Chinese Study Finds No Blood Pressure J-Curve

BY BRUCE JANCIN
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SAN ANTONIO — Among patients with known cardiovascular disease there is no J-shaped association between blood pressure and either future cardiovascular events or all-cause mortality, according to data from the China National Hypertension Survey Epidemiology Study.

"These data indicate there is a strong, independent, and direct association between blood pressure and mortality among men and women with a history of cardiovascular disease. Furthermore, our findings support a lower blood pressure achievement goal among patients with cardiovascular disease in order to reduce mortality," Dr. Jing Chen said at a meeting of the American Heart Association Council for High Blood Pressure Research.

The possible existence of a J-curve—that is, the notion that driving blood pressures lower is beneficial only to a certain point, after which mortality starts to climb again—has a lengthy history in the field of hypertension. The possibility that it existed in the general population was debated for many years until a consensus emerged that it does not, and that lower is better. More recently the J-curve has been resurrected, with some reports indicating it applies to patients with cardiovascular disease, explained Dr. Chen of Tulane University, New Orleans.

To examine this issue, she turned to the China National Hypertension Survey Epidemiology Study, which enrolled a nationally representative sample of 158,666 participants aged 15 years or older in 1991. The study included 2,251 men and 1,941 women with a baseline history of coronary heart disease or stroke.

At follow-up during 1999-2000, a direct association was seen between blood pressure and cardiovascular mortality in the subgroup having baseline cardiovascular disease—no J-shaped curve.

Compared with normotensive men with a history of cardiovascular disease, those with prehypertension as defined by Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC) VII had an 18% greater risk of cardiovascular death after adjustment for age, smoking, alcohol intake, diabetes, physical activity, body mass index, and geographic region. Prehypertensive women had a 21% increase in risk.

Men and women with stage 1 hypertension had risk increases of 24% and 62%. Cardiovascular mortality was increased by 71% in men with stage 2 hypertension and by 72% in stage 2 women. ■

Biofeedback Cuts BP in Type 2 Diabetes

BY MIRIAM E. TUCKER
Senior Writer

COPENHAGEN — Self-treatment with a biofeedback device that guides breathing can significantly lower blood pressure among patients with type 2 diabetes, Dr. Moshe H. Schein reported at the annual meeting of the European Association for the Study of Diabetes.

The device, called RESPeRATE, is made by InterCure Ltd., Lod, Israel. It was approved for use by the Food and Drug Administration in 2002 for use in stress reduction and as adjunctive treatment for hypertension, together with other pharmacologic and nonpharmacologic interventions. It works by using melodic tones to guide the patient through progressively slower inhalation and exhalation.

Previous data have shown that the device-guided technique results in significant blood pressure reductions among hypertensive patients who use it at home on a daily basis (J. Hum. Hypertens. 2001;15:271-8).

In the new study, a total of 60 patients with type 2 diabetes who had blood pressures greater than 130/80 mm Hg were randomized to use of the device for 15 minutes a day along with usual treatment, or to usual treatment alone for 8 weeks. The group was 60% male, with a mean age of 64 years and a mean body mass index of 30 kg/m^2.

At baseline, mean blood pressure was 149/82 mm Hg in the treatment group and 146/81 mm Hg in the control group, even though the majority of patients—78% of the treatment group and 89% of the controls—were taking blood pressure medication, said Dr. Schein, director of the Family Medicine Unit, Hadassah University Hospital, Jerusalem.

Systolic blood pressure dropped by 9.5 mm Hg in the group using the device, compared with an increase of 2.1 mm Hg among the controls, a significant difference between the two groups.


INTERCURE LTD.

The RESPeRATE device uses melodic tones to slow the patient's breathing.

The change in pulse pressure also was significantly different at 2 months; it dropped by 5.9 mm Hg from a mean of 67 mm Hg at baseline in the guided-breathing group, and increased by 3.6 mm Hg from a mean of 66 mm Hg in the controls.

Diastolic blood pressure dropped slightly in both groups, by 3.5 mm Hg in the guided-breathing patients and by 1.5 mm Hg among the controls. That difference was not significant.

There was a dose-response relationship between use of the device and systolic blood pressure reduction: The longer the patient spent in the slow breathing exercise, the greater the drop. (Although patients had been instructed to perform the device-guided breathing exercise daily, they actually did it for a mean of 5.6 sessions per week. However, the duration of each session lasted 15.9 minutes, slightly longer than the instructed 15 minutes, and patients spent a mean of 40.4 minutes per week in slow breathing.)

Blood pressure control—defined as 130/80 mm Hg or below—was achieved by 8 of 30 (27%) in the device group, compared with just 2 of the 30 (7%) of the controls, Dr. Schein reported. ■