Module 4 Evaluation for All Newly Diagnosed Hypertensive Patients[1]

The aims of the evaluation are:

- to assess lifestyle and identify cardiovascular risk factors that may affect prognosis and guide treatment,
- to reveal identifiable causes of high blood pressure, and
- to assess the presence or absence of target organ damage and cardiovascular disease. (Box 1)

Box 1 Target organ damage[2]

- Heart: Left ventricular hypertrophy (ECG / Echocardiogram)
- Renal: Albuminuria and / or elevation of plasma creatinine (>110 μmol/L)
- Vessel: USG or radiological evidence of atherosclerotic plaque (carotid, iliac, femoral or aorta), generalised or focal narrowing of the retinal arteries
  - Angina or prior myocardial infarction
  - Prior coronary revascularisation
  - Heart failure
- Brain:
  - Stroke or transient ischaemic attack
  - Dementia
- Chronic renal disease
- Peripheral arterial disease
- Retinopathy: Hemorrhages or exudates, Papilloedema

History

- Symptoms suggestive of secondary causes
- Symptoms (present or past history) of cardiovascular risk factors: age>55 for men and age>65 for women/ smoking/ raised total cholesterol/ diabetes mellitus/ family history of premature cardiovascular disease (men under age 55 or women under age 65)
- Target organ damage: retinopathy/ left ventricular hypertrophy/ heart failure/ coronary heart disease (CHD)/ proteinuria or renal disease like renal failure / peripheral vascular disease (PVD)/ cerebrovascular accident (CVA)
- Factors that affect choice of drug treatment like gout, bronchospasm.
- Assessment of lifestyle: exercise, diet, alcohol
- Drug history
- Psychosocial factors
- Family history: hypertension (HT), diabetes, stroke, renal disease, myocardial infarction and other cardiovascular system (CVS) risk factors

Physical examination

- Body weight, height, Body Mass Index
- Features of Cushing's syndrome / Acromegaly (endocrine case of HT)
- Skin stigmata of neurofibromatosis (phaeochromocytoma)
- Radial/brachial femoral delay, precordial or chest murmurs (aortic coarctation or aortic disease)
- Abdominal examination: enlarged kidney, abdominal bruit
- Signs of organ damage: peripheral arterial disease, fundi abnormalities, carotid bruit, neurological defects, CVS examination

Routine laboratory investigation

Recommended Tests	***Justification***
General	
Urine analysis	• Detection of hypertensive nephropathy • Look for red blood cells, casts, glucose and protein
Fasting glucose level	• Detection of concomitant impaired glucose tolerance and diabetes
Renal function test	
Sodium, Potassium, Urea, Creatinine	• Baseline level of electrolytes to aid adjustment of future pharmacotherapy (e.g. thiazide, beta-blockers, Angiotensin-converting enzyme inhibitors • Detection of hypertensive nephropathy • Detection of electrolytes disturbance associated with endocrine disorders
Lipid profile	
Total Cholesterol Triglyceride HDL-Cholesterol LDL-Cholesterol	• Detection of concomitant cardiovascular risk factors • Guidance for antihypertensive and lipid-lowering pharmacotherapy
ECG	
12-lead electrocardiogram	• Detection of cardiac complication as possible end-organ damage (left ventricular hypertrophy; cardiac ischemia)

Reference:

1. U.S. Department of Health and Human Services. The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. [Internet]. Bethesda, MD: U.S. Department of Health and Human Services; c2004 [cited 24 May 2011]. Available from: http://www.nhlbi.nih.gov/guidelines/hypertension/jnc7full.pdf

2. The Royal Australian College of General Practitioners. Guidelines for preventive activities in general practice 7th edition. [Internet]. South Melbourne (Australia): The Royal Australian College of General Practitioners; c2009 [cited 24 May 2011]. Available from: http://www.racgp.org.au/redbook/index