More research is needed on the best screening method for HTN as well as the best interval between screenings in both the general population and those at-risk for HTN.

b. Measurement Techniques

Recommendation

2. We suggest using attended or unattended, fully automated office blood pressure measurement (programmed to wait five minutes and record the average of three measurements separated by at least 30 seconds).
   (Weak for | Reviewed, New-added)

3. When fully automated blood pressure measurement is not available, we suggest measurement of blood pressure using standard technique and a properly calibrated and validated sphygmomanometer.
   (Weak for | Reviewed, New-replaced)

Discussion

The diagnosis and management of HTN has been based primarily on measurement of blood pressure in a medical clinic or office. Office measurements were used by most observational studies and all randomized controlled trials (RCTs) defining both the risk of various blood pressure levels and the goal blood pressures that have reduced cardiovascular outcomes or mortality. To obtain the values most representative of the patient's office blood pressure, evidence supports that at least two readings be taken on each of two occasions, at least one day apart. Blood pressure was measured by standard technique in all critical studies that have been used to develop recommendations for both the blood pressure levels at which to begin drug treatment as well as the blood pressure goals of treatment. Therefore, in order to make appropriate decisions in clinical practice, blood pressure should be measured with a properly calibrated and validated sphygmomanometer and with a standard technique similar to what has been used in studies.[36] Older studies used manual blood pressure determinations, such as with a mercury sphygmomanometer, while more recent studies have used fully automated oscillometric sphygmomanometers. A fully automated oscillometric manometer can be set to wait a specified rest time and take an average of several blood pressure readings with one activation. A semi-automated oscillometric device takes a single reading without a rest period after activation.

SRs and meta-analyses have reported that blood pressure readings were similar when comparing fully automated oscillometric sphygmomanometer with daytime average ambulatory blood pressure readings, but routine office readings without standard technique averaged 7.0 to 14.5 mm Hg higher than fully automated readings.[37,38] In one SR, SBP readings using research quality manual or oscillometric technique averaged 7 mm Hg higher than fully automated oscillometric technique; however, in the one study included in the SR in which the order was randomized, there was very little difference between these two techniques, suggesting the others may have been biased by regression to the mean.[38] In addition, another SR/meta-analysis concluded that, when fully automated oscillometric readings were obtained, there was not a significant difference in blood pressure levels when an observer was in the room (attended) or the patient was alone in the room (unattended).[39]