

# Tighter BP Control Not Better for Some Diabetics

BY MARY ANN MOON

FROM JAMA

**T**ighter control of systolic blood pressure failed to lower mortality or morbidity beyond what was achieved with usual BP control—and it might even be harmful, according to a secondary analysis involving patients with hypertension, diabetes, and coronary artery disease.

“We have shown for the first time . . . that decreasing systolic BP to lower than 130 mm Hg” did not reduce morbidity and actually raised all-cause mortality, compared with decreasing systolic BP to lower than 140 mm Hg, said Rhonda M. Cooper-DeHoff, Pharm.D., of the department of pharmacotherapy and translational research at the University of Florida, Gainesville, and her associates.

“At this time, there is no compelling evidence to indicate that lowering systolic BP below 130 mm Hg is beneficial for patients with diabetes; thus, emphasis should be placed on maintaining systolic BP between 130 and 139 mm Hg while focusing on weight loss, healthful eating, and other manifestations of cardiovascular morbidity to further reduce long-term CV risk,” they wrote.

The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure, as well as numerous national and international societies, have recommended tight BP control for diabetic patients since the early 1990s. The American Diabetes Association has stated that there is no thresh-

old for lowering blood pressure among diabetics, and the American Heart Association has concurred and expanded its guideline to include patients with cardiovascular disease.

Nevertheless, “there are limited data about patients with diabetes to support such a recommendation for lower systolic BP, particularly in the growing population of those with CAD [coronary artery disease].”

Dr. Cooper-DeHoff and her colleagues performed a post hoc secondary analysis of data from a 22,576-participant randomized controlled trial called the International Verapamil SR-Trandolapril Study (INVEST).

For their analysis, they focused on the 6,400 patients with hypertension, diabetes, and CAD who had been followed closely for 16,893 patient-years. A total of 35% of the participants achieved tight systolic control (less than 130 mm Hg), 31% had usual control (less than 140 mm Hg), and the remaining 34% had uncontrolled systolic BP.

A primary event including all-cause death, nonfatal myocardial infarction, or nonfatal stroke occurred in 12.7% of the tight control group, 12.6% of the usual-care group, and 19.8% of the uncontrolled group. This difference between the treatment groups was not considered significant.

After adjustment, however, all-cause mortality was significantly greater (22.8%) in the tight-control group than in the usual-control group (21.8%). Further analysis showed that a systolic BP of less than 110 mm Hg was associated with a significantly increased risk of death from

any cause, the investigators said (JAMA 2010;304:61-7).

“Our data raise the possibility that continued maintenance of systolic BP lower than 130 mm Hg could be hazardous over the long term,” they added.

Recommendations in favor of tight control over the past 20 years were based largely on the findings of two landmark clinical trials, but even in those studies, it is important to note that subjects assigned to the tightest BP control did not achieve their goals, according to the authors. In one study, they achieved a mean blood pressure of 140/81 mm Hg and in the other a mean of 144/82 mm Hg. “The systolic BP associated with the benefit observed in these trials was significantly higher than what is currently recommended for patients with diabetes.

“In fact, many of the major hypertension clinical trials published in the last decade have shown benefit with regard to cardiovascular and nephropathy risk reduction despite mean systolic BP higher than 130 mm Hg,” the researchers added.

Dr. Cooper-DeHoff and her associates acknowledged that the post hoc design of their study may have led to some confounding of their findings and that the results cannot be generalized to patients with diabetes who do not also have cardiovascular disease.

The study was supported by the National Institutes of Health. Dr. Cooper-DeHoff reported receiving funding from Abbott Laboratories. Her associates reported ties to numerous pharmaceutical companies, including several that manufacture hypertension medications. ■

## Survival Improving in Type 1, but Challenges Remain

BY MICHELE G. SULLIVAN

FROM THE ANNUAL MEETING OF THE AMERICAN DIABETES ASSOCIATION

ORLANDO — Despite a steadily improving mortality picture, patients with childhood-onset type 1 diabetes still faced significantly increased mortality risks in a 40-year prospective follow-up study.

Women were particularly at risk, with a 13-fold greater risk of death than women in the same Pennsylvania community who were free of the disease, Dr. Trevor J. Orchard said.

