

## Ambulatory monitoring reveals many patients have 'white coat' hypertension

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A third of patients thought to have resistant hypertension had "white coat" hypertension during 24-hour ambulatory monitoring, in a large study reported in *Hypertension: Journal of the American Heart Association*.

In ambulatory [blood pressure](#) monitoring, the patient's blood pressure is checked at regular intervals under normal living and working conditions.

Resistant [hypertension](#) occurs when a patient's blood pressure remains above treatment goals, despite using three different types of drugs at the same time. In "white coat" hypertension, a patient's blood pressure is high at the doctor's office but normal in everyday life.

"Ambulatory monitoring showed that many of these patients' blood pressures were in the normal range when they were at home or participating in their usual activities," said Alejandro de la Sierra, M.D., lead author of the study and director of internal medicine at Hospital Mutua Terrassa, University of Barcelona in Spain. "While those who actually had 'white coat' hypertension are not risk free, their cardiovascular outcomes are much better."

The study included 69,045 patients with hypertension — defined as systolic blood pressure of 140 millimeters of mercury (mm Hg) or above and diastolic blood pressure of 90 mm Hg or above — in the Spanish Ambulatory Blood Pressure registry. Fifty-one percent were men and their average age was 64 years.

Thirty-seven percent of 8,295 patients determined to have resistant hypertension had "white coat" hypertension after being tested with ambulatory blood pressure monitoring for 24 hours. Close to 63 percent had true resistant hypertension.

Researchers based blood pressure estimates on two readings. They took ambulatory blood pressure every 20 minutes during the day and night and assessed age, gender, weight, height, body mass index, duration of hypertension and known cardiovascular risk factors such as smoking, diabetes, lipid profile, creatinine levels, electrocardiograms and clinical cardiovascular disease.

The researchers found:

- More women (42 percent) had "white coat" hypertension with ambulatory blood pressure monitoring than men (34 percent).
- Those with true resistant hypertension appeared slightly younger, were more likely male, had a longer duration of hypertension and a worse cardiovascular risk profile.
- Those with true resistant hypertension included a higher number of smokers, diabetics, and patients with left ventricular hypertrophy and previous cardiovascular disease.

"Those with true resistant hypertension showed high blood pressure at work, during the day and at night," de la Sierra said. "The true resistant group also was more likely to have blood pressures that abnormally rose during the night when they were sleeping."

It made no difference in target blood pressure goals if antihypertensive medications were given either in the morning or at night, researchers

said.

"Ambulatory blood pressure monitoring should be mandatory in resistant hypertension patients to define true and 'white coat' hypertension," de la Sierra said.

Limitations of the study included its cross-sectional nature and the lack of information to determine whether patients were taking medications correctly. However, the high number of patients more closely matched the usual clinical practice treated by primary care physicians and referral centers.

"Physicians should be encouraged to use ambulatory monitoring to confirm resistant hypertension in their patients as it would ensure the most effect treatment options are used," de la Sierra said. "Patients benefit by knowing whether their blood pressure is normal during daily activities or still needs the reinforcement of dietary and drug measures to achieve the goal."

Provided by American Heart Association

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