U.S. Prevalence of Diabetes and Prediabetes Reaches New High

BY HEIDI SPLETE

More than 40% of American adults aged 20 years and older have hyperglycemic conditions, according to review of data from the 2005-2006 National Health and Nutrition Examination Survey.

In this study, Catherine Cowie, Ph.D., of the National Institutes of Health and her colleagues compared NHANES data for 1988-1994 with data for 2005-2006 (Diabetes Care 2009;32:287-94). The total crude prevalence of diabetes, including diagnosed and undiagnosed cases based on fasting plasma glucose or 2-hour glucose tests, was 13% in individuals aged 20 years and older. The total diabetes prevalence peaked at approximately 30% among all age groups older than 60 years, and the prevalence of diabetes was approximately the same in both men and women.

After the researchers controlled for age and sex, the total diabetes prevalence was 70% higher in non-Hispanic blacks and 80% higher in Mexican Americans, compared with non-Hispanic whites.

The total crude prevalence of prediabetes, including both diagnosed and undiagnosed cases based on impaired fasting glucose (IFG) and impaired glucose tolerance (IGT) tests was 30%, and this prevalence was highest among individuals aged 75 years and older, where it reached 47%.

The total prevalence of diabetes and prediabetes, both diagnosed and undiagnosed, was significantly higher in men, compared with women (68% vs. 53%), but most of this difference was because of the greater prevalence of prediabetes among men. And the prevalence of any hyperglycemic condition was significantly higher in non-Hispanic blacks, compared with whites (44% vs. 39%), and in Mexican Americans vs. non-Hispanic whites (52% vs. 39%).

When the researchers compared the 2005-2006 data with the data for 1988-1994, they found that the crude prevalence of diagnosed diabetes rose significantly, from 5% to 8%.

"The sheer magnitude of prevalence of hyperglycemic conditions found in 2005-2006 portends the consequences of diabetes, including its myriad of complications and costs both to individuals and to society," the researchers wrote.

The researchers had no financial conflicts to disclose.

Physical Activity Can Affect Genetic Tendency to Obesity

By Miriam E. Tucker

Patients who revert from impaired to normal glucose tolerance, especially those who do so via intensive lifestyle modification, can significantly reduce their cardiovascular risk factors, according to an analysis of data from the Diabetes Prevention Program.

The Diabetes Prevention Program (DPP) was a landmark study that showed that intervention with intensive lifestyle (ILS) modification and, to a lesser degree, metformin could reduce or delay the progression to diabetes over a mean 3.2 years follow-up in patients who had impaired glucose tolerance (IGT) at baseline (N. Engl. J. Med. 2002;346:393-403).

The new analysis in those 3,234 DPP patients also showed a lesser improvement with metformin (Diabetes Care 2009 Jan. 26; doi:10.2337/dct08-0494). "Importantly, improvement of glucose tolerance is associated with a more favorable risk factor profile, with intensive lifestyle accompanied by larger improvements than metformin," said DPP writing group chair Dr. Ronald B. Goldberg, of the University of Miami, and his associates.

Overall, deterioration of glucose tolerance was associated with a worsening of risk factor levels, whereas improvement in status was associated with a beneficial risk factor change. The relationship between changes from normal glucose tolerance (NGT) to IGT to diabetes and changes in risk factors for cardiovascular disease (CVD) were significant for all risk factors except LDL peak particle density (LDL-PPD) in the intensive lifestyle group and for HDL cholesterol in the placebo group, they reported.

"The biggest changes in CVD risk factor profile occurred among the patients in the intensive lifestyle group who transitioned from IGT to NGT. Their systolic blood pressure and triglyceride levels fell by about 25% over the study period, whereas HDL cholesterol and LDL-PPD increased by about 8% and 17%, respectively, from baseline.

Among those whose glucose tolerance status didn’t change throughout the study, risk factor profiles improved slightly in the intensive lifestyle group. Systolic blood pressure fell by 7%, diastolic blood pressure by 9%, and triglycerides by 7% from baseline, while HDL cholesterol and LDL-PPD increased by 5% and 6%, respectively.

Among the patients who progressed from IGT to diabetes, there was small—but most insignificant—deteriorations in their cardiovascular risk factor profiles. In the ILS group, progression from IGT to diabetes was not associated with any significant change in risk factors.

"There is no unique effect of conversion to diabetes but rather a linear relationship between glycemic measures and risk factor levels," the researchers said.