

HYPERTENSION: WHAT SHOULD AND SHOULD NOT BE DONE

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Hypertension is defined as an abnormal elevation of blood pressure. It can be primary (idiopathic) 90-95% or secondary 5-10%. Diagnosis of hypertension is based on 2 or more separate readings of BP > 140/90. The patient should be properly rested for at least 5 minutes and there is to be no cigarettes or consumption of caffeine 30 minutes prior to taking a reading. Although such conditions are ideal, they can never be fulfilled in practice. In our present healthcare system, there are many queues the patient has to queue up for before they get to see the doctor and ultimately collect their medication. Such a system can only frustrate the patient and increase their blood pressure. Sequential studies have shown that blood pressure drops by an average of 10 to 15 mmHg between the first and third visits in newly diagnosed patients, with a stable value not being achieved until after more than six visits in some cases. Thus, many patients who are considered to be hypertensive at the initial visit are in fact normotensive. If the blood pressure is taken at home, multiple measurements should also be obtained. At least two measurements in the morning and evening should be performed over a period of at least three days.

The New JNC VI classification of hypertension now defines the optimal BP as less than 120/80.

Category	Systolic BP	Diastolic BP
Normal	< 120	<80
High Normal	120-139	80-89
Stage I (Mild)	140-159	99-99
Stage II (Moderate)	160-179	100-109
Stage III (Severe)	> 180	> 110

- There are 4 goals at the initial evaluation.
- Is secondary cause of hypertension present?
- Is there target organ damage?
- Are there additional cardiovascular risk factors that are present?
- Is there a need for urgent treatment?

Patients are asymptomatic early in the disease until much later when symptoms and signs related to target organ damage and underlying etiology begin to appear.

Target Organ Damage

- κ Retinal damage – flame hemorrhages, hard exudates, papilloedema (late stage), A-V nipping, silver wiring.
- κ Heart Failure – lung crackles, gallop S4, displaced apex
- κ Renal – proteinurea, insufficiency, pallor

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- κ Accelerated atherosclerotic disease – bruits, aortic aneurysm-palpable pulsatile abdominal mass, non-palpable peripheral pulses.
- κ Coronary Artery Disease- angina
- κ Stroke
- κ AMI

Underlying Etiology

- κ Cushing – moon faces. Striae, abnormal distribution of fat
- κ Renal artery stenosis – abdominal systolic bruit
- κ Coarctation of aorta – disparity between left and right BP and delay femoral pulse
- κ Chronic renal failure – shallow, pallor, bruising, and pruritus stretch marks etc.
- κ Polycystic Kidneys – bilateral balotable large kidneys
- κ Primary aldosteronism – progressive nocturia and weakness
- κ Pheochromocytoma – paroxysmal hypertension with headache, pallor, sweating, palpitations.
- κ Acromegaly
- κ Renal transplant – abdominal scar, pelvic kidney
- κ Pregnancy
- κ Signs of alcohol abuse

It must be stressed that the underlying conditions are rare. In most populations, the commonest cause is glomerulonephritis. Certain group of patients are at a significantly higher risk of having secondary hypertension. They are patients who:

1. are young at onset (below 40 years of age)
2. have severe degrees of high blood pressure (DBP>120)
3. have hypertension resistant to treatment
4. have hypertension of sudden onset
5. have signs of other disease
6. have low serum potassium level
7. have attacks of palpitations and blanching
8. have cushingoid features

It is important to look for target organ damage and modify concurrent risk factors for accelerated atherosclerosis during evaluation of a hypertensive patient. It will help in deciding the type of medication used to lower the patient's BP. (Table I)

HOW MANY MEDICATIONS TO USE? (Fig 1)

Numerous trials have shown that it may take more than one combination of medication to bring the blood pressure down to target levels as indicated above. Many doctors are faced with the problem of being afraid to add on two or more medication when faced with the problem of resistant hypertension. This problem is worsened when some institutional guidelines state that a cardiologist's evaluation is necessary when more than 3 drugs are required to control the patient's blood pressure.

