High blood pressure in the doctor's office may not predict heart risks

November 24 2008

Continuously measuring blood pressure may help predict heart disease and related deaths among individuals with treatment-resistant hypertension, while blood pressure readings taken in a medical office do not appear to predict future heart risks, according to a report in November 24 issue of *Archives of Internal Medicine*.

About 10 percent to 30 percent of individuals with high blood pressure have a condition known as resistant hypertension, according to background information in the article. For these patients, blood pressure remains high despite treatment with at least three antihypertensive drugs, always including a diuretic (medication that increases urine output). Ambulatory blood pressure monitoring, or measuring blood pressure at regular intervals throughout the day, is increasingly important in managing patients with this condition because of the possibility of a white-coat effect (when an individual only has high blood pressure at the physician's office).

Gil F. Salles, M.D., Ph.D., studied 556 patients with resistant hypertension who attended an outpatient clinic between 1999 and 2004. Participants underwent a clinical examination and had their blood pressure monitored continuously during a 24-hour period (every 15 minutes throughout the day and every 30 minutes at night). They were followed up at least three to four times a year until December 2007.

After a median (midpoint) follow-up period of 4.8 years, 109 (19.6 percent) of participants had a cardiovascular event or died of

cardiovascular disease. This included 44 strokes, 21 heart attacks, 10 new cases of heart failure and five sudden deaths. Seventy patients (12.6 percent) died, including 46 (8.3 percent) of cardiovascular causes.

Blood pressure measured in the office did not predict any of these events, whereas higher average ambulatory blood pressures (both systolic or top-number and diastolic or bottom-number) were associated with the occurrence of fatal and non-fatal heart events. This association remained after controlling for office blood pressure and other risk factors for heart disease. When considered separately, nighttime blood pressure was superior to daytime blood pressure in predicting heart events. If nighttime systolic blood pressure increased by 22 millimeters of mercury, risk for future heart events increased by 38 percent, whereas an increase of 14 millimeters of mercury in diastolic blood pressure increased heart risks by 36 percent.

"This study has important clinical implications," the authors write. "First, it reinforces the importance of ambulatory blood pressure monitoring performance in resistant hypertensive patients. Furthermore, ambulatory blood pressure monitoring should be performed during the whole 24 hours, with separate analyses of the daytime and nighttime periods, because it seems that nighttime blood pressures are better cardiovascular risk factors than are daytime blood pressures."

Source: JAMA and Archives Journals