Simplified Tool Assesses 5-Year Risk of Diabetes

With only three predictors – age, BMI, and family history – the measure is easier for patients to use.

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ORLANDO – A simple, three-item measure can accurately identify individuals who are at high risk for developing type 2 diabetes in the subsequent 5 years. Dr. Harold E. Bays said at the meeting.

In an analysis of the data from a longitudinal, population-based survey, respondents who were 55 years or older and had a body mass index greater than 30 kg/m² and a family history of diabetes had a 20% risk of developing diabetes during the 5-year follow-up period, while the risk for younger respondents who had a BMI of less than 25 and no family history of diabetes was 0.3%, reported Dr. Bays of the Mallinckrodt (Ky) Biomedical Research Center.

Other measures are available to assess the risk of developing type 2 diabetes, however, “most of the tests and models use seven or more risk predictors, which is cumbersome for individuals to use in estimating their risk and may diminish their motivation for seeking medical care,” Dr. Bays suggested.

“With these three predictors – age, BMI, and family history – physicians may be able to identify undiagnosed diabetes and initiate preventive measures,” he said.
Even to evaluate the feasibility of a simplified risk-prediction tool, the investigators used data from the Study to Help Improve Early Evaluation and Management of Risk Factors Leading to Diabetes (SHIELD), which included the results of annual surveys from 2005 to 2009 that were completed by 22,000 respondents from a representative sample of the U.S. population. Dr. Bays explained. Respondents aged at least 18 years were included in the current longitudinal analysis if they reported no diagnosis of type 2, type 1, or gestational diabetes at baseline, and if they reported their BMI, age, and family history of diabetes at baseline and 5 years later, he said.

Obesity was defined as a BMI of at least 30, and normal weight was defined as a BMI of less than 25. Individuals aged at least 18 years with self-reported obesity and a family history of diabetes were included in a high-risk group, “which we compared with a low-risk group consisting of respondents younger than 55 years, who reported normal weight and no family history of diabetes,” said Dr. Bays.

Among the individuals in the high-risk group with the 408 in the low-risk group, “we used chi-square test for categorical variables and t-tests for continuous variables,” he said.

An assessment of the baseline characteristics showed that a greater proportion of the high-risk respondents reported a low household income, a smaller household size, fair or poor health status, asthma, and circulatory problems, compared with the low-risk group, Dr. Bays said.

With respect to the disease risk factors, “the results of our analysis showed that nearly 20% of the individuals in the high-risk group received a new diagnosis of type 2 diabetes over the 5 year study period, while those in the low-risk group had an almost negligible 3-year risk, at 0.03%,” he said.

The study findings are limited by the fact that the patients’ diagnoses of diabetes and other comorbidity conditions were self-reported and not validated, Dr. Bays noted.

The investigators’ simplified prediction model is not intended to replace more comprehensive tools, such as the Diabetes Risk Test recommended by the American Diabetes Association for individual risk self-assessment, he stressed at the meeting.

“Our study was not designed to compare the efficacy of the simplified and full tools,” he said. For that matter, he added, “whether one or the other is superior is irrelevant if clinicians are not currently doing any diabetes risk assessment.” Clinicians who are already using the full algorithm should probably continue to do so, he said, noting that the simpler option might be incentive for those not currently using anything to jump on board.