Preventive Care Lacking for Diabetic Women

BY MIRIAM E. TUCKER

ATLANTA — Women with diabetes in the United States frequently are not receiving recommended and needed preventive services.

Women with diabetes who are at the extremes of the life cycle, are poor, and are poorly educated appear to be at the greatest risk for not receiving either diabetes-specific or general preventive care services, according to the findings of a report from the Agency for Healthcare Research and Quality and the Centers for Disease Control and Prevention.

Data on women aged 18 and older with and without diabetes were obtained from three large nationally representative databases: the Medical Expenditure Panel Survey, 2004; the National Health and Nutrition Examination Survey, 1999-2004; and the National Health Interview Survey, 2005. The report is one of the few such documents to examine any women's health issue by age across the lifespan, Michelle D. Owens-Gary, Ph.D., said at the annual meeting of the American Association of Diabetes Educators.

Although the data are a few years old, they still represent the current situation, coauthor Dr. Gloria L.A. Beckles said in an interview.

"The notion that this is any different in 2009 than in 2004 is a myth. Things change very slowly in chronic disease delivery of care, which depends on the organization of systems. It's not just going to change overnight," said Dr. Beckles, an epidemiologist, who works with Dr. Owens-Gary, a behavioral psychologist, at the CDC's division of diabetes translation in Atlanta.

Receipt of all three diabetes-specific preventive care services—hemoglobin A_{1c}, retinal exams, and foot exams—was under 50% for all age groups.

Overall, 91.8% of 1,276 women with diabetes surveyed in 2004 reported having received a hemoglobin A_{1c} measurement in the past year. However, there was a gradient with age, with older women having the greatest likelihood of an A_{1c} test and the youngest having the lowest. The proportions for those aged 18-44 years, 45-64, and 65 and older were 83.9%, 91.3%, and 95.5%, respectively. The youngest adult women "could be a vulnerable population we need to pay more attention to," Dr. Owens-Gary noted.

Compared with A_{1c} testing, the proportions of diabetic women receiving recommended annual retinal eye exams and foot exams were far lower. In all, 67% of 1,595 respondents reported having had a retinal exam in the past year. By age group, the proportions were 47.4%, 66.2%, and 74.6%, respectively, for those aged 18-44, 45-64, and 65-plus. Foot exams were somewhat more frequent, with 70.1% of 1,556 total reporting having received one in the past year, and 60.7%, 73.8%, and 69.4%, respectively, from the youngest group to the oldest.

Receipt of all three diabetes-specific preventive care services was less than 50% for all age groups: 45.2% of a total 1,430 respondents, and just 30.5% of the 18- to 44-year-old group, 48.7% of the 45-64 group and 46.7% of those aged 65 years and older. There were no significant ethnic differences in receipt of the three recommended services. In women of all ethnic origins, the percentage receiving all three recommended preventive care services was low, ranging from 41.0% (Hispanic, all races) to 50.9% (Non-Hispanic, African American).

By family income, the women who were poor or near-poor were less likely than those with diabetes from households with high income to have received all three services, ranging from 38.2% for the lowest quartile to 56.7% for the highest, she said.

For Pap tests and mammograms, there were no significant differences across the life stages for women with and without diabetes: 71.0% of 1,336 with diabetes and 78.7% of 14,967 without reported having a Pap smear within the past 3 years. Among women over 40, 66.5% of 6,829 with diabetes and 66.8% of 8,887 without reported having a mammogram in the past 2 years. There was no significant difference for receipt of Pap test or mammogram by race/ethnic group.

The proportion of women over 50 who had ever received a colonoscopy, sigmoidoscopy, or proctoscopy did not differ between 1,031 with diabetes (48.5%) and 6,041 without (48.4%). However, younger women were less likely to receive them than were older women, and Hispanic women with diabetes were less likely than white or African American women with diabetes to be screened for colon cancer, she reported. ■

The report is available at http://tinyurl.com/QualityofCareReport.

Tuning Fork May Be Superior as Diabetic Neuropathy Screen

BY MIRIAM E. TUCKER

ATLANTA — The clanging tuning fork test is far more accurate and sensitive than is the 10-g monofilament in screening diabetes patients for peripheral neuropathy, results from two studies suggest.

In fact, relying on the monofilament alone to screen patients for diabetic peripheral neuropathy (DPN) will miss all but the most severe, advanced cases, Dr. David S. Oyer and Dr. David Saxon said at the annual meeting of the American Association of Diabetes Educators.

"The clanging tuning fork [CTF] test detects diabetic peripheral neuropathy and increased risk of ulcer earlier than the monofilament. It should be the standard test for DPN. I don't think you need the monofilament at all. The CTF should be the A_{1c} of the foot," said Dr. Oyer, an endocrinologist at Northwestern University, Chicago.

