Back to Basics: Blood Pressure Screening

Considerations for Accurate Measurement

Preparation Steps

- Patient should be comfortably seated in a chair, feet on the floor, with his/her back supported, or lying down
- Patient should be at rest for at least 5 minutes before beginning the measurement
- The upper arm should be free of all clothing; shirt sleeves should be removed, not rolled up, if at all constrictive
- The arm should be supported at the patient's heart level with elbow slightly flexed

Cuff Appropriateness

- Width of the inflatable bladder should be 40% of circumference of arm (measured at midpoint between elbow and shoulder) or encircle 80% of the upper arm. Be sure to use a large cuff on large individuals. A narrow cuff wrapped around a big arm will give an abnormally high reading, and vice versa. Standard cuff size is; small 7" - 9", adult 9" - 13", large 13" - 17".
- Bladder should be centered over the artery
- Lower edge should be placed 2 to 5 cm (1 to 2 in) above antecubital space
- Cuff should be completely deflated when applied
- Cuff should be snugly and smoothly wrapped around the arm
- Tubing should rest at the medial (inner) aspect of the arm

Examiner Techniques

- Position gauge so that it is viewed straight on
- Palpate brachial or radial artery and inflate the cuff 30 mm Hg above the point where the pulse is no longer palpated, then deflate the cuff slowly (this indicates level at which you will need to inflate cuff to assure an accurate reading)
- Apply stethoscope bell lightly to the brachial artery with no space between the skin and stethoscope, avoiding contact with the cuff or clothing
- Inflate the cuff to 30 mm Hg above point where the previously palpated pulse was not felt. Deflate cuff slowly (2 to 3 mm Hg per heartbeat)
- Note the onset of the first sound, followed by muffling, then disappearance of sound. The first sound is the systolic blood pressure and the disappearance of sound is the diastolic blood pressure
- Average two or more readings separated by 2 minutes of rest. If the first two readings differ by more than 5 mm Hg, additional readings should be taken and averaged
- Record both the systolic and the diastolic blood pressures

Note variables that can alter a patient's blood pressure: eating, drinking or smoking within past 30 minutes, exercise, cold environment, pain or discomfort, exertion, fatigue, caffeine and bladder distention.

Sources: Diabetes Care 2002; 25(supplement 1): 71S;
New Mexico Healthcare Takes On Diabetes

6830 West Oquendo Road
Suite 102
Las Vegas, NV 89118
702.742.1964

Screening and Treatment for Hypertensive Patients with Diabetes

Screening	Diagnosis
Check blood pressure at every routine diabetes visit	Goal: < 130/80 mm Hg
Repeat on a separate day if blood pressure is ≥130/80 mmHg	Hypertension: ≥130 mm Hg systolic and/or ≥ 80 mm Hg diastolic
Orthostatic blood pressure should be performed to assess for the presence of autonomic neuropathy	

Treatment	
Systolic: 130-139 mmHg and/or Diastolic: 80-89 mmHg	Lifestyle Interventions: • Control weight • Limit sodium and alcohol • Regular exercise If goal not achieved after 3 months then begin medication therapy
Systolic: ≥140 mmHg and /or Diastolic: ≥ 90 mmHg	Initial Drug Choices: • Angiotensin-converting enzyme (ACE) inhibitors or • Angiotensin receptor blockers (ARBs) If blood pressure not controlled, add thiazide diuretic if estimated GFR is at or above 30 ml/min If blood pressure not controlled, add a loop diuretic if estimated GFR is below 30 ml/min More than one of the above medications may be necessary
Patients with hypertension accompanied by microalbuminuria or clinical albuminuria	ACE inhibitor or ARB (substitute one for the other if first choice not tolerated)
Patients over 55 years, with or without hypertension but with another cardiovascular risk	ACE inhibitor (if not contraindicated)
Patients with recent myocardial infarction	Addition of β-blockers

Expert Consensus:

- If ACE inhibitors or ARBs are used, monitor renal function and serum potassium levels.
- In elderly patients, blood pressure should be lowered gradually to avoid complications.
- Patients not achieving target blood pressure on three drugs, including a diuretic, and patients with severe renal disease should be referred to a specialist experienced in the care of patients with hypertension.

Source: Diabetes Care Volume 33, Supplement 1, January 2010 S11
Standards of Medical Care in Diabetes - 2010
New Mexico Healthcare Takes On Diabetes

6830 West Oquendo Road
Suite 102
Las Vegas, NV 89118
702.742.1964

March 2010