Pilot Program Reduces CV Risk in Type 2 Diabetes

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COLORADO SPRINGS — A novel pharmacist-led, multidisciplinary program of group medical visits for patients with type 2 diabetes can reduce multiple cardiovascular risk factors, randomized trial data show.

More than 21 million Americans have type 2 diabetes. Two-thirds will die of cardiovascular disease. Traditional one-on-one interactions between patient and nurse or physician are not a practical way to address the multiple elevated cardiovascular risk factors typically present in the diabetic population, Tracey H. Taveira, Pharm.D., said at a conference sponsored by the American Heart Association.

A collaborative, multidisciplinary intervention that involves groups of patients provides economy of scale and the opportunity to harness group dynamics constructively. Plus, a program led by a pharmacist instead of a physician offers significant cost advantages simply because of the substantially lower cost of a pharmacist's time, explained Dr. Taveira, a pharmacist at the Providence (R.I.) VA Medical Center.

She presented a randomized controlled prospective trial that evaluated the effectiveness of a program—the Multidisciplinary Education and Diabetes Intervention for Cardiac risk reduction, or MEDIC—that she and her colleagues developed at the VA center. The study involved 110 men with type 2 diabetes who had a hemoglobin A_{1c} (HbA_{1c}) value of 7%-9% within the previous 6 months. Half were obese. The men were randomized to MEDIC or to usual care, which included an invitation to participate in the hospital's American Diabetes Association–certified diabetes program, as well as an obesity program.

Participation in MEDIC involved a 2-hour meeting weekly for 4 weeks. There were six to eight patients per class. The first hour of each session involved patient education provided by a registered dietician, a physical therapist, and a nurse with expertise in the behavioral aspects of cardiovascular risk and diabetes. The educational content, adapted from national guidelines for diabetes self-management, was delivered using principles of social learning theory. Patients learned to carry a personal health care report card; set behavioral and health outcome goals; and self-monitor blood pressure, blood glucose, and physical activity. All patients received weekly individualized dietary and physical exercise homework.

In the second hour of each class, a clinical pharmacist credentialed as a certified diabetes educator aggressively titrated medications for the treatment of diabetes, hypertension, hyperlipidemia, and tobacco cessation using algorithms adapted from national guidelines.

The study end points involved changes in cardiovascular risk factors 4 months from baseline. Systolic blood pressure in the MEDIC group fell by 7.3 mm Hg from a mean of 134 mm Hg at baseline, compared with a 1.7-mm Hg decrease in the usual-care group. From a baseline diastolic blood pressure of 74 mm Hg, there was a 6.5-mm Hg drop in MEDIC patients and a 1.0-mm Hg increase in controls.

HbA_{1c} decreased by 0.9% in MEDIC patients from a baseline of 8.1%, and by 0.1% with usual care. The total cholesterol/HDL ratio dropped from 4.6 to 4.2 in the MEDIC group and increased from 4.3 to 4.4 in controls. From a mean baseline LDL level of 93 mg/dL, there was a 12.2-mg/dL decrease in the MEDIC patients and a 7.8-mg/dL drop in the usual-care group. Body mass index declined from 33.9 kg/m^2 at baseline to 33.7 kg/m^2 in the MEDIC group, and was unchanged over time in controls.

Half of MEDIC patients achieved an HbA_{1c} below 7%, as did 28% of controls. Two-thirds of MEDIC patients got their systolic blood pressure below 130 mm Hg, compared with 39% of controls. A diastolic blood pressure less than 80 mm Hg was achieved in 88% of MEDIC patients and in 69% the usual-care arm.

The overall cardiovascular risk burden as reflected in the United Kingdom Prospective Diabetes risk score decreased by 15% at 4 months in the MEDIC group and increased by 3% in controls, Dr. Taveira continued.

Based on the success of this single-center pilot trial, a larger multicenter randomized controlled trial of MEDIC is underway, as is a separate study assessing the program's utility in diabetic individuals with comorbid mental illness. ■