

# Caregivers Rely on MDs for Diabetes Education

BY SHERRY BOSCHERT

Family members and friends who take care of adults needing help managing diabetes are most likely to seek information from a physician, followed closely by the Internet, an online survey of 1,002 caregivers suggests.

The take-home message for physicians is that they are truly critical to caregivers' ability to help people manage their diabetes and they need to make conversations with caregivers a priority "no matter how little time they have," said Paula Correa, director of the Hormone Foundation, which conducted the survey along with the National Alliance for Caregiving.

Eli Lilly & Co., which markets drugs for diabetes, funded the survey.

According to caregivers, patients struggle most with diet and exercise (listed by 54% of respondents), followed by the medical management of diabetes (49%).

The survey, conducted in April 2009, is the first of its kind to focus on the needs of unpaid caregivers of people with diabetes, as opposed to paid home care aides or workers in assisted living facilities, Ms. Correa added. The results, released last month, are available at [www.hormone.org/Public/diabetes\\_caregiver.cfm](http://www.hormone.org/Public/diabetes_caregiver.cfm).

A total of 89% of respondents said they get diabetes care information from physicians. The Internet is a source of diabetes care information for 69% of respondents (see chart).

Frustration in trying to find reliable information on the Internet was reported by 63% of respondents. Frustration also was expressed by 49% from having to

wade through commercial content on the Internet, and 37% said they get too many search results. Thirty-three percent had difficulty finding information on the Internet that was specific to their needs.

The Hormone Foundation, the public education affiliate of The Endocrine Society, indicated that it plans to incorporate the findings in the development of a new Web site, Diabetes Caregiver Central, to provide unpaid caregivers with the resources they need in a one-stop location. The site is slated to launch by the end of 2010.

Caregivers as a whole scored 74 out of a total score of 100 on a five-question quiz of diabetes knowledge, but they showed confusion about hemoglobin A<sub>1c</sub> goals. Only 40% could identify the recommended HbA<sub>1c</sub> levels, and 51% were unsure.

Only 25% said they felt "informed" about diabetes and its potential complications when they first started taking care of a person with diabetes.

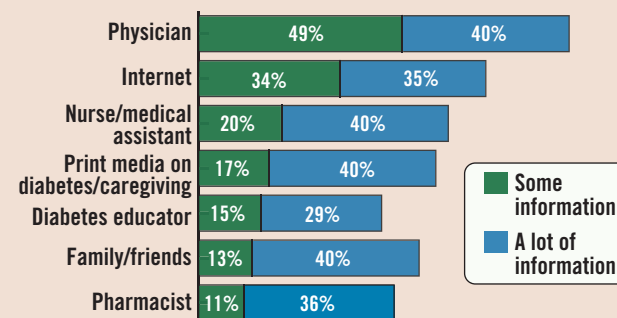
In the areas of diet and exercise, 59% reported that the person with diabetes either cannot or will not exercise, and 50% said the person does not want to follow a healthy diet. Consistent maintenance of blood sugar levels at targets was a significant issue for 43%, and 43% reported episodes of hypoglycemia requiring immediate action. Respondents said the person with diabetes was depressed in 45% of cases, and 40% said the person experiences memory loss, confusion, or symptoms of Alzheimer's disease.

Forty-one percent said they were having great difficulty managing diabetes plus other

medical problems, and 37% reported difficulty managing blood sugar levels and preventing hypoglycemia. Dealing with insurance forms and reimbursements was a difficult issue for 26%. Twenty percent of respondents said that it is very difficult "communicating with the physicians who treat my loved one's diabetes," yet only 3% wanted more information on how to communicate with the physician or the loved one.

More information on diet and exercise issues was desired by 26% of respondents, 17% wanted more information on medical issues, 13% requested more information on medications, and 12% sought additional help understanding blood sugar management.

## Physicians Are the Top Diabetes Information Source for Caregivers



Note: Based on a survey of 1,002 unpaid caregivers of people with diabetes.  
Source: 2009 Diabetes Caregiver Survey

ELSEVIER GLOBAL MEDICAL NEWS

## Sex Hormone–Binding Globulin Strongly Predictive of Type 2 Risk

BY MARY ANN MOON

Low plasma level of sex hormone–binding globulin strongly predicts increased risk for type 2 diabetes in both men and women, while a high level predicts decreased risk, according to an analysis of two longitudinal studies.

