

BP Control Improved With AM and PM Meds

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SAN FRANCISCO — Patients on three or more medications for resistant hypertension were more likely to have blood pressure under control and less likely to have a non-dipper BP pattern at night if they took at least one of the drugs at bedtime, according to ambulatory BP monitoring study involving 1,306 patients.

For 48 consecutive hours, a device automatically measured blood pressure and heart rate every 20 minutes from 7 a.m. to 11 p.m. and every 30 minutes during the night. Simultaneous wrist actigraphy was used to monitor physical activity every minute. A comparison of data from the two devices allowed investigators to determine blood pressure means during waking and sleep time according to each individual's rest-activity cycle.

Among 573 patients who took at least one of their antihypertensives at bedtime and the remainder in the morning, 32% had blood pressure under control, which was significantly better compared with 23% of the 733 patients who took no antihypertensive medications at bedtime



In the bedtime group, 40% had a non-dipper pattern, compared with 83% in the morning-only group.

DR. HERMIDA

and all of them on awakening, Dr. Ramon C. Hermida and his associates reported at the annual meeting of the American Society of Hypertension.

The bedtime-dose group also had sig-

nificantly lower blood pressures at nighttime and morning, and lower ambulatory pulse pressure compared with the morning-only group. The bedtime group patients had a higher awake/asleep blood pressure ratio, and thus were significantly less likely to have a nighttime non-dipper blood pressure pattern that has been associated with a higher risk of cardiovascular and cerebrovascular events. A non-dipper blood pressure pattern is defined as less than a 10% decline in mean blood pressure during sleep compared with awake blood pressure.

In the bedtime group, 40% had a non-dipper pattern, compared with 83% in the morning-only group, said Dr. Hermida of the University of Vigo, Spain.

In addition, the bedtime group had significantly lower mean levels of glucose, total cholesterol, LDL cholesterol, fibrinogen, and urinary albumin excretion.

In general, patients with resistant hy-

pertension have a high prevalence of the non-dipper blood pressure pattern. Conventional strategies for managing resistant hypertension focus on adding another drug or changing a drug to see if that improves the combination therapy.

Research findings suggest that up to 89% of patients who take antihypertensives ingest them all in the morning, including patients with resistant hypertension. With better timing of medication administration, blood pressure control could be improved and the number of patients with the non-dipper pattern reduced, Dr. Hermida proposed.

In the current study, the cohort had a mean age of 61 years; 52% of the participants were male. Mean morning blood pressures were 136/79 mm Hg in the bedtime group and 142/82 mm Hg in the morning group.

The investigators reported having no conflicts related to the study. ■

'J Curve' Persists Despite Intensive Lipid Control

SAN FRANCISCO — Bringing blood pressure levels too far down increased the risk for cardiovascular events in a post hoc analysis of data on 10,001 patients with coronary artery disease in a trial of aggressive lipid-lowering therapy.

There has been some controversy around the idea of a "J-curve" relationship between blood pressure and the risk for cardiovascular events, in which a higher rate of events is seen with very low and very high blood pressure levels. Every previous study, except one that looked for this phenomenon, found evidence of a J curve, but it's been unclear whether the

astolic were at higher risk for the primary end point, a composite of death from coronary disease, nonfatal MI, resuscitation after cardiac arrest, or fatal or nonfatal stroke.

The nadirs for safe low blood pressures were 141 mm Hg systolic and 80 mm Hg diastolic, said Dr. Messerli, director of the hypertension program at St. Luke's Roosevelt Hospital, New York. He reported the findings in a poster presentation. The lead investigator in the study was Dr. Sripal Bangalore of Harvard Medical School, Boston.

"The good news is that it is a relatively shallow curve," with mild increases in risk just below those blood pressure nadirs, Dr. Messerli said. Once blood pressure drops to 110 mm Hg systolic or 60 mm Hg diastolic or lower, however, risk for the primary cardiovascular end point tripled.

Similar J-curve relationships were found for secondary end points analyzed individually—all-cause mortality, cardiovascular mortality, nonfatal MI, or stroke.

