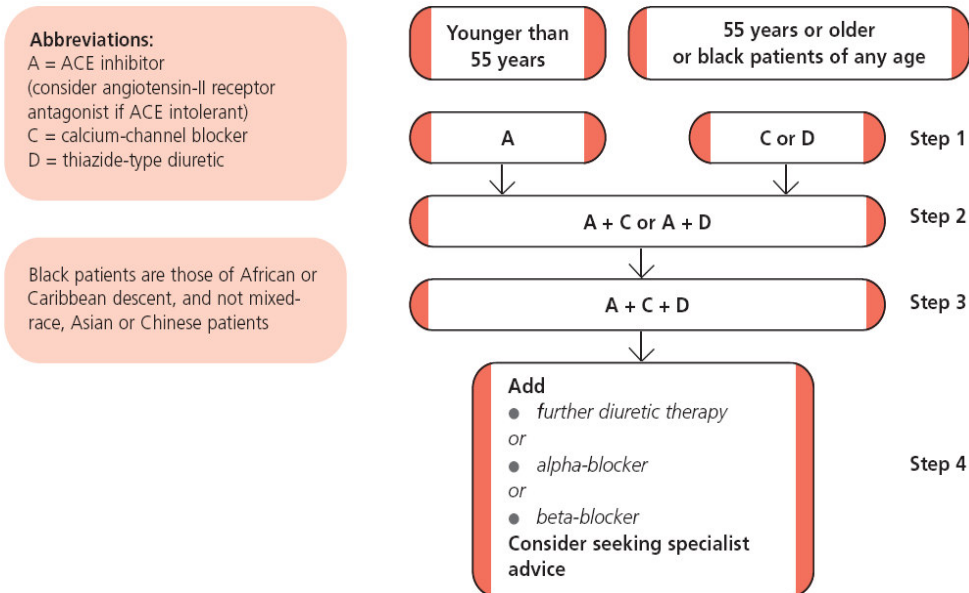
3. *SBP > 140* and/or  
*DBP > 90*

If cardiovascular complications, target organ damage, or diabetes is present, or if 10 yr cardiovascular risk is estimated >20%; confirm over 12 weeks, then treat.

Otherwise reassess annually.

## Choice of Drug

### Choosing drugs for patients newly diagnosed with hypertension



### Beta-blockers

- Beta-blockers are no longer preferred as a routine initial therapy for hypertension.
- But consider them for younger people, particularly:
  - women of childbearing potential
  - patients with evidence of increased sympathetic drive
  - patients with intolerance of or contraindications to ACE inhibitors and angiotensin-II receptor antagonists.
- If a patient taking a beta-blocker needs a second drug, add a calcium-channel blocker rather than a thiazide-type diuretic, to reduce the patient's risk of developing diabetes.
- If a patient's blood pressure is not controlled by a regimen that includes a beta-blocker (that is, it is still above 140/90 mmHg), change their treatment by following the flow chart above.
- If a patient's blood pressure is well controlled (that is, 140/90 mmHg or less) by a regimen that includes a beta-blocker, consider long-term management at their routine review. There is no absolute need to replace the beta-blocker in this case.
- When withdrawing a beta-blocker, step down the dose gradually.
- Beta-blockers should not usually be withdrawn if a patient has a compelling indication for being treated with one, such as symptomatic angina or a previous myocardial infarction.



## Target BP levels for treatment

		<i>Optimal</i>	<i>Audit standard</i>
Diabetes	)		
Renal Impairment	)	<130/80	<140/80
Established CVD	)		
No diabetes/renal/CVD	)	<140/85	< 150/90

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## Adjunctive Therapy:

*Aspirin: recommended where there is*

- a. Diabetes
- b. Established CVD (secondary prevention)
- c. >50 yo and 10yr CVD risk > 20%

*Statins: recommended in those with:*

- a. Established CVD, irrespective of baseline total cholesterol or LDL-cholesterol
- b. Aged 40 or older with CVD risk >20%

## **Follow-Up**

- See 2-4 weeks after commencement of drug therapy.  
Review again in 6-8 weeks.
- Once control is established patients should be seen 6-monthly for BP check and annually for full review.
- Check U&E's 2 weeks after initiating or increasing the dose of an ACE inhibitor.

At annual review:

- Reinforce non-pharmacological advice
- Bloods:
  - U&E/creatinine/eGFR
  - Lipid Profile
  - Glucose
  - Urinalysis for protein & blood

## **Preferred Coding**

Essential Hypertension	<b>G20%</b>
Secondary Hypertension	<b>G24</b>
Hypertension resolved	<b>21261</b>

## **Ambulatory BP Measurement (ABPM)**

ABPM provides more information than either home or clinic measurements e.g. 24-hour profile with mean daytime values, night-time values and BP variability.

Evidence suggests that readings made by doctors in clinics are higher than those done under ambulatory conditions<sup>2</sup>.

20% of patients are thought to suffer from "white coat" effect.

Ambulatory monitoring of blood pressure (AMBP) has been shown to be a better predictor of adverse outcome and response to treatment than conventional measurement alone<sup>2,3</sup>.

However, there are no outcome trials however based on ABPM values<sup>4</sup>

Guidelines do not currently recommend the use of AMBP for all patients. It is thought it may be most useful in the following circumstances:

- if there is unusual variability of clinic blood pressure measurements
- if there are symptoms suggestive of hypotension
- to aid the diagnosis of 'white coat hypertension'
- informing equivocal treatment decisions
- evaluation of nocturnal hypertension
- evaluation of drug resistant hypertension
- determining the efficacy of drug treatment over 24 hours
- diagnosis and treatment of hypertension in pregnancy

## **REFERENCES**

1. British Hypertension Society guidelines for Hypertension Management 2004 (BHS-IV). *BMJ* 2004 328:634
2. Little et al. Comparison of agreement between different measures of blood pressure in primary care and daytime ambulatory blood pressure. *BMJ* 2002 325:254
3. Systolic Hypertension in Europe (SYST-EUR) trial
4. Williams B, Poulter NR, Brown MJ, Davis M, McInnes GT, Potter JF, et al. Guidelines for management of hypertension: report of the fourth working party of the British Hypertension Society, 2004—BHS IV. *J Hum Hypertens* 2004;18: 139-85