Sex hormone–binding globulin (SHBG) appears to have a predictive ability beyond that of traditional risk factors, including glycosylated hemoglobin and C-reactive protein (CRP), said Eric L. Ding, Sc.D., of Harvard School of Public Health, Boston, and his associates.

The findings were obtained in several different analyses of data from the Women's Health Study, then replicated in several further analyses of data from the Physicians' Health Study II. "These strong and consistent findings, obtained with the use of multiple analytic approaches and subgroup analyses in two independent cohorts, support the notion that sex hormone–binding globulin may play an important role in the development of type 2 diabetes at both the genomic and phenotypic levels and that [SHBG] could be an important target in stratification for the risk of type 2 diabetes and early intervention," the researchers noted.

The primary function of SHBG was thought to be to bind circulating hormones, and to sequester circulating androgens and estrogens in particular. More recently, SHBG has been implicated in the maintenance of glucose homeostasis, and several variations in the SHBG gene have been associated with insulin resistance.

Dr. Ding and his colleagues studied plasma SHBG levels in a prospective cohort of 12,304 postmenopausal women participating in the Women's

Health Study. A subset of 359 of these subjects who had developed type 2 diabetes during 10-year follow-up were matched for age and race with 359 control subjects who had not.

High plasma levels of SHBG at baseline were robustly associated with low risk for developing diabetes, as well as with low body mass index, low likelihood of having hypertension, and favorable lipid profiles and CRP levels.

The results were identical in a replication study involving 170 men participating in the Physicians' Health Study II who had developed type 2 diabetes during 8-year follow-up and 170 matched controls who had not. Study subjects who had SHBG levels in the lowest quartile at baseline were at 10 times the risk for diabetes of those who had SHBG levels in the highest quartile, the investigators wrote (*N. Engl. J. Med.* 2009 Aug. 5 [doi:10.1056/NEJMoa0804381]).

Moreover, two variants in the SHBG gene, the rs6257 and the rs6259 polymorphisms, were consistently associated with SHBG levels and diabetes risk, they added.

"Our results may provide a potential explanation of the intriguing divergent effects on the risk of diabetes, observed in two randomized trials, of transdermal estradiol (which elevates plasma glucose levels) and oral estrogen (which lowers glucose levels). In direct comparisons, transdermal estradiol does not affect [SHBG] levels, whereas oral-estrogen therapy favorably increases levels of [SHBG]," Dr. Ding and his associates noted.

Dr. Ding is listed on a provisional patent application filed by the University of California at Los Angeles for the use of SHBG for determining risk of type 2 diabetes.

## Diabetes May Raise Liver Cancer Risk

DENVER — Diabetes appears to be an independent risk factor for hepatocellular carcinoma, with the risk rising as duration of the endocrine disease increases, according to an ongoing, prospective case-control study.

Also, the magnitude of risk for hepatocellular carcinoma (HCC) seems to vary substantially with the type of diabetes treatment used. The risk is greatest in patients on sulfonylureas, lowest in those on thiazolidinediones, and intermediate in insulin-treated patients, Dr. Manal M. Hassan reported at the annual meeting of the American Association for Cancer Research.

Dr. Hassan, of the department of gastrointestinal medical oncology at M.D. Anderson Cancer Center, Houston, presented results from a prospective study involving 420 patients with HCC and 1,109 controls who did not have cancer. The prevalence of diabetes was 23.3% among the cancer patients and 10.4% in controls.

In a multivariate logistic regression analysis adjusted for established HCC risk factors such as heavy alcohol consumption, smoking, and hepatitis C infection, as well as for demographic variables, the odds of developing HCC were increased threefold in patients with a 2- to 5-year history of diagnosed diabetes, 4.8-fold for those with a 6- to 10-year diabetes duration, and 6.6-fold for those with more than a 10-year disease duration, compared with nondiabetic individuals.

Subjects on oral hypoglycemic agents had an adjusted 3.6-fold greater risk of HCC than did nondiabetics. The risk of HCC was increased 6.2-fold in insulin-treated patients, 8.7-fold in those on insulin and oral agents, and 28-fold in those managed by diet only.

Among diabetic patients on oral agents, the HCC risk was 20.5-fold greater in those on sulfonylurea drugs than in nondiabetics. Biguanide therapy was associated with a much lower 2.5-fold increased risk, and thiazolidinediones had a modest 1.3-fold risk, according to Dr. Hassan.

—Bruce Jancin