2000 Canadian hypertension recommendations

Summary of recommendations affecting family physicians

Canadian Hypertension Recommendations Working Group

Hypertension is estimated to be the third leading risk factor for death worldwide[1]; 22% of adult Canadians have high blood pressure (BP).[2] Unfortunately, only 16% of these people are treated and have their BP controlled. As part of a national strategy to improve BP control in Canada,[3] a new process continuously updates evidence-based recommendations and links these recommendations to a separate and specific implementation plan.

The methods of producing the recommendations have already been published.[4] The recommendations themselves were subsequently revised to exclude those with which 30% or more of those involved in the subgroups, central review committee, and steering committee disagreed. The recommendations were based on the results of literature searches (to March 2000), personal knowledge of published literature, contact with authors, and major clinical trials published before September 2000.

This brief summary of the 2000 recommendations provides a rapid update to the 1999 hypertension recommendations.[5] The comprehensive recommendations (intended as a scientific reference and not a clinical practice guideline) will be published later. A slide kit and clinical practice algorithms supporting the full recommendations are available at www.chs.md.

Diagnosis

The BP of all adults should be assessed by specially trained people using proper measurement techniques at all appropriate visits. Hypertension can be diagnosed immediately when there is a hypertensive crisis, in three visits when there is stable target organ damage, and in up to five visits if there is no target organ damage and initial BP is <180/105 mm Hg. Self-measurement and 24-hour ambulatory measurement are recommended for patients whose BP rises in a physician's office ("white coat" effect). Only devices meeting international standards should be used. Daytime BP of <135/85 mm Hg is associated with a normal prognosis.

Laboratory tests

Once diagnosed with hypertension, patients should have routine laboratory assessment for electrolyte, creatinine, and fasting glucose levels; complete blood count and lipid profile (total, high-density lipoprotein, and low-density lipoprotein cholesterol, and triglycerides); and urinalysis. An electrocardiogram should be obtained. Investigation for renovascular hypertension is recommended if patients have more than one of the following symptoms: sudden onset or worsening of hypertension when older than 55 or younger than 30, abdominal bruit, hypertension resistant to three or more drugs, a rise in creatinine level with an angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker, overt atherosclerotic lesions, or recurrent pulmonary edema of unknown cause. A captopril-enhanced radioisotope renal scan is the usual screening test.

Treatment

Individualized lifestyle modification is recommended for all patients with hypertension. Lifestyle changes effective at reducing BP include weight loss (4.5 kg minimum) for those who are overweight, regular physical activity (optimum 45 to 60 minutes of moderate activity [brisk walk] four to five times weekly), and low alcohol consumption (two or fewer drinks per day; fewer than 14 drinks weekly for men, nine for women). A diet consistent with *Canada's Guide to Healthy Eating* (ie, high in fresh fruit and vegetables and low-fat dairy products and low in saturated fat) and limiting salt additives and foods with excessive added salt will help lower BP. Cognitive behavioural strategies for managing stress work for some people.

For those younger than 60, drug treatment is strongly recommended if diastolic BP is ≥100 mm Hg and should be considered if diastolic BP is ≥90 mm Hg or systolic BP is ≥160 mm Hg, particularly if patients have cardiovascular disease, other target organ damage, or cardiovascular risk factors. For those older than 60, drug treatment is strongly recommended if diastolic BP is ≥105 mm Hg or systolic BP is ≥160 mm Hg.

A change in the recommendations is that initial drugs now include diuretics, long-acting dihydropyridine calcium channel blockers, and ACE inhibitors for both age groups. β-Blockers are recommended as first-line therapy for those

Table 1. Individualization of antihypertensive therapy

RISK FACTOR OR DISEASE	PREFERRED THERAPY	ALTERNATIVE THERAPY	AVOID THERAPY*
Uncomplicated hypertension (<60 y)	Low-dose thiazidelike diuretics, β-blockers, ACE inhibitors, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	
Uncomplicated hypertension (≥60 y)	Low-dose thiazidelike diuretics, ACE inhibitors, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	
Dyslipidemia	Same as for uncomplicated hypertension		
Diabetes mellitus with nephropathy	ACE inhibitors	Angiotensin II– receptor blockers	High-dose diuretics and centrally acting agents (with autonomic neuropathy)
Diabetes mellitus without nephropathy	ACE inhibitors or β-blockers		
Diabetes mellitus without nephropathy, with systolic hypertension	Low-dose thiazide diuretics or long-acting dihydropyridine CCBs		
Angina	β-Blockers (ACE inhibitors as additive therapy)	Long-acting CCBs	
Prior myocardial infarction	β-Blockers, ACE inhibitors		
Systolic dysfunction	ACE inhibitors (thiazide or loop diuretics, β-blockers, spironolactone as additive therapy)	Angiotensin II– receptor blockers, hydralazine or isosorbide dinitrate, amlodipine	Non-dihydropyridine CCBs (diltiazem, verapamil)
Left ventricular hypertrophy	Most antihypertensives reduce left ventricular hypertrophy		Hydralazine, minoxidil
Peripheral arterial disease	Same as for uncomplicated hypertension	Same as for uncomplicated hypertension	β-Blockers (severe disease)
Renal disease	ACE inhibitors (diuretics as additive therapy)	Dihydropyridine CCBs	ACE inhibitors if bilateral renal artery stenosis

ACE—angiotensin-converting enzyme, CCB—calcium channel blocker.
** Short-acting CCBs are not recommended for treating hypertension.*

younger than 60. α-Blockers are not recommended as first-line therapy.

Target values

One of the most important aspects of the recommendations is the need to control treated patients' BP. Most people's (including the elderly's) BP should be reduced to < 140/90 mm Hg and <130/80 mm Hg for those with diabetes mellitus or renal dysfunction. Lowering BP to <125/75 mm Hg is recommended for patients with renal dysfunction and >1 g/d proteinuria. To achieve these targets, if the initial first-line drug is ineffective, alternative first-line BP medications or combinations of drugs should be used. **Table 1** shows treatment recommendations for patients with specific conditions.

A single drug lowers BP on average about 10/5 mm Hg; trials show that most patients require more than one drug to achieve control. For patients who respond poorly to appropriate single or combination medications, physicians should consider non-adherence, secondary hypertension, interfering drugs, lifestyle-induced stress, or "white coat" effect.

References

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