

Young Patients' Parents Fare Worse On Diabetes Quality-of-Life Measure

COPENHAGEN — Parents of children with type 1 diabetes intensely experience the psychological impact of the disease, according to new study findings.

"Both parents and children may need counseling to help them cope with worries associated with the disease," said Douglas C. A. Taylor, who presented the study at the annual meeting of the European Society for the Study of Diabetes.

The study, which was supported by Sanofi-Aventis U.S., was part of a baseline assessment of participants who were enrolled in a 24-week randomized clinical trial comparing insulin glargine to twice-daily intermediate-acting insulin, said Mr. Taylor, who is director of health economics and outcomes research for i3 Innovus in Medford, Mass.

A total of 175 children and adolescents (aged 9-17 years), and one parent of each, answered either the youth or the caregiver modified versions of the Diabetes Quality-of-Life Measure, a self-administered questionnaire gauging life satisfaction, diabetes worry, and diabetes impact.

Life satisfaction questions assessed issues such as disease management, check-ups, treatment, flexibility, and family bur-

den of diabetes. Disease impact questions asked about embarrassment related to the disease, and interference of the disease on family, school, and leisure. And diabetes worry questions addressed future concerns about the disease's impact on education, marriage, job prospects, and future health.

The female parent was the respondent in 86% of the parental surveys.

Overall, parents scored worse (higher) than their children in all domains of the questionnaire. In the domain of life satisfaction, the parents' mean score was 28, compared with a mean score of 27 for the children; however, this difference was not statistically significant.

For both the disease impact and the disease worry, the parents' score was 23, compared with 21 for the children, a difference that in both cases was statistically significant.

When the responses were divided according to the gender of the children, boys reported better quality of life than girls, yet in the domains of disease impact and disease worry, parents of sons scored worse than those of daughters.

—Kate Johnson



Hypovitaminosis D₃ Highly Prevalent in Type 2 Diabetes

BY PATRICE WENDLING
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VERONA, ITALY — Vitamin D₃ deficiency was found to be highly prevalent in adults with type 2 diabetes, and was strongly and independently associated with early signs of atherosclerosis in a new study conducted in Italy.

The results are provocative and add to a growing body of evidence suggesting that serum concentrations of 25-hydroxyvitamin D₃ may be inversely associated with cardiovascular disease, as well as with some cancers and metabolic syndrome.

Further follow-up and interventional studies are needed to determine whether hypovitaminosis D₃ predicts the development of atherosclerosis in people with type 2 diabetes, and whether vitamin D₃ supplementation would be protective against atherosclerosis, Dr. Giovanni Targher and colleagues reported in an award-winning poster at a joint meeting of the Italian Association of Clinical Endocrinologists and the American Association of Clinical Endocrinologists.

"These findings confirm some previous evidence demonstrating that vitamin D deficiency is highly prevalent in people with type 2 diabetes, and suggest that hypovitaminosis might be an underestimated, novel risk factor for cardiovascular disease among type 2 diabetic adults," Dr. Targher said in an interview.

Using a chemiluminescence immunoassay, the investigators compared winter serum levels of 25-hydroxyvitamin D (25[OH]D₃) in 390 consecutive patients

with type 2 diabetes and 390 nondiabetic age- and gender-matched controls. Hypovitaminosis D₃ was defined as a 25(OH)D₃ level of 37.5 nmol/L or lower. Common carotid intimal medial thickening was measured using ultrasonography only in patients with diabetes by a single operator who was blinded to patient details.

Significantly more patients with diabetes had hypovitaminosis D₃, compared with controls (33.3% vs. 16.4%), reported the authors, who are with the division of internal medicine, Sacro Cuore Hospital of Negrar (Italy). In addition, the 130 patients with diabetes and hypovitaminosis D₃ had a significant increase in carotid intimal medial thickening, compared with the 260 vitamin D-sufficient diabetics (1.10 mm vs. 0.87 mm, respectively).

Compared with vitamin D-sufficient counterparts, diabetic patients with hypovitaminosis D₃ were also slightly older (59 years vs. 57 years) and had significantly higher hemoglobin A_{1c} (7.5% vs. 7.2%), fibrinogen (4.7 g/L vs. 4.3 g/L) and high-sensitivity C-reactive protein (5.0 mg/L vs. 4.3 mg/L) concentrations. Sex; body mass index; blood pressure; lipids; calcium; estimated glomerular filtration rate; diabetes duration and treatment; smoking history; and statin therapy were not significantly different between the groups of diabetic patients.

"Because a lack of vitamin D can negatively affect bone health and have other nonskeletal adverse effects on several organ systems, a widespread screening for vitamin D deficiency or routine vitamin D supplementation should be seriously considered for people with diabetes," Dr. Targher said. ■

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Bubble of Hope: In Gum Formulation, Metformin's GI Side Effects Diminish

COPENHAGEN — Metformin in a chewing gum? It could happen.

The optimism comes from an analysis presented in a poster by Dr. Gerald Bernstein at the annual meeting of the European Association for the Study of Diabetes, showing that a chewing gum formulation of the glucose-lowering drug displays a similar pharmacokinetic profile to that of conventional tablets.

If further study proves that the metformin gum is as effective and safe as the pills but without the gastrointestinal side effects, it could hold particular promise in treating a wide range of patients, including both adults and children with type 2 diabetes or polycystic ovary syndrome who can't tolerate metformin's side effects, or who can't swallow the pills.

"Metformin is a great drug, but some people can't take it because of the gastrointestinal side effects. Maybe we can bypass that by buccal absorption," Dr. Bern-

stein, vice president of medical affairs, Genex Biotechnology, Toronto, said in an interview.

Plasma metformin concentrations were measured in 10 healthy volunteers for 12 hours after ingestion of an 850-mg metformin tablet, for 24 hours following about 5-6 minutes of chewing a 429-mg dose of metformin gum (two pieces containing 214.5 mg each), and for 24 hours after swallowing a 429-mg metformin tablet. The two different metformin tablet dosages showed an expected doubling in area under the curve of parts per million. When the identical dosages of gum and tablet were compared, the curves were similar during 24 hours.

Genex, which is also developing an oral insulin spray, funded the study. The company plans to begin clinical trials of metformin gum in patients with type 2 diabetes in the next few months.

—Miriam E. Tucker