PRESS RELEASE

Blood pressure monitoring: room for improvement

Inaccurate blood pressure measurements due to faulty technique impact hypertension treatment decisions

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Because some clinicians fail to stick to official recommendations for blood pressure monitoring, a number of patients are misclassified, which could have an impact on decisions about their treatment. According to Gretchen Ray and colleagues, from the University of New Mexico College of Pharmacy, when routine blood pressure monitoring in clinics is compared with measurements based on the latest guidelines, 93 percent of patients have different blood pressure readings. The findings[1] appear online in the *Journal of General Internal Medicine*[2], published by Springer.

In 2005, the American Heart Association (AHA) released updated recommendations for blood pressure monitoring, to ensure accurate and consistent blood pressure measurements. Numerous factors including body position, arm position, inter-arm differences, cuff size and cuff placement can affect the reading.

Ray and colleagues compared the blood pressure readings of 40 patients obtained by the traditional method routinely used in clinics, as well as by the AHA-recommended method. Based on these two readings for each patient, the researchers produced two medical profile summaries (one for each technique used), covering past medical history, medication list, drug allergies, vital signs, presence or absence of pain, physical examination and laboratory findings, as well as the last two blood pressure readings. These profiles were reviewed by three physicians who provided hypothetical hypertension treatment recommendations.

Ray and colleagues found that overall, individual blood pressure measurements varied greatly between the two methods. As many as 93 percent of patients had a significant blood pressure difference between the two readings (either over 5 mmHg systolic or over 2 mmHg diastolic), with implications for potential cardiovascular complications.

The researchers observed multiple technical errors during the method that most likely accounted for differences between the blood pressure readings. Out of ten possible errors (as defined by the AHA), the average number of errors per patient during the traditional assessment was four. The most common technical error was the absence of measurements on both arms, presumably to save time during measurement. The time to measure blood pressure using the AHA method was over eight minutes (due to the required five minute resting period between arm measurements) versus two minutes using the traditional method.

According to the hypertension medication treatment decisions provided by the three physicians, 45 percent of patients would have received different treatments based on their two blood pressure measurements.

Ray concludes: "Inaccurate blood pressure assessment is common and may impact hypertension treatment. Clinic staff need to be educated on the AHA recommendations for accurate blood pressure measurement, and encouraged to follow them in order to obtain a more accurate reading. More accurate blood pressure measurement could result in improved hypertension management decisions."

References
1. Ray GM et al (2011). Blood pressure monitoring technique impacts hypertension treatment. *Journal of General Internal Medicine*. DOI 10.1007/s11606-011-1937-9
2. The *Journal of General Internal Medicine* is the official journal of the Society of General Internal Medicine.

The full-text article is available to journalists on request.
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