Table 1

Drug	Indication	Possible Contraindication	Contraindication	Possible Contraindication
Diuretics	<ul style="list-style-type: none"> o Heart failure o Elderly o Systolic hypertension 	Gout		<ul style="list-style-type: none"> o Dyslipidaemia o Sexually active men
Beta-blockers	<ul style="list-style-type: none"> o Angina o After MI o Tachyarrhythmias 	<ul style="list-style-type: none"> o Heart Failure o Pregnancy o Diabetes o Peripheral vascular 	<ul style="list-style-type: none"> o Asthma o COPD o Heart block 	<ul style="list-style-type: none"> o Dyslipidaemia o Athletes o Physically active patients disease
ACE inhibitors	<ul style="list-style-type: none"> o Heart failure o Left ventricular dysfunction o AMI o Diabetic nephropathy 	<ul style="list-style-type: none"> o Pregnancy o Hyperkalaemia o Bilateral renal artery stenosis 		
Calcium antagonist	<ul style="list-style-type: none"> o Angina 	<ul style="list-style-type: none"> o Peripheral vascular disease 	<ul style="list-style-type: none"> o Heart block 	<ul style="list-style-type: none"> o CCF
Alpha-blockers	<ul style="list-style-type: none"> o Elderly o Systolic HPT o BPH 	<ul style="list-style-type: none"> o Glucose intolerance 		<ul style="list-style-type: none"> o Orthostatic hypotension
Angiotensin II antagonist	<ul style="list-style-type: none"> o ACE-induced cough 	<ul style="list-style-type: none"> o Heart failure o Pregnancy o Bilateral renal artery stenosis 	<ul style="list-style-type: none"> o Dyslipidaemia 	<ul style="list-style-type: none"> o Hyperkalaemia

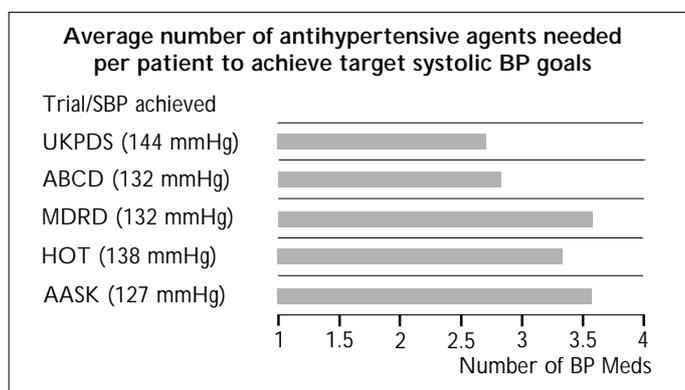


Figure 1

SOME THINGS WE SHOULD STOP DOING

The Women’s Health Initiative (WHI)

In this large-scale, randomized, controlled clinical trial, 16,608 menopausal women who were aged between 50-79 years and who had an intact uterus at the time of enrolment were randomized to receive either HRT in the form of 0.625 mg conjugated equine estrogens and 2.5 mg medroxyprogesterone acetate (*Prempro*) or placebo. Use of study medication (active or placebo) in this component of the trial was halted after 5.2 years, because researchers found that the therapy’s risks outweighed its benefits. Compared to the placebo users, those assigned to the combination HRT group experienced more strokes, heart attacks, blood clots, and an increased risk of invasive breast cancer. Although the HRT users also experienced a reduced risk of colorectal cancer and fractures (including hip fractures), overall, the observed risks outweighed these benefits.

HRT should not be given solely to prevent cardiovascular events. Women taking HRT for this purpose alone should stop.

Women considering HRT for short-term (1-2 years) treatment of menopausal symptoms e.g., hot flashes, should be counselled on the small absolute risks for CHD, stroke and breast cancer. Risks must be weighted against the severity of postmenopausal symptoms and other benefits of treatment.

SOME THINGS WE SHOULD NOT HAVE STOPPED DOING

Over the years, the humble diuretic has run out of favour with many general practitioners as first line therapy in hypertensive patient. Newer and more expensive drugs are often chosen instead. However, in the recently concluded and published ALLHAT study (The Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial), it appears that the thiazide-like diuretic is the preferred approach for the initial management of hypertension or, if more than one drug is needed, as a part of a multi-drug regimen. This is the emerging consensus and there are many reasons for this. The chief of these is that the other therapeutic classes are seldom better than the diuretic and often inferior in terms of clinical outcome and blood pressure control. There are, of course contraindications to the use of a diuretic that must be remembered. One is gout. Another would be sulfonamide allergy, to which thiazide-like diuretics are related. Diabetes has often been considered a reason not to start treatment with a diuretic, but the findings of ALLHAT does not support this.

It must be stressed that initial choice of therapy with a thiazide diuretic is preferred. However, this does not apply to everyone. There are absolute and relative contraindication to its use as mentioned above. As electrolyte imbalance is a potential cause of hospitalization, the patient’s electrolytes should be checked regularly when diuretics are used.