III. Assessment of Overall Cardiovascular Risk in Hypertensive Patients

DIAGNOSIS AND ASSESSMENT


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Recommendations

1. Global cardiovascular risk should be assessed. Multifactorial risk assessment models can be used to predict more accurately predict an individual’s global cardiovascular risk (Grade A) and to use antihypertensive therapy more efficiently (Grade D). In the absence of Canadian data to determine the accuracy of risk calculations, avoid using absolute levels of risk to support treatment decisions (Grade C).

2. Consider informing patients of their global risk to improve the effectiveness of risk factor modification (Grade B). Consider also using analogies that describe comparative risk such as “cardiovascular age,” “vascular age,” or “heart age” to inform patients of their risk status (Grade B).

Background

1. Global cardiovascular risk should be assessed. Multifactorial risk assessment models can be used to more accurately predict an individual’s global cardiovascular risk (Grade A) and to use antihypertensive therapy more efficiently (Grade D). In the absence of Canadian data to determine the accuracy of risk calculations, avoid using absolute levels of risk to support treatment decisions (Grade C).
Elevated systolic and diastolic blood pressure have long been recognized as important modifiable risk factors for the future development of coronary artery disease, stroke and other cardiovascular events (1,2). Not unexpectedly, there is increasing interest in focusing antihypertensive therapy toward individuals deemed to have the highest risk of cardiovascular events and, thus, who will presumably benefit the most from such therapy (3-7).

Approximately 50% of Canadian patients will stop taking prescribed medications for hypertension or dyslipidemia during the first year of starting therapy. Adherence to healthy lifestyle behaviours is also sub-optimal with less than 50% of individuals maintaining a healthy body weight and exercising regularly for at least 30 minutes daily. Calculating an individual’s “Cardiovascular Age” before and after starting therapy has been shown to improve the management of dyslipidemia and hypertension among Canadians.

Numerous methods to estimate an individual’s global cardiovascular risk have been described; these are usually based on multivariable risk equations from prospective cohort studies such as the, Framingham Heart Study, the Lipid Research Clinic Follow-up Cohort (The Cardiovascular Life Expectancy Model), the Dundee Cohort, the British Regional Heart Study, the Munster (Procarm) Cohort and the Systematic Coronary Risk Evaluation (SCORE) (8-11).

While there are a variety of available prediction models, the optimal risk assessment method to use in a specific patient population is uncertain. Model validation among Canadians is uncommon. To date, only the Framingham Heart Study Model and the Cardiovascular Life Expectancy Model have been validated and shown to accurately identify Canadian adults at increased risk. Even well-validated models developed in one patient population may only reliably discriminate relative cardiovascular risks when applied to another population, and in fact be inaccurate in estimating absolute cardiovascular risks (12-16). For this reason, we do not recommend using absolute risk estimates to guide treatment decisions surrounding the initiation of hypertension pharmacotherapy.

Risk calculators that have been validated among Canadians are available freely at: www.myhealthcheckup.com (www.monbilansante.com), http://cvdrisk.nhlbi.nih.gov/. The SCORE risk calculator (www.score-canada.ca), while not validated among Canadians, has been adjusted to take into account Canadian cardiovascular disease prevalence and mortality risksto produce specific estimates for the Canadian population.

2. Consider informing patients of their global risk to improve the effectiveness of risk factor modification (Grade B). Consider also using analogies that describe comparative risk such as “cardiovascular age,” “vascular age,” or “heart age” to inform patients of their risk status (Grade B).

Two published randomized clinical trials among individuals with dyslipidemia and/or hypertension have demonstrated that explicitly calculating a patient’s cardiovascular risk and discussing the results can significantly increase the likelihood of achieving treatment targets (17,18). These studies
suggest that informed patients are more adherent to lifestyle recommendations and/or pharmacotherapy, while informed physicians are more effective at implementing treatment guidelines.

Cardiovascular risk, when explained as a percentage over a 10-year risk timeframe, is a difficult concept for many patients. To help patients reduce risk by lifestyle change or active treatment, a more effective presentation of risk is needed (19).

Randomized clinical trials among individuals with dyslipidemia and/or hypertension demonstrated that explicitly calculating a patient’s cardiovascular risk compared to age- and sex-matched individuals and then communicating the risk as comparative risk analogy can significantly increase the likelihood of achieving treatment targets (18,20-22). Programs that compare risk use terms such as “cardiovascular age,” “vascular age,” or “heart age” were shown to improve risk perception by patients and risk factor management by physicians and can be accessed at the web sites www.myhealthcheckup.com and www.monbilansante.com.

References