Systolic blood pressure was a stronger predictor of all-cause mortality or cardiovascular mortality. Diastolic blood pressure was a stronger predictor of nonfatal MI. Systolic and diastolic pressures equally predicted the risk for stroke.

All patients in the study had coronary artery disease. The J-curve phenomenon probably exists for patients without coronary artery disease but "to a much lesser extent," Dr. Messerli speculated.

The study was funded by Pfizer Inc., which markets atorvastatin. Dr. Messerli has been a consultant, adviser, or speaker for other companies that make antihypertensives, lipid-lowering drugs, or other medications, but has no relationship with Pfizer. ■



Once blood pressure drops to 110 mm Hg systolic or 60 mm Hg diastolic or lower, the risk tripled.

DR. MESSERLI

J curve exists when other cardiovascular risk factors such as LDL cholesterol levels are managed aggressively, Dr. Franz H. Messerli said in a press conference at the annual meeting of the American Society of Hypertension.

Data for the current analysis came from the double-blind Treating to New Targets trial that randomized patients aged 35-75 years with LDL cholesterol levels below 130 mg/dL to daily cholesterol-lowering therapy with 10 or 80 mg of atorvastatin. That study found significantly reduced cardiovascular risk when LDL levels were reduced to 100 mg/dL.

The post hoc analysis revealed a J curve for blood pressure. Patients who had blood pressures below or above 130-140 mm Hg systolic or 70-80 mm Hg di-

Study: Resistant Hypertension Prevalence in 8%-11% Range

SAN FRANCISCO — Approximately 16% of 264,697 patients in a community-based practice network had treatment-resistant hypertension in 2007.

The true prevalence may be 8%-11% after adjustment for pseudoresistance, which previous studies suggest accounts for 30%-50% of suspected treatment-resistant hypertension, Dr. Brent M. Egan said at the annual meeting of the American Society of Hypertension.

At the same time, many of these patients are undertreated. Only two or fewer antihypertensive medications were prescribed for 60% of 49,043 patients who had diabetes or chronic kidney disease plus uncontrolled hypertension and for 78% of 66,337 patients who had uncontrolled hypertension without the other two cardiovascular risk factors, said Dr. Egan, professor of medicine and director of the Hypertension Initiative at the Medical University of South Carolina, Charleston.

The findings have significant implications as the U.S. population becomes older and more obese with more complex medical histories and more kidney disease. "The numbers are becoming substantial. In our practice network, well over 40,000 patients are likely to have true treatment-resistant hypertension," he said.

Resistant hypertension is defined as blood pressure above goal while on a regimen of three or more antihypertensive medications, or controlled blood pressure while on four or more antihypertensives. Pseudoresistance can result from patients not taking prescribed medications, inaccurate blood pressure measurement, white-coat hypertension, or inadequate therapy.

Blood pressure goals for hypertensive patients without diabetes or chronic

kidney disease were less than 140/90 mm Hg. Blood pressure goals for hypertensive patients with diabetes or chronic kidney disease were less than 130/80 mm Hg.

Blood pressure was uncontrolled in 36% of patients without diabetes or kidney disease and in 60% of patients with those diseases. African Americans were more likely than were whites to have uncontrolled hypertension.

Among patients with uncontrolled blood pressure, those with diabetes or kidney disease were prescribed more



'In our practice network, well over 40,000 patients' are likely to have resistant hypertension.

DR. EGAN

antihypertensive drugs and had lower mean pressures at the last patient visit (143/80 mm Hg) compared with patients without diabetes or kidney disease (mean pressures 157/93 mm Hg).

Physicians were more aggressive in treating hypertension in patients with diabetes or kidney disease, prescribing three or more antihypertensives in 35% of patients who achieved goal and 39% of those who did not. Among patients without diabetes or kidney disease, 17% who achieved goal and 22% who did not reach goal received three or more drugs.

Dr. Egan has received funding from, or been an adviser, speaker, or consultant for Novartis, AstraZeneca Pharmaceuticals, Pfizer Inc., and GlaxoSmithKline, some of which make antihypertensive medications. ■