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ANTIDEPRESSANTS ASSOCIATED WITH INCREASED RISK OF DIABETES IN PRE-DIABETICS

Depression Did Not Increase Diabetes Risk in Two Studies but Played a Role in Others

Washington, DC (June 10, 2006) – The use of antidepressant drugs was associated with a significantly increased risk of developing type 2 diabetes in people who were already at greater risk of the disease – and this effect was not seen in those taking the drug metformin, according to a report presented here today at the American Diabetes Association's 66th Annual Scientific Sessions. Other studies yielded conflicting reports on the role of depression in the risk for diabetes. Researchers concurred, however, that those who have diabetes and depression need better management for the latter, which can interfere with their ability to provide self care for their diabetes.

“In a sub-analysis of the Diabetes Prevention Program, which sought to reduce progression to type 2 diabetes by either lifestyle modification or the drug metformin, compared with placebo, in people at very high risk for diabetes, we found that those in the lifestyle and placebo arms of the trial who were taking antidepressant drugs when they started the study, or who took them frequently during the study, were two to three times more likely to develop diabetes during the study,” said Richard R. Rubin, PhD, Associate Professor, Medicine and Pediatrics, The Johns Hopkins University School of Medicine, Baltimore, MD, who was a co-investigator in the study.

There was no increased risk of diabetes seen in those not taking antidepressants in the study, suggesting that the antidepressant medications predispose to diabetes. While it is well-known that some antipsychotic drugs may increase a person's risk for diabetes, this is the first indication that antidepressant drugs could increase the risk of diabetes. Although this finding occurred in an already high risk population, it has serious public health implications.

Dr. Rubin noted that the association between antidepressants and diabetes has not been reported before, and the mechanism for this association is unknown. The effect remained when all likely risk factors, e.g. increased weight, were ruled out.

“We have to keep in mind that that this occurred in a population at very high risk for diabetes so we don't know whether the findings would apply to the general population,” said Dr. Rubin, “but this should be explored further.”

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One surprising finding was that those who were on antidepressant medications, but who were in the metformin arm of the trial, did not have an increased risk of diabetes. Again, the reason for this finding is unknown.

Depression and Diabetes: Which Comes First?

Whether depression tends to cause type 2 diabetes or diabetes causes depression has been a chicken vs. egg issue for centuries. In 1674, British physician Thomas Wolfe said the cause of diabetes is “extreme sorrow.” In the 1950s, Karl Menninger sought a diabetogenic personality and did not find it. By the 1970s, the tables had turned, and it was generally thought that diabetes caused depression. In the 1990s, two major studies showed that depressed people develop diabetes at twice the rate of the non-depressed. Over time, research has tended to confirm that risk in some populations. However, the question has remained unresolved, and multiple papers on this topic are being presented at this year’s ADA meeting to address the issue.

Some 20.8 million adults and children in the United States have diabetes, a group of serious diseases characterized by high blood glucose levels that result from defects in the body’s ability to produce and/or use insulin. Diabetes can lead to severely debilitating or fatal complications, such as heart disease, blindness, kidney disease, and amputations. It is the fifth leading cause of death by disease in the U.S.

Type 2 diabetes involves insulin resistance – the body’s inability to properly use its own insulin. It usually occurs in those who are over 45 and overweight, but it has increasingly been seen in obese children and teens in recent years.

Diabetes Comes First in This Study

Another study evaluated glucose tolerance in 443 generally healthy adults, of whom 14% were being treated for depression. Participants in this study were given a Patient Health Questionnaire (PHQ), a validated screening test for depressive symptoms that has good agreement with formal evaluations such as the Beck Depression Inventory.

“We theorized that if the metabolic abnormality of diabetes comes first, then glucose intolerance should be associated with depression in individuals with undiagnosed diabetes and pre-diabetes,” said Lawrence S. Phillips, MD, Professor of Medicine, Division of Endocrinology and Metabolism, Emory University School of Medicine, Atlanta, GA.

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“However, the opposite occurred. After adjusting for age, BMI (an indicator of weight), gender, and race, glucose intolerance had no significant impact on PHQ,” Dr. Phillips reported. “Although diagnosed diabetes is associated with depression, previously unrecognized glucose intolerance is not in this study.”

The authors conclude that awareness of the health risks conferred by diabetes may contribute to depression, and the newly-diagnosed should be counseled and monitored for the development of depression.

It Goes Both Ways

“Certainly people diagnosed with diabetes who are faced with a life of this chronic disease are at greater risk of depression,” says Sherita Hill Golden, MD, Assistant Professor of Medicine and Epidemiology, The Johns Hopkins University School of Medicine, Baltimore, MD. “But depression can also come from the other direction. If people have chronic stress and depression, associated hormonal changes can occur and physicians need to be aware that such patients may be at increased risk of other diseases, including type 2 diabetes.”

In her presentation on “Psychological Stress, Depression and Diabetes: The Neuroendocrine Link,” she said that hypercortisolism associated with depression may be the pathway. She is further refining the association between hormone changes and diabetes by studying an elevation of the stress hormones cortisol and catecholamines which may be the potential link.

At the meeting, she reviewed studies that have noted the association going in both directions, that is diabetes causes depression, and depression causes diabetes. Dr. Golden spoke at the symposium on *Cause or Consequence? Novel Complications Associated with Diabetes*.

Special Attention Needed

Those who treat people with diabetes and depression on a daily basis do not appear to be as concerned with the issue of which came first. Rather, the focus is on the results of this comorbidity, which was demonstrated in another study presented by Russell E. Glasgow, PhD, Senior Scientist in the Clinical Research Unit, Kaiser Permanente, Colorado, Denver, CO.

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“Depression interferes with your ability to problem solve, so these individuals are less able to manage their diabetes,” said Dr. Glasgow.

In this study, the authors evaluated how people with diabetes and depression handled different problems related to diabetes self-management, such as handling dietary choices or decisions regarding when to exercise. A counselor taped study participants’ responses to discern their ability to cope with the typical challenges that people with diabetes face.

“We found that people who do better on problem solving do a better job of self-managing – with more frequent exercise sessions per week, and fewer calories consumed – and their blood test results show better control of their diabetes and cholesterol,” said Dr. Glasgow. Further, these achievements significantly were correlated with their level of depressive symptoms, in that those with the least depression did best.

“People who have diabetes and depression need to have their depression addressed because it interferes with problem solving ability and therefore their ability to manage their disease,” said Dr. Glasgow.

The American Diabetes Association is the nation's leading voluntary health organization supporting diabetes research, information and advocacy. Founded in 1940, the Association has offices in every region of the country, providing services to hundreds of communities. For more information, please call the American Diabetes Association at 1-800-DIABETES (1-800-342-2383) or visit www.diabetes.org. Information from both these sources is available in English and Spanish.

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