Protocol for Management of Hypertension by Family Practitioners

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Introduction

Hypertension is associated with an increased risk of developing coronary heart diseases, stroke, congestive heart failure, renal insufficiency and peripheral vasculardiseases. It has been estimated that one out of every three persons over the age of 45 is hypertensive in Pakistan. Estimates of the prevalence of hypertension in various parts of the world is reported to be between 10% and 20% in several adult population, when threshold values are taken as 160 mmHg Systolic Blood Pressure (SBP) and 95 mmHg Diastolic Blood Pressure (DBP). It would have been higher if the current threshold value of 140 mmHg SBP and 90 mmHg DBP were used.

While the trend in hypertension related mortality has been downward in the past several decades, it continues to be a major challenge. People with hypertension have three to four times the risk of developing coronary heart disease and as much as seven times the risk of stroke as those with normal blood pressure. Anti-hypertensive treatment has been shown to be particularly effective in reducing the incidence of stroke, a 5 to 6 mmHg reduction indiastolic blood pressure reducing incidence by 40%. Inspite of this success in improving the outcome for persons with established disease, the incidence and the prevalence of blood pressure remains unacceptably high.

Non Pharmacological treatment

The life style modification suggested are, stopping smoking, salt restriction, weight reduction, alcohol reduction,. exercise and relaxation. The need for life long compliance is to be emphasized.
## Guidelines for selecting first-line drugs for hypertension

<table>
<thead>
<tr>
<th>Class of Drug</th>
<th>Indications</th>
<th>Relative Contra-Indications</th>
<th>Absolute Contra-Indications</th>
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</thead>
</table>
| **Diuretics** | Heart failure  
Elderly patients  
Systolic hypertension  
African origin | Diabetes  
Hyperlipidaemia  
Pregnancy |  |
| **β-Blockers** | Angina  
After myocardial infarct  
Tachyarrhythmias  
Pregnancy | Hypertriglyceridaemia  
Insulin-dependent diabetes mellitus  
Heart failure  
Athletes and physically active patients  
African origin | Asthma and chronic obstructive pulmonary disease  
Peripheral vascular disease  
Heart block |
| **ACE inhibitors** | Heart failure  
Left ventricular hypertrophy  
After myocardial infarct  
Diabetes with microalbuminuria | African origin | Pregnancy  
Renal failure  
Bilateral renal artery stenosis |
| **Calcium antagonists** | Angina  
Peripheral vascular disease  
Elderly patients  
Systolic hypertension  
Glucose intolerance  
African origin | Congestive heart failure  
Atrioventricular heart block | Pregnancy |
| **Central sympatholytics** | Pregnancy, Asthma  | Renal failure | Depression, Hepatic Failure |
| **α-Blockers** | Prostatic hypertrophy  
Glucose intolerance | Orthostatic hypotension  
Pregnancy |  |
Principals of Pharmacological Treatment
There is a gmat variation among patients in their response to dmgs, the combinations and doses needed and their susceptibility to adverse effects. The correct dose and combination has to be titrated for each patient individually. The objective of treatment is to reduce the blood pressure to below 140/90 mm of mercury, but this is not possible in every patient. For appropriate response, it is necessary that the dose of drugs should not be changed at intervals of less than a week and a second drug should not be added until the maximum safe or tolerable dose of the first has been achieved. Dose of only one drug should be changed at a time. All drugs except diuretics should be started and stopped gradually. One should stop diuretics three days before starting an ACE inhibitor.

Good Drug Combinations
Diuretics + Beta blocker or ACE inhibitor
Beta blocker + Diurectis
Calcium channel blocker* or alphablocker
ACE inhibitor + Calcium channel blocker
*Caution: Do not combine Beta blocker with Verapamil.

Patients should be referred for specialist’s advice when hypertension is severe: SBP>2 10 mm of Hg, DBP 120 mm of Hg, if there is renal failure, left ventricular hypertrophy/failure, ischaemic heart disease or multiple cardiovascular risk factors. Secondary hypertension, pregnancy induced hypertension, paediatric hypertension and hypertension in patients under 35 years of age should also be referred. Hypertension uncontrolled after 3 months of therapy with two or more drugs or wide fluctuations in blood pressure also need to be evaluated in a secondary care setting. Emergency referral is required in event of encephalopathy, new cerebrovascular accident and accelerated or malignant phase of hypertension i.e., papilledema/fundal haemorrhages/diastolic blood pressure >130 mmHg. Myocardial infarction and acute left ventricular failure are other indications for emergency referral.

Treatment should be stopped when the blood pressure is consistently within the target range and there is no target organ damage. Drugs should be gradually tailed off and non-pharmacological management continued indefinitely.
References