However, the follow-up study did show improving survival rates. After 30 years, the death rate among those diagnosed in the earliest cohort (1965-1969) was 22%. That dropped to 19% in the 1970-1974 cohort, and to 15% in the 1975-1979 cohort.

“We believe this reflects better care, resulting in fewer deaths early in diagnosis and—more recently—lower rates of diabetes complications,” Dr. Orchard, professor of epidemiology at the University of Pittsburgh, said in an interview.

“A lot of patients and the public feel that individuals with childhood-onset type 1 have lower life expectancy. These data firmly support that this is rapidly changing, and most people with type 1 diabetes can look forward to a normal life span if they keep their blood glucose and other risk factors under control,” he added.

Dr. Orchard presented data collected by his colleague, Aaron Secrest, a PhD candidate at the university. Mr. Secrest based his analysis on the Allegheny County Type 1 Diabetes Registry, one of the largest population-based registries of the disease.

The analysis included 1,075 residents of Allegheny County, Pa., who were diagnosed with childhood-onset type 1 diabetes in 1965-1979. The population was stratified into three time cohorts: those diagnosed in 1965-1969, in 1970-1974, and in 1975-1979, with about one-third of the cohort included in each time period. In all, 48% of the patients were female, and 93% were white; the small percentage of black patients is representative of the county’s overall population.

As of January 2008, 19% (202) of registry participants had died—a rate seven times greater than age- and sex-matched people in the general population. Of those 202 participants, 95 were men and 107 were women.

The cumulative survival rates were 98% at 10 years, 93% at 20 years, 81% at 30 years, and 68% at 40 years. “This tells us that about one-third of people with childhood-onset type 1 diabetes diagnosed in the 1960s will die within 40 years of their diagnosis,” Dr. Orchard said.

Although women within the cohort were not significantly more likely to die than men, “striking differences” emerged

when the diabetes group was compared to the background population. “Compared to the standardized mortality rate of the county, women [in the cohort] were 13 times more likely to die, and men were 5 times more likely to die,” Dr. Orchard said. The relative mortality differences between cohort and community and the sex differences in relative mortality were highly statistically significant, he said.

Race also factored significantly into the survival curve. “We saw a tremendously high mortality in blacks, such that 30-year survival was down to 57% compared to 83% in whites,” Dr. Orchard said. “However, the standardized mortality ratio for blacks is very much

the same [compared to the local county] as it is for whites, illustrating the relatively high mortality rate in the black background community.”

There were 32 deaths among black patients—41% of the black cohort. All of the deaths among blacks were directly related to diabetes.

“As this increase did include both acute and chronic complications of diabetes, it is most likely related to access to care and/or the ability to follow through with that care,” Dr. Orchard said. ■

**Disclosures:** The National Institutes of Health funded the study. Neither Dr. Orchard nor Mr. Secrest reported any financial disclosures.

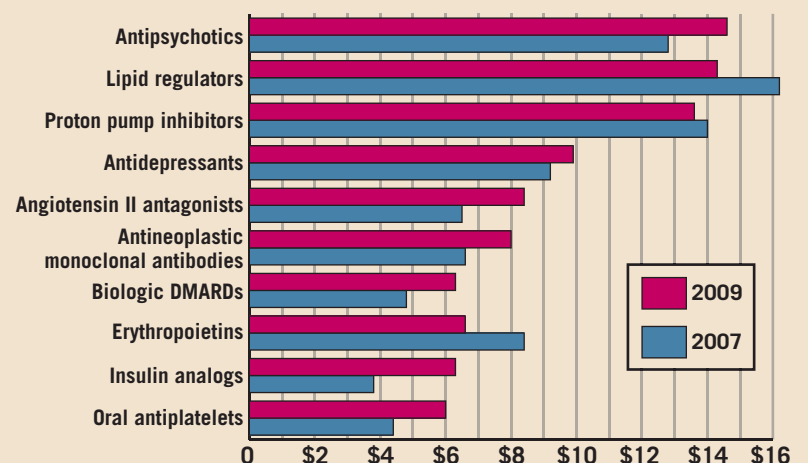


**After 30 years, the death rate was 22% in those diagnosed in 1965-1969, and 15% in the 1975-1979 cohort.**

DR. ORCHARD

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Source: IMS Health