Summary of Guideline: Hypertension – Diagnosis and Management

Effective Date: March 1, 2015

For full guideline, go to: www.BCGuidelines.ca.

When to take BP measurements

- Patients aged ≥ 45 years, record BP at least once every 5 years.
- Use an automated office BP measuring electronic device when taking an office BP.

When is BP considered elevated

- 140/90 is the desirable BP reading for an adult with no co-morbid conditions, diabetes, chronic kidney disease or other target organ damage.
- Individual's desirable BP is influenced by their age, presence of target organ damage, CVD risk level and/or the presence of other CVD risk factors.
- If at any time diastolic BP is > 130 or BP is > 180/110 with signs or symptoms, seek immediate treatment.

When to assess for hypertension

- If an elevated BP is detected, schedule an office visit.
- If BP is elevated again - assess target organ damage and CVD risk:
  - medical history (rule out exogenous factors), physical examination, urinalysis, blood chemistry, FBG or A1c, lipids, ECG, and CVD risk assessment (e.g., Framingham).

When to consider ambulatory or home BP monitoring

- If white-coat hypertension is suspected or unusual fluctuating office-based BP readings, consider ambulatory or home BP monitoring.
- Ambulatory BP monitoring is considered the gold standard to confirm a hypertension diagnosis.

When to diagnosis hypertension

- A diagnosis can be confirmed, if:
  - ambulatory or home BP monitoring indicates an elevated BP; or
  - elevated BP at a 3rd office visit.

When a consultation with a specialist indicated

- Hypertensive emergency; sudden onset in the elderly; abnormal nocturnal BP differences; signs or symptoms suggesting of secondary causes of hypertension; and if BP is difficult to control after treating with 3 antihypertensive medications.

When to implement lifestyle management

- Recommended for mild hypertension (average BP = 140-159/90–99), low-risk for CVD and have no co-morbidities.
- It includes: smoking cessation, increasing physical activity, obtaining or maintaining a healthy body composition, eating a well-balanced diet, moderate alcohol consumption and monitoring salt intake.

When to instigate antihypertensive pharmaceutical management

- Instigate pharmaceutical management in context of the patient's overall CVD risk (e.g., not solely on their BP) and in conjunction with lifestyle management.
- Pharmacologic management may be considered if: 1) average BP is > 140/90 and with target organ damage or CVD risk > 20%; 2) average BP is > 140/90 with 1+ co-morbidities (refer to table below); 3) average BP is ≥ 160/100; or desirable BP is not reached with lifestyle management.

Which antihypertensive drug to use when treating without a specific indication

- In general, antihypertensive medications are equally effective in lowering BP. When prescribing one, take into account cost of the drug, any side-effects and any potential contraindications.
- Consider monotherapy with a first-line drug: thiazide diuretic, calcium channel blocker, ACE-I, or ARB.
- If desirable BP is not achieved with standard-dose monotherapy, use combination therapy by adding one or more of the first-line drugs.

Which antihypertensive drug to use when treating with a specific indication

Co-morbidity	Pharmacologic Treatment Recommendations		Notes
Cardiovascular Disease			
Coronary heart disease	First-line	**ACE-I** *or* **ARB** *or* **Beta-blockers** (for patients with stable angina)	1) Do not use short-acting nifedipine; 2) Do not use ACE-I + ARB if no systolic HF; 3) Caution when lowering SBP to a goal, if DBP is ≤ 60 mm Hg.
	Second-line	**Long-acting CCB** *or* **DHP-CCB** (for high-risk patients and in combination with a first-line ACE-I)	
Myocardial infarction (recent)	First-line	**Beta-blockers + ACE-I/ARB** (if ACE-I intolerant)	1) Do not use non-DHP-CCB (diltiazem, verapamil) if heart failure is present. 2) Caution when lowering SBP to a goal, if DBPis ≤ 60 mm Hg.
	Second-line	**Long-acting CCB** (if beta-blockers contraindicated or ineffective)	
Left ventricular hypertrophy	First-line	**ACE-I/ARB** (if ACE-I intolerant) *or* **Thiazide/Thiazide-like diuretic** *or* **Long-acting CCB**	Do not use direct arterial vasodilators such as hydralazine and minoxidil.
	Second-line	Combination of first-line drugs.	
Heart failure	First-line	**Beta-blockers + ACE-I/ARB** (if ACE-I intolerant) • Aldosterone antagonist may be added in patients with recent CV hospitalization, acute MI, elevated BNP or NT-proBNP level, or NYHA Class II to IV symptoms.	1) If combining aldosterone antagonist to ACE-I/ARB, monitor for hyperkalemia. 2) If combining ACE-I + ARB, monitor for potential adverse events including hypotension, hyperkalemia and worsening of renal function. 3) If bradycardia is also present, avoid use of beta-blockers.
	Second-line	**ACE-I + ARB** *or* **Hydralazine + Isosorbide dinitrate** (if ACE-I + ARB intolerant or contraindicated) • Thiazide/thiazide-like for BP control or loop diuretics for volume control as additive therapy. DHP-CCB may also be used.	
Cerebrovascular disease After acute stroke	First-line	**ACE-I + Thiazide/Thiazide-like diuretic**	1) During acute stroke and not eligible for thrombolytic therapy do not treat HTN unless extreme BP increase. 2) Combination of ACE-I + ARB is not recommended.
	Second-line	**Long-acting DHP-CCB** *or* combination of additional drugs	
Diabetes			
Diabetes with microalbuminuria, CKD, CVD or CVD risk factors	First-line	**ACE-I/ARB** (if ACE-I intolerant)	Loop diuretic could be considered in hypertensive CKD patients with extracellular fluid volume overload.
	Second-line	**DHP-CCB**	
Diabetes	First-line	**ACE-I** *or* **ARB** *or* **Thiazide/Thiazide-like diuretic** *or* **DHP-CCB**	
	Second-line	Combination of first-line drugs • In combination with ACE-I *or* ARB, a DHP-CCB is preferable to a thiazide/thiazide-like diuretic.	
Chronic Kidney Disease			
Chronic kidney disease without diabetes	First-line	**ACE-I/ARB** (if ACE-I intolerant) • Thiazide/thiazide-like diuretic as additive therapy. Loop diuretics for those with volume overload.	1) If using ACE-I or ARB, monitor renal function and potassium. 2) Combination of ACE-I + ARB is not recommended for patients without proteinuria.
	Second-line	Combination of additional drugs	
Renovascular disease	First-line	**Thiazide diuretic** *or* **ACE-I** *or* **ARB** (if ACE-I intolerant) *or* **Long-acting CCB**	Avoid ACE-I or ARB if bilateral renal artery stenosis or unilateral disease with solitary kidney.
	Second-line	Combination of first-line drugs	