

Watch for Potential Changes in Canada's Current Hypertension and Dyslipidemia Guidelines

Bottom line:

Recently, new guidelines for both high blood pressure and high cholesterol have been published in US that have some distinct and clinically significant differences from our current Canadian guidelines.

The new JNC-8 Hypertension Guidelines recommend:

- BP target of <140/90 mmHg for patients < 60 years old with or without diabetes and/or CKD,
- BP target of <150/90 mmHg for patients > 60 years, and
- Exclude β -blockers as an initial therapy option.

The new ACC/AHA Cholesterol guidelines recommend:

- using statin-only intensity to treat instead of treat to target therapy
- new 10-year ASCVD risk calculator

This newsletter, continued below, outlines more details regarding the major differences, clinical significance and potential changes to watch out for in the future Canadian guideline publications.

Hypertension Guidelines

The American Medical Association recently published its 2014 Evidence-Based Guidelines for the Management of High Blood Pressure in Adults. The new guidelines outline some clinically relevant changes including when to initiate treatment, blood pressure targets and medication treatment selection that differ from the Canadian Hypertension Educational Program (CHEP) Recommendations here in Canada. CHEP is Hypertension Canada's knowledge translation program that targets various healthcare professionals in clinical and community settings, provides annually updated standardized recommendations and clinical practice guidelines to detect, treat and control hypertension.¹ The Eighth Joint National Committee (JNC-8) comprised of panel members selected from more than 400 nominees based on expertise performed an extensive literature search of randomized controlled trials (RCT) to formulate evidence-based, applicable recommendations for the management of high blood pressure in adults. When evaluating the literature they asked 3 questions:

- Does initiating therapy at a specific BP lead to improved outcomes?
- Does treatment to a specific BP lead to improved outcome? and,
- Do different antihypertensive drugs or drug classes differ in benefits and harms on specific outcomes?¹

A brief summary of differences between the CHEP and the JNC-8 guidelines can be found in Table 1.

Table 1: JNC-8 vs. CHEP Recommendations

Population	New JNC-8 Guidelines ²	CHEP Guidelines ¹	Why the change? ²
Age ≥ 60 years	Initiate drug therapy if BP ≥ 150/90 mmHg and treat to target BP < 150/90 mmHg . Those already controlled do not need adjustment.	Age ≥ 80 years: Target SBP < 150 mmHg with isolated systolic hypertension	High quality evidence shows treating to BP < 150/90 mmHg reduces stroke, HF and CHD; No good evidence to show benefit or harm from lower target BP
Age < 60 years	Initiate drug therapy if BP ≥ 140/90 mmHg and treat to target BP < 140/90 mmHg	Age < 80 years: Target BP < 140/90 mmHg Initiate drug therapy if BP > 160/100 mmHg or BP > 140/90 with target organ damage	High quality evidence from 5 DBP trials indicates target DBP < 90 mmHg reduces CV events, HF and overall mortality; SBP < 140 mmHg and applying target to those age < 30 years is based on expert opinion
Age ≥ 18 years with diabetes and/or CKD	Initiate drug therapy if BP ≥ 140/90 mmHg and treat to target BP < 140/90 mmHg	Hypertension associated with non-diabetic CKD: Target BP < 140/90 mmHg Hypertension associated with diabetes mellitus: Target BP < 130/80 mmHg	Moderate evidence for HTN associated with DM target SBP < 150 mmHg and CKD target BP < 140/90 mmHg; No RCTs to compare a lower target; based on expert opinion supported by ACCORD-BP trial*
General population including those with diabetes	First line treatment: thiazide diuretic, CCB, ACEi (in non-black patients) or ARB	First line for adults without compelling indications: thiazide diuretic, β-blockers, LA-CCB, ACEi (non-black patients) or ARB; if diabetes exclude β-blockers	Panel did not recommend β-blockers due to insufficient comparative evidence and one study showed increases in stroke risk
Age ≥ 18 years with diabetes and/or CKD	Initial (or add-on) drug therapy should include ACEi or ARB; can use as initial therapy if black + CKD and proteinuria or as add-on therapy if black + CKD without proteinuria	For all patients with HTN and proteinuric CKD initial therapy should be an ACEi or ARB	Evidence shows ACEi or ARB improve kidney outcomes; Expert opinion supports ACEi or ARB in black patients with CKD and proteinuria due to high risk of ESRD

*ADVANCE was acknowledged but didn't meet criteria

The JNC-8 Guidelines acknowledge using more specific treatments for compelling indications such as heart failure. They also recommend that if target blood pressure is not achieved within one month of treatment, treatment should be optimized by increasing dose and/or adding additional antihypertensive agent(s) and re-assessment one month after each intervention. If blood pressure goals are not achieved after a combination of three first-line drugs or fewer if some are contraindicated, alternative classes of antihypertensive used. These may include β-blocker, aldosterone antagonist or others.¹ CHEP published a 2014 update on the hypertension guidelines during the development of this newsletter. The 2014 update focuses on diagnostic threshold blood pressures for treatment and does not affect table above.¹⁰

Dyslipidemia Guidelines

The American College of Cardiology (ACC) and the American Heart Association (AHA) recently published the 2013 Guideline on the Treatment of Blood Cholesterol to Reduce Atherosclerotic Cardiovascular Risk in Adults. This guideline, approved in November 2013, outlines some drastic differences from our Canadian Cardiovascular Society (CCS) 2013 Guidelines here in Canada.^{3,4} There has been a lot of controversy over the release of these guidelines between clinicians as well as industry groups. The main changes are as follows:

Identification of four major statin benefit groups

Based on evaluated evidence four major patient groups were identified where in most cases benefits for statin therapy are considered to clearly outweigh risks:

- clinical atherosclerotic cardiovascular disease (ASCVD) such as acute coronary syndromes, or a history of MI, stable or unstable angina etc.
- LDL-C > 5 mmol/mL
- diabetes in patients aged 40 to 75 years with LDL-C 2 to 5 mmol/ml, or
- patients without clinical ASCVD or diabetes with LDL-C 2 to 5 mmol/ml and estimated 10-year ASCVD risk >7.5%^{3,5}

Recommend use of 10- year ASCVD risk calculation instead of Framingham Risk Score

The new 10-year ASCVD risk calculation has been validated in white and black men and women with or without diabetes. This new risk calculation tool includes risk of coronary death, nonfatal myocardial infarction, and fatal or nonfatal stroke.^{3,5,6} The 10-year ASCVD risk calculation is based on the Pooled Cohort Equations and the work of Lloyd-Jones MD/ScM, et al.^{3,5,6}

Recommend intensity of therapy instead of treat to target therapy

The new guidelines eliminate use of LDL targets and instead recommend an evidence-based intensity of treatment system:

- Moderate intensity: lower LDL by 30 to 49% or
- High intensity: lower LDL by ≥ 50%.

The category of treatment intensity is based on patient characteristics:

- High intensity treatment is recommended for those with clinical ASCVD and less than 75 years old, LDL ≥ 5mmol/L and people with diabetes age 40-75 years with an ASCVD risk ≥ 7.5%.
- Moderate intensity is recommended for those 75 years old or more, people with diabetes age 40-75 years with a low ASCVD score, and those who may be intolerant to high intensity therapy.^{3,5}

Statins that lower LDL by ≥ 50%	Statins that lower LDL by 30% to 49% ^{3,5}
Atorvastatin 40 to 80 mg Rosuvastatin 20 to 40 mg	Atorvastatin 10 to 20 mg Fluvastatin 80 mg Lovastatin 40 mg Pravastatin 40 to 80 mg Rosuvastatin 5 to 10 mg Simvastatin 20 to 40 mg

The guidelines do not recommend use of any non-statin cholesterol lowering therapy. Currently, there is no data to show that benefits would outweigh risks to add a non-statin drug(s) to high-intensity statin therapy.³

Remarks

The new ACC/AHA Guidelines are a paradigm shift when it comes to assessing and monitoring statin therapy but fundamentally they are similar to Canada's current CCS guidelines. RCT evidence show that ASCVD events, such as heart attack and stroke, are reduced by using the maximum tolerated statin intensity in those groups which would likely benefit. There are currently no good quality studies which validate target to treat therapy therefore the guidelines have shifted the current model of thought to reflect evidence-based intensity to treat therapy. Essentially the same high risk groups are emphasized based on evidence showing benefits outweigh the risks for statin treatment in these patients. The CCS guidelines include the 50 % percentage reduction target for monitoring LDL-C. Although the ACC/AHA Guidelines eliminates this target the idea of using high intensity statin therapy to give a 50% reduction seems logical.^{3,4,5,7,8,9}

The most significant change is elimination of an 'intermediate risk' category for which consideration of treatment is recommended for patients with a threshold LDL-C (LDL-C > 3.5 mmol/L, T C: HDL-C ratio of > 5.0). Patients who would fall into the "intermediate intermediate risk" category in the CCS Lipid Guidelines are likely to be in the "high risk for primary prevention" category in the ACC/AHA guidelines for which statin therapy is recommended (10-year ASCVD \geq 7.5%).^{3,4,9} This increases the risk of overprescribing for a patient who has relatively normal lipid levels but a higher risk score due to age or race.⁹

The ACC/AHA Guidelines emphasize inclusion of the patient and the patient's values in decision-making. For instance, the practitioner would engage patients in a risk versus benefit discussion about initiation of a statin for primary prevention in those with no diabetes, aged 40-75 years and LDL-C 1.8 to 5 mmol/L (70-189 mg/dL).³ This puts practitioners at risk of under- or over-prescribing statins. In an ideal practice the patient-practitioner discussion would always occur but in reality with demanding clinician schedule and high volume of patients, it may not occur.

Controversy exists around implementation of the new 10-year ASCVD risk calculator used in the ACC/AHA. Critics argue the data on which the calculator is based is already outdated and that the calculator overestimates risk compared to other risk calculators.^{7,8,9} However, the 10-year ASCVD risk calculator has been validated and it assesses similar risk factors as the Framingham Risk Score. A risk calculator is an aid for decision-making not a rule, so clinical judgment must be used in making treatment recommendations.^{3,6,7} Risk versus benefit and patient preference should always be considered. Clinical judgement would be especially important in the case of a patient with high total cholesterol but a low 10-year risk score due to the absence of other risk factors; without an LDL-C threshold for treatment, this patient, who could potentially benefit from statin as a disease modifying therapy, could be missed.

Conclusion

Both of the new guidelines have brought some interesting and dynamic changes to assessment and monitoring of blood pressure and cholesterol in clinical practice. Although these changes are not yet reflected in the Canadian guidelines, prescribers may choose to incorporate them into their practice, making awareness of the differences, evidence and clinical application vital.

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