The 2003 Hypertension Recommendations:
What's New?

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The Canadian Hypertension Education Program (CHEP) is a network of hypertension experts across Canada committed to the development of evidence-based recommendations for the management of hypertension, the dissemination of these recommendations, and their application to individual patient groups.

What's new in the 2003 recommendations?

The 2003 Canadian Hypertension Education Program (CHEP) update incorporates findings of several studies, the two most important being the Losartan Intervention For End point reduction in hypertension (LIFE) study and the Antihypertensive and Lipid-Lowering Treatment to prevent Heart Attack Trial (ALLHAT).

ALLHAT

ALLHAT, which resulted in only subtle changes to the recommendations, examined the effect of amlodipine or lisinopril versus chlorthalidone-based treatment regimens.

Overall, the implications of the ALLHAT study in regards to the 2003 recommendations were reflected in:

- Changes in wording related to choice of first-line therapy, increasing the prominence of thiazide diuretics.

Table 1
Target values for blood pressure

Condition	Target SBP/DBP (mmHg)
Diastolic±systolic hypertension	< 140/90
ISH	< 140
Home BP measurement (no diabetes, renal disease, or proteinuria)	< 135/85
Diabetes	< 130/80
Renal disease	< 130/80
Proteinuria > 1 g/day	< 125/75

SBP: Systolic blood pressure
DBP: Diastolic blood pressure
ISH: Isolated systolic hypertension
BP: Blood pressure

Table 2

Considerations in the individualization of antihypertensive therapy

	Initial therapy	Second-line therapy	Notes and/or cautions
Hypertension without other compelling indications	Thiazide diuretics, beta blockers, ACE inhibitors, ARBs, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	Alpha blockers are not recommended as initial therapy. Beta blockers are not recommended initially in those over 60. Hypokalemia should be avoided by using potassium-sparing agents in those who are not prescribed diuretics. ACE inhibitors are not recommended for black patients
Isolated systolic hypertension without other compelling indications	Thiazide diuretics, ARBs, or long-acting dihydropyridine CCBs	Combinations of first-line drugs	Hypokalemia should be avoided by using potassium-sparing agents in people prescribed diuretics
Diabetes mellitus with nephropathy	ACE inhibitors or ARBs	Addition of one or more of thiazide diuretics, cardioselective beta blockers, long-acting CCBs or an ARB/ACE inhibitor combination	
Diabetes mellitus without nephropathy	ACE inhibitors, ARBs, or thiazide diuretics	Combination of first-line drugs or addition of cardioselective beta blockers and/or long-acting CCBs	If the serum creatinine level is >150 µmol, a loop diuretic should be used to replace low-dose thiazide diuretics if volume control is required
Angina	Beta blockers (consider adding ACE inhibitors)	Long-acting CCBs	Avoid short-acting nifedipine
Prior myocardial infarction	Beta blockers and/or ACE inhibitors	Combinations of additional agents	
Heart failure	ACE inhibitors (thiazide or loop diuretics, beta blockers, spirono-lactone as additive therapy)	ARBs or hydralazine/ isosorbide dinitrate	Avoid nondihydropyridine CCBs (diltiazem, verapamil)
Past cerebrovascular accident or TIA	ACE inhibitor/diuretic combinations		BP reduction reduces recurrent cerebrovascular events
Renal disease	ACE inhibitors (diuretics as addi-tive therapy)		Avoid ACE inhibitors if bilateral renal artery stenosis
Left ventricular hypertrophy	ACE inhibitors, ARBs, dihydropyridine CCBs, diuretics, (beta blockers for patients under 55)	Combinations of additional agents	Avoid hydralazine and minoxidil
Peripheral arterial disease	Does not affect initial treatment recommendations	Does not affect initial treatment recommendations	Avoid beta blockers with severe disease
Dyslipidemia	Does not affect initial treatment recommendations	Does not affect initial treatment recommendations	

ACE: Angiotensin-converting enzyme; BP: Blood pressure; ARB: Angiotensin II receptor blocker; CCBs: Calcium channel blockers.

*Short-acting CCBs are not recommended in the treatment of hypertension.

Table 3
Useful antihypertensive drug combinations

Column 1	Column 2
Thiazide diuretic	Beta blocker
Long-acting dihydropyridine calcium channel blocker	ACE inhibitor
	ARB

For additive hypotensive effect in dual therapy, combine an agent from Column 1 with any in Column 2.

ACE: Angiotensin-converting enzyme
ARB: Angitotensin II receptor blocker

- A recommendation not to consider angiotensin-converting enzyme (ACE) inhibitors as first-line therapy in the black population of hypertensives without other compelling indications; and
- A recommendation to consider diuretics as a safe alternative to ACE inhibitors and angiotensin II receptor blockers (ARBs) in patients with hypertension and diabetes, but normal urinary albumin excretion.

LIFE

LIFE compared the benefits of a beta blocker-based regimen (with atenolol) versus an ARB-based regimen (with losartan) in hypertensive patients older than 55 with left ventricular hypertrophy. LIFE demonstrated the significant benefit of ARB-based therapy.

Overall, the implications of the LIFE study were reflected in:

- The recommendation that ARBs be considered as an additional option for first-line therapy in younger patients, along with thiazide diuretics, beta blockers, dihydropyridine calcium channel blockers, and ACE inhibitors;
- The recommendation of ARBs as a first-line choice for the treatment of isolated systolic hypertension, along with diuretics and dihydropyridine calcium channel blockers; and
- The development of more specific recommendations regarding preferred first-line therapies for the treatment of hypertension in patients with left ventricular hypertrophy. These preferred therapies followed the recommendations for treatment of hypertension in patients with no other compelling indications.

This year's process also saw further simplification of the recommendations for the management

of hypertension in patients with diabetes. ACE inhibitors or ARBs were recommended as first-line therapy in all subgroups of diabetes patients with hypertension. This revision was based on considerations of the diabetic subgroup analysis of LIFE, as well as the ongoing discussions of the 2001 trials that established the renoprotective effect of ARBs (*i.e.*, RENAAL and IDNT).

What are the key aspects of the CHEP recommendations?

What's new?

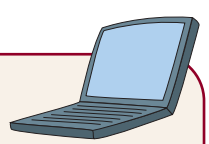
- Broadening of recommendations for first-line therapy, including ARBs.
- Simplification of recommendations for the management of patients with diabetes and hypertension, with the universal recommendations of either ARBs or ACE inhibitors as preferred therapy.

What's old, but still important?

- Assessment of global atherosclerotic risk in hypertensive patients, including the appreciation of lower blood pressure (BP) targets for patients at the highest atherosclerotic risk (Tables 1 and 2).
- Importance of lifestyle modifications as a cornerstone of anti-atherosclerotic therapy.
- Emphasis of the benefits of thiazide diuretics in all subgroups of hypertensive patients.
- Importance of drug combinations for BP control (Table 3).
- Focus on patients' concordance with their BP treatment prescription.

Hypertension remains a problem

In some ways, more important than "what's new" in the 2003 recommendations is "what has stayed the same." Hypertension remains a significant public health problem and many of the issues in the management of hypertension in 2002 remain in 2003. The CHEP will continue to advocate for hypertension treatment and control, increase awareness of the importance of optimum hypertension management, develop tools to aid healthcare professionals, and evaluate the impact of our activities. Dx



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1. To access the CHEP recommendations online: *www.chs.md/Documentation/2003SummaryApr29.pdf*
2. The Canadian Coalition for High Blood Pressure Prevention and Control: *www.canadianbpcoalition.org*