He presented data from two studies, one of which showed that the 10-g Semmes-Weinstein monofilament test was normal in more than two-thirds of patients who were found by the CTF test to have severe DPN. Yet guidelines from the American Diabetes Association—endorsed by the American Association of Clinical Endocrinologists—recommend the 10-g monofilament as the main screening tool, along with one of four other tests. The 128-Hz tuning fork is among those four choices, along with pinprick sensation, ankle reflexes, and vibration perception threshold testing (Diabetes Care 2008;31:1679-85).

Dr. Saxon, an endocrinology resident at the University of Michigan, Ann Arbor, enumerated several limitations of the monofilament, including the fact that those distributed free by drug companies often are not reliable and do not always give 10 g of force. Moreover, cold monofilaments must be warmed up to work properly. After about 100 bends, monofilaments tend to "fatigue" and need to "rest" for 24 hours, Dr. Saxon said.

In a previously published study, Dr. Oyer demonstrated reproducibility of the CTF in 12 patients with diabetes on whom he performed the test 10 times on the same toe for each. Scores ranged from 3.4 to 18.8 seconds, with a mean of 10.2.

In a second part of that study, a single reading from the right foot versus the left foot was compared in 30 randomly selected patients with diabetes. The vibration duration sensation averaged was 10.9 seconds on the right foot and 9.7 seconds on the left. The two feet will almost always be nearly the same unless the patient has sciatica, Dr. Oyer noted.

Monofilament testing was done in patients whose mean vibration duration was 8 seconds or less, and was consistently reported as normal among the 26 patients who had vibration durations of 5 seconds or more. Only at vibration perceptions of 4 seconds or less did the monofilament testing begin to demonstrate abnormal results, but even then patients with abnormal CTF scores were missed. Of 32 patients with vibration perception of 4 seconds or less, 50% still had normal monofilament test results, including 5 of 17 (29%) with completely absent vibration sensation, Dr. Oyer and his associates reported (Endocr. Pract. 2007;13:5-10).

In a review of 81 patients with a history of diabetic foot ulcers (also reported in the Endocrine Practice article), among those with a CTF vibration perception duration of 4 seconds or less, 10 of 32 had diabetic foot ulcers, compared with 1 ulcer in 49 patients who had a CTF score of 5 seconds or more. Thus, there was a 15-fold increased relative risk for foot ulcers in patients with a CTF score of 4 seconds or less, compared with those having a vibration perception duration of 5 seconds or above, Dr. Oyer said.

In a second study, published as an abstract for the 2008 American Diabetes Association's annual scientific sessions, 68% of 148 patients with CTF scores of 8 seconds or less had normal monofilament test results. In 112 patients with CTF scores indicating severe neuropathy (4 seconds or less), 68% had a normal monofilament test. And in 49 patients with CTF scores of 0 seconds, 16 (33%) still had a normal monofilament test.

A history of a diabetic foot ulcer was present in 21 patients. All had CTF scores of 4 seconds or less, while 5 (24%) had normal monofilament tests. When the CTF score was 5 seconds or more, monofilament testing was normal in 96% of patients. Thus, a CTF score of 4 seconds or less was 100% sensitive for ulcer risk, whereas the 10-g monofilament was only 76% sensitive.

The increased sensitivity of the CTF comes at the expense of identifying many at-risk patients who would not end up developing an ulcer if left untreated. Specificity is just 20%, compared with 75% for the monofilament. "But that doesn't bother me. If you want to prevent ulcers, you have to identify everyone at risk, so you can do everything you can to prevent them," he noted.

But Dr. Andrew J.M. Boulton, chair of the American Diabetes Association's Foot Care Interest Group, said he believes that it's too soon to replace the monofilament with the CTF as a first-line screening test for diabetic neuropathy. The CTF results are "of course very interesting, and I think that this is certainly a useful addition to the monofilaments," he said in an interview.

Dr. Boulton, who divides his time between the Manchester (England) Diabetes Centre and the University of Miami, noted that data from prospective studies also support the monofilaments. In one review of six such studies, the increased risk of ulceration ranged from an odds ratio of 2.2 to 9.99, and the relative risk of amputation was 2.9 with an abnormal monofilament test (J. Fam. Pract. 2000;49[11 Suppl]:S17-29).

"What is needed with this test is a prospective study. …This new tuning fork test may well be useful but before it can replace the monofilament—if it is to at all—good longitudinal studies must be done," said Dr. Boulton, who has received honoraria/consulting fees from Pfizer and Eli Lilly & Co.

Dr. Oyer and Dr. Saxon stated that they had no conflicts of interest to disclose. ■