Hypothesis 2. Depression increases the risk for coronary heart disease in established diabetes.

Monique M. Williams, MD

Foundation Article

Summary and Commentary
Prospective population-based studies demonstrate that, among individuals without known coronary heart disease (CHD), those who are depressed are more likely to have a myocardial infarction (MI) or die from cardiovascular disease than those without depression.12 Clouse et al. hypothesized that depression plays a similar role in the clinical presentation of CHD in individuals with diabetes. Women were selected as the focus of their study because of the high prevalence and aggressive course of CHD in women with diabetes.

The study involved 76 women who composed the female subset of participants recruited and interviewed in 1982 for a study of the interrelationship of diabetes and psychiatric illness. The mean age of the subjects was 41.3 years, with a mean duration of diabetes of 12.4 years. Both type 1 (44.7%) and type 2 (55.3%) diabetic patients were enrolled. The majority of subjects were white (57.9%), with good representation of African Americans (40.8%). Lifetime and current diagnoses of major depression were determined with the National Institute of Mental Health Diagnostic Interview Schedule (DIS) and based on then-current criteria from the American Psychiatric Association’s Diagnostic and Statistical Manual. Subjects were evaluated for medical illnesses at each registry admission. Criteria for CHD were documented MI or ischemic electrocardiogram changes at rest or during an exercise treadmill test.

Sixteen subjects (21.1%) met crite-
Depressed and nondepressed subjects differed only in body mass index (BMI), with depressed subjects being more obese. Eleven subjects (14.5%) developed CHD over a maximum of 10 years of observation, and the number of CHD events was greater in the depressed group ($P < 0.01$). Depression accelerated the onset of CHD ($P < 0.01$), and the effect remained significant when controlling for BMI. The increased risk of CHD was specific to subjects with active depression at the index interview in that CHD occurred at similar rates in subjects with remote or no history of depression. The study shows that, for women with type 1 or type 2 diabetes, antecedent depression increases and accelerates incident CHD.

Clouse et al. confirmed depression as a potentially modifiable risk factor for CHD specifically in diabetic women. Diabetes is associated with earlier onset and more aggressive progression of atherosclerosis, and individuals with diabetes confront a markedly increased risk of developing CHD. Diabetes carries the same risk of significant cardiac events as established CHD in nondiabetic patients, and the protective effect of female sex is lost in women with diabetes. Significant cardiac events in diabetes, once they occur, are associated with higher risk of mortality. The association of diabetes with common comorbid illnesses including hyperlipidemia, hypertension, obesity, and smoking demonstrates the high burden of coronary risk factors seen in patients with diabetes. Because depression may represent another treatable coronary risk factor in a population of patients with high levels of cardiovascular disease and mortality, the importance of diagnosis and treatment is evident.

Depression is a devastating and often chronic disease and was the fourth leading cause of disability in 1990, exceeding disability conferred by ischemic heart disease. By 2020, depression will be the second leading cause of disability. Diabetes is associated with a twofold increase in depression as compared with the general population, with comorbid depression being seen in nearly 30% of patients with type 1 or type 2 diabetes. Depression in diabetes is a chronic disease, is associated with increased severity and number of diabetes complications, and has the potential for even greater disability among diabetic patients than in the population in general.

In nondiabetic samples, comorbid depression is common in CHD and other cardiovascular illnesses, is associated with increased risk of cardiovascular morbidity and mortality, and has an effect that is independent of traditional CHD risk factors. However, despite its potential relevance to medical outcome, evidence indicates that depression in CHD is underrecognized and undertreated; only 23% of depressed subjects in one study received treatment. Factors contributing to undertreatment of depression in CHD are not fully identified but may include the perception that depression associated with an MI or CHD is situational or transient, lack of recognition, or concern for polypharmacy or cost issues in patients confronted with a complicated cardiac medication regimen.

Elucidating mechanisms by which a major depressive episode accelerates manifestations of CHD, the major cause of mortality in diabetic patients, would help establish the relevance of depression as a risk factor and potential treatment target. Depression treatment is important in its own right for reducing disabilities associated with the functional and cognitive impairments of this illness. Linking depression more directly to CHD would further emphasize the importance of depression recognition and treatment for improved medical outcomes in diabetic patients.

Monique M. Williams, MD, is an instructor in medicine at Washington University School of Medicine in St. Louis, Mo.