

Depression, Diabetes Linked in Women

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The link between diabetes and depression in women runs both ways....

According to Frank Hu, MD, PhD, of the Harvard School of Public Health, in a large prospective study, the risk of incident diabetes was increased for women with depressed mood, and the risk was higher if they were on antidepressant medications. Conversely, having diabetes increased the risk of incident depression over a decade of follow-up, and the risk rose with the severity of the disease.

The two-way association is partly explained by other known risk factors, such as adiposity and lifestyle variables, but is independent of them, Hu and colleagues reported.

The findings come from the Nurses' Health Study, a long-running cohort study started in 1976. For this analysis, the researchers looked at data from the participants starting in 1996, when questions related to clinical depression were first asked.

Hu and colleagues had information on 65,381 women, ages 50 to 75 in 1996, who were observed until 2006.

For the analysis of depression and incident diabetes, those with diabetes in 1996 or who were missing data on depression were excluded, leaving 57,880 women. For the study of diabetes and incident depression, 56,857 women were included, after leaving out those with depression at baseline, or who were either using or gave no information on antidepressant medications.

Hu and colleagues defined clinical depression as having diagnosed depression or using antidepressants, while depressed mood was either clinical depression or severe depressive symptoms, defined as a score of 52 or less on the five-item Mental Health Index. For the analysis, those with index scores of 86 through 100 were used as a reference group.

They confirmed self-reported diabetes using a supplementary questionnaire and medical record review. Participants without diabetes at baseline served as the reference group.

For depression and incident diabetes, they found:

- ◆ There were 2,844 new cases of diabetes over the 10 years of follow-up.
- ◆ Compared with the reference group, participants with Mental Health Index scores of 76 through 85, 53 through 75, or 52 and below had a monotonic elevated risk of developing diabetes, and the trend was significant at $P=0.002$ in the multivariate analysis.
- ◆ Participants with scores of 52 or less had an adjusted relative risk of developing diabetes of 1.17, with a 95% confidence interval from 1.05 to 1.30.
- ◆ Those using antidepressants were at higher relative risk after adjustment for covariates -- of 1.25, with a 95% confidence interval from 1.10 to 1.41.

On the other hand, the parallel analysis showed:

- ◆ There were 7,415 new cases of clinical depression over the decade of follow-up.
- ◆ Compared with the reference group, those with diabetes had a relative risk of developing clinical depression -- after controlling for covariates - of 1.29, with a 95% confidence interval from 1.18 to 1.40.

- ◆ The relative risks rose with disease severity: 1.25 and 1.24 for those without medications or using oral hypoglycemic agents, respectively, and 1.53 for those on insulin. The associations remained significant after adjusting for diabetes-related comorbidities.

Hu and colleagues noted that the study's strengths include its large size and prospective design. On the other hand, much of the data was self-reported and the participants were registered nurses and most were white, so the results might not apply to different populations.

Practice Pearl:

- ◆ Point out that this study, in conjunction with prior studies, indicates the importance of screening for depression in patients with diabetes, and screening for diabetes in patients with depression.

Pan A, et al "Bidirectional association between depression and Type 2 diabetes mellitus in women" Arch Intern Med 2010; 170(21): 1884-1891.