Expediting the Diagnosis of Hypertension; The Canadian Hypertension Education Program 2015 Recommendations

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The diagnosis of hypertension is fundamental to the practice of medicine. Increased blood pressure (BP) is the second leading global risk factor for death and disability (behind unhealthy diets), accounting for 18% of global deaths (>9 million deaths per year).¹ Contemporary guidelines recommend assessing BP at every care visit; thus, BP measurement is probably the most commonly performed diagnostic maneuver in medicine.² Importantly, evolving technology is making the diagnosis of hypertension more accurate, reliable, and rapid.

Although accurate when performed in standardized fashion, auscultatory BP is consistently incorrectly and, hence, inaccurately performed in clinical practice.³ Provider education programs have failed to produce consistent and sustained improvements in accuracy. Electronic (oscillometric) BP measurement removes or minimizes many (but certainly not all) measurement errors, such as those due to impaired hearing, missed auscultatory gap, rapid cuff deflation, and terminal digit preference.³ Furthermore, oscillometric readings (in studies with home, ambulatory, and automated office readings) are more closely related to vascular risk than are auscultatory readings, when the latter are performed in a routine manner, which they are most of the time. Hence in 2014, the World Hypertension League and, in 2015, the Canadian Hypertension

Education Program (CHEP), endorsed preferential use of electronic (oscillometric) BP assessment.³⁻⁴ One commonly used means of electronic measurement is a fully automated BP device (automated office BP or AOBP) that can be deployed to take multiple readings, usually while the patient is alone in an exam room, thereby reducing white coat effect. Readings with AOBP devices of 135/85 mmHg and above should be considered high enough to initiate a full assessment to confirm the presence of hypertension, while electronic devices that require manual initiation of each measurement, which is termed office blood pressure measurement (OBPM), or auscultatory blood pressure readings (OBPM) still use a 140/90 mmHg threshold (Figure 1). Important to all methods of BP assessment is the need to follow standardized protocols to ensure accuracy.

CHEP has also made a second major change to its diagnostic algorithm to recommend that out-of-office measurement (ambulatory blood pressure measurement [ABPM] or home blood pressure measurement [HBPM], with ABPM preferred) be performed to confirm that an elevated AOBP or OBPM truly represents a diagnosis of hypertension (Figure 1).⁴ Out-of-office measurement should be performed early in the evaluation of patients with elevated BP readings (after the first hypertension visit) to expedite the diagnosis of hypertension

Figure 1. The 2015 Canadian Hypertension Education program diagnostic algorithm for hypertension.

and identify patients with white-coat hypertension. A revised protocol with detailed procedures is also provided in the new CHEP recommendations. As before, people with markedly elevated BP ($\geq 180/110$ mmHg) or hypertensive emergencies and urgencies can be diagnosed immediately.

After out-of-office measurement is performed, patients identified as having high—normal (130–139/85–89 mmHg) or white coat should be counselled to optimize their health behaviours and followed annually, as they have a high rate of progression to overt hypertension. Patients with white-coat hypertension do not require pharmacologic management for their BP. For clinicians who continue to measure office blood pressure using an auscultatory technique (not recommended), CHEP continues to advise that up to five visits will be required to diagnose hypertension in patients who have initial office readings in stage 1 hypertension range (140–159/90–99 mmHg).

These new CHEP recommendations are important for clinicians to understand, as they will optimize hypertension care delivery. It is vital that these recommendations be incorporated into undergraduate and post-graduate curricula/OSCE, as well as in continuing medical education programs. Further resources for training and education can

be found at www.hypertension.ca. The greatest proportion of undiagnosed hypertension occurs in young Canadians (aged under 40 years), hence screening is important in this subgroup.⁵ Nevertheless, the transition from normal to hypertension occurs at all ages. Canada leads the world in its high rate of hypertension awareness and in treatment and control rates, but still too many are undiagnosed or uncontrolled.⁵

References

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