How to measure blood pressure accurately

i. Use a mercury sphygmomanometer. All other sphygmomanometers should be calibrated regularly against mercury sphygmomanometers to ensure accuracy.

ii. The patient should be relaxed and seated, preferably for several minutes in a quiet room.

iii. Select appropriate cuff size. Bladder length should be at least 80%, and width at least 40% of the circumference of the mid-upper arm. Use of too small a cuff can result in artificially high blood pressure values.

iv. Wrap cuff snugly around upper arm, with the centre of the bladder of the cuff positioned over the brachial artery, and the lower border of the cuff about 2 cm above the bend of the elbow.

v. Ensure cuff is at heart level, whatever the position of the patient.

vi. Inflate cuff to the pressure at which the radial pulse disappears and note this value. Deflate cuff, wait 30 seconds, then inflate cuff to 30 mm Hg above the pressure at which the radial pulse disappeared.

vii. Deflate the cuff at a rate of 2-3 mm Hg/beat (2-3 mm Hg/sec) or less.

viii. Record the result for systolic and diastolic pressures. For the diastolic reading, use phase V Korotkoff (disappearance of sound). Use phase IV Korotkoff (muffling of sound) only if sound continues towards zero.

ix. Wait 30 seconds before repeating the procedure in the same arm.

x. Average the readings. If the first two readings differ by more than 6 mm Hg systolic or 4 mm Hg diastolic or if initial readings are high, take several readings after five minutes of quiet rest.

xi. Measure and record heart rate and rhythm. Note: Atrial fibrillation in a patient with hypertension indicates increased risk of stroke.

xii. Ideally, patients should not take caffeine-containing beverages or smoke for two hours before blood pressure is measured.

xii. Measure blood pressure on both arms at the first visit, particularly if there is evidence of peripheral vascular disease.

xiv. Variation of up to 5 mm Hg in blood pressure between arms can be acceptable. In certain conditions (eg chronic aortic dissection, subclavian artery stenosis) all blood pressure recordings should be taken from the arm with the highest reading.

xv. Measure sitting and standing blood pressures in elderly and diabetic patients or in other situations in which orthostatic hypotension might be suspected.

xvi. In all patients consideration should be given to obtaining blood pressure measurements outside the clinic setting either by self-measurement of blood pressure at home or by non-invasive ambulatory blood pressure monitoring. Target-organ damage and cardiovascular outcome relate more closely to blood pressures measured outside the clinic, particularly with ambulatory monitoring. An accurate, reliable machine and technique are essential if home blood pressure monitoring is to be used. In up to 30% of patients who are hypertensive in the clinic, blood pressure outside the clinic is within acceptable limits ('white coat' hypertension). Available data suggest that outcome and thus treatment decisions for these patients are best based on blood pressure obtained outside the clinic setting.

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7. Examine the patient's head and neck. Inspect the conjunctivae for pallor and the lips and tongue for cyanosis. Observe the patient's dentition. Look for xanthelasma.

8. Now assess the jugular venous pulse (JVP). Use natural light where possible. Tangential side