Repeat Measurements Unveil Masked Hypertension

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NEW ORLEANS — "Masked hypertension," which is thought to affect about one in eight individuals, can be identified through repeated office blood pressure measurements in persons who show discrepancy between office and home blood pressure levels, according to Italian investigators.

"We were able to diagnose masked hypertension by using repeated office measurements. It matches what our patients found in home monitoring,"reported principal investigator Dr. Giuseppe Crippa of Guglielmo da Saliceto Hospital, Piacenza, Italy.

Masked hypertension is defined as normal office blood pressure but high ambulatory blood pressure or home blood pressure. It is estimated that the condition is as prevalent as white-coat hypertension and is often missed in clinical practice, Dr. Crippa explained at the annual meeting of the American Society of Hypertension.

His study compared the level of agreement between office blood pressure (OBP), repeated office blood pressure (ROBP), and daytime ambulatory blood pressure (ABP) in 48 patients pharmacologically untreated with subjects with normal office blood pressure (less than 140/90 mm Hg) but elevated daytime ABP (at least 135/85 mm Hg).

Since ABP averages multiple measurements, it is the accepted standard for diagnosing masked hypertension. For follow-up, home blood pressure measurement is regarded as a simpler, reliable, and cost-effective alternative, he said.

OBP values were derived from the average of at least three sphygmomanometric measurements obtained during at least three separate visits, over a 3-week period. ABP values were calculated as the average of daytime readings taken every 15 minutes and nighttime readings obtained every 30 minutes. ROBP was performed after 20 minutes of rest with the patient seated comfortably alone; 10 consecutive measurements were taken every 2.5 minutes, with the average of the final six readings considered the final value.

With ambulatory blood pressure as a reference for the diagnosis of masked hypertension, repeated office BP identified the condition in 46 of the 48 patients.

This is important, Dr. Crippa noted, because the average blood pressure varies highly over 20 consecutive measurements. For example, in one patient, the initial reading taken at 8:02 a.m. was 210/121 mm Hg and pulse rate was 96 beats per minute (bpm); midway through the ROBP it dropped to 140/79 mm Hg and 80 bpm; and concluded at 137/77 mm Hg and 72 bpm. Over the 20 readings, the average of the first 4 was 185/106 mm Hg, while the average of the final 6 readings was 138/77 mm Hg.

In the study, the OBP readings (both systolic and diastolic) were slightly but significantly lower than those achieved with ABP or ROBP.

The differences between OBP and both ABP and ROBP were statistically significant. The ABP and ROBP readings were not significantly different and, in fact, were highly correlated with each other, Dr. Crippa reported.

With ABP as a reference for the diagnosis of masked hypertension, ROBP failed to identify this condition in just 2 out of the 48 patients.

"According to our results, ROBP seems to provide reliable information on blood pressure status that compares favorably with the most precise and exhaustive technique for the diagnosis of masked hypertension, that is, [ambulatory blood pressure monitoring]," Dr. Crippa explained. "In a population of untreated subjects, ROBP and ABP monitoring provided a very similar proportion of individuals with masked hypertension, and the level of agreement, for the same subject, was more than acceptable. The precision and power of detection by ROBP seems very high, with an attractive cost/efficacy ratio."

The majority of subjects (94% according to ABP monitoring values) had OBP values in the prehypertensive range, he added, suggesting that masked hypertension might be regarded as a high-risk subset of prehypertension. ■

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