

Depression in Elderly Diabetes Patients

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The prevalence of diabetes is growing significantly. Based on projected population growth, increases in diabetes incidence, and decreases in relative risk of death for individuals who have diabetes, the Centers for Disease Control and Prevention conservatively estimates that 12% of Americans will have diabetes by 2050.¹ This figure represents > 48 million people.

The elderly are at highest risk. In the group aged 65–74 years, it is projected that the number with diabetes will triple. In the group aged ≥ 75 years, the number of diabetes patients will increase to five times its present level. Elderly diabetes patients often have multiple medical problems (e.g., physical disabilities and mental and emotional problems) that complicate the illness. Furthermore, increased life expectancy means that more of the elderly will suffer impaired quality of life (e.g., pain and depression) because of diabetes-related complications.

There has been a growing call to understand the medical and psychosocial challenges that elderly diabetes patients confront. The 2003 publication “Guidelines for Improving the Care of the Older Person with Diabetes Mellitus”² highlighted the importance of individualizing the medical management of older diabetes patients and avoiding a one-size-fits-all approach. For example, the guidelines recommend targeting cardiovascular risks rather than aggressively treating hyperglycemia for many elderly patients.

The Elderly and Depression

The statistics concerning mental health of the elderly are also alarming. Approximately 20% of the elderly experience diagnosable mental disor-

ders (i.e., anxiety, severe cognitive impairment, and depression) that cannot be attributed to normal aging.³ Depression is a major concern.

Estimates suggest that 8–20% of community-dwelling elderly people can be diagnosed with major depression, with an aging-associated increase in depressive symptoms. Older adults have the highest rate of suicide of any age-group, and individuals > 85 years of age are most likely to commit suicide (twice the national rate).³ Depression is also associated with physical and cognitive decline.⁴

Yet, few acknowledge their problems. For those who do, only half receive treatment. For those who receive treatment, only 3% receive specialty psychiatric services.³ The reasons for underutilization of mental health services include stigma, minimization of the illness, and poor access to care.

Depression and Diabetes

Depression is an illness that may affect and be affected by diabetes. Depression is an independent risk factor for the onset of type 2 diabetes.⁵ It negatively affects the course of diabetes and is associated with increased risk of complications (especially heart disease), hyperglycemia, and mortality.^{6–8}

Depression may exert its negative effect through hormonal, neuronal, or immune system changes that directly affect the body’s ability to produce or use insulin. Or, the effect of depression may be indirect, by resulting in poor self-care behaviors, such as overeating, drinking alcohol, not exercising, skipping medications, or failing to keep medical appointments. Thus, identifying and treating depression in diabetes is strongly recommended.⁹

In addition, it is important to help our depressed patients because depression is a devastating illness that affects every aspect of an individual’s life. Patients who experience a major depressive episode may report negative changes in appetite, sleep, thinking, mood, energy, relationships, and self-worth that are so distressing that they affect work, family, and overall functioning and can result in thoughts or acts of self-harm or suicide.

Although diabetes patients are twice as likely as individuals who do not have diabetes to experience depression and about one-third of current diabetes patients require depression treatment, most patients do not receive such treatment.^{10,11} This may be because patients and physicians are uncomfortable discussing depression, believe that depression is a normal response to the emotional and physical challenges of diabetes, or know that mental health care is difficult to access. However, although the link between depression and diabetes may be understandable, it is not inevitable, and depressed diabetes patients can be treated successfully.^{12,13}

Depression in Elderly People With Diabetes

Given the described trends of growing numbers of elderly and increased rates of diabetes and depression, it is important to focus on the elderly who have comorbid diabetes and depression. Inevitable physical and psychosocial changes occur as people enter old age. The senior years are a developmental phase of life with its own unique challenges that affect the management of both diabetes and depression.¹⁴

Physical changes. Age-related physical changes can affect both diabetes and depression. Physical capacity declines because of decreases in muscle mass, aerobic capacity, visual and auditory acuity, bone strength, and joint flexibility, all contributing to physical, functional, and cognitive decline. These changes can be more pronounced in patients who have diabetes.^{15,16}

Also, complications associated with diabetes arise and may worsen as individuals age. Thus, aging eyes become more impaired by diabetic retinopathy, and aging feet become more impaired by diabetic neuropathy. There is evidence that depression in the diabetic elderly relates to the number of chronic conditions and poor physical functioning.¹⁷

The impact of hypoglycemia is also often greater for the elderly. They are more prone to hypoglycemic episodes resulting from taking multiple medications and the increased potential for drug interactions; metabolic changes that can affect the processing of oral diabetes drugs; hormonal changes that make it harder for them to identify when their blood glucose is too low; and appetite changes that result in missed meals.

Psychosocial changes. Some common psychosocial challenges of aging also can affect both diabetes and depression. The elderly must often deal with multiple losses of family and friends, changes in function and roles (e.g., retirement), and fears about mortality. Diabetes and its complications can exacerbate the difficulties associated with each of these transitions, and depression and despair may result.

The physical and psychosocial changes of aging may make it harder to manage diabetes because exercise, diet (e.g., meal planning and carbohydrate counting), and medication (e.g., taking multiple medications and dealing with insulin injections) regimens become more complicated when individuals' ability to follow their regimen may be impaired.

The interaction of depression and diabetes. A longitudinal study that examined the separate and combined effects of depression and diabetes among elderly Mexican Americans showed that the interaction of the two was "synergistic" (i.e., the presence of

both conditions predicted higher mortality, disability, and complications and earlier onset of these negative health outcomes).¹⁸

Evidence suggests that depression may relate to poorer glycemic control¹⁹ and that poorer control predicts a poorer course of depression in adult samples.^{20,21} There is some evidence that depression does not prospectively predict worsening of blood glucose control in the elderly,^{22,23} but more research needs to be done to understand this relationship in this group.

In interactions with the health care system, the presence of depression may influence decisions made by health care providers concerning medical outcomes (e.g., blood glucose and blood pressure). For example, providers may set goals that are easier to achieve, yet are less stringent, when they believe that depression will interfere with a patient's ability to adhere to a stricter regimen. Depression can also have an effect on patients' own goals and preferences for treatment, because depressed patients may feel too hopeless or helpless to embark on the lifestyle changes that are most beneficial for diabetes self-care.

Thus, in many different ways, diabetes may become more difficult to manage for elderly people who are also depressed, and depression may become more difficult to resolve in those who have diabetes, resulting in higher health care utilization and medical costs for those with this comorbidity.²⁴ The clinical guidelines for older adults with diabetes mellitus²⁵ have recognized this by recommending screening for and management of depression in diabetic elderly people.

Intervention Studies

Many intervention studies specifically exclude depressed patients based on the assumption that depression will interfere with subjects' ability to participate or benefit. However, there is no evidence that this is the case and some evidence that depression in the elderly does not preclude deriving benefit from a case management intervention.²²

Only two studies have explored the effect of a planned intervention on elderly diabetes patients' depression and diabetes outcomes. In one, the

focus was depression; in the other, it was glycemic control.

In the IMPACT (Improving Mood-Promoting Access to Collaborative Treatment) study, elderly primary care patients diagnosed with major depression or dysthymia ($n = 1,801$) were actively treated by a depression care manager.²⁶ A subgroup analysis looked at the self-described diabetes patients ($n = 417$).²⁷ The depression care manager, supervised by a psychiatrist and primary care provider, provided support, education, assistance in maintaining the use of antidepressants, and brief problem-solving psychotherapy, all tailored to individuals' needs and