Biofeedback Lowers Blood Pressure in Type 2 Patients

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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 by the U.S. 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).

Systolic blood pressure dipped by 9.5 mm Hg in patients in the device group, compared with an increase of 2.1 mm Hg in those in the control group.

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—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. 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, 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 2 of the 30 (7%) controls. ■

INTERCURE LTD.

The RESPeRATE device uses melodic tones to progressively slow the patient's breathing, which results in significant blood pressure reductions among hypertensive patients who use it at home on a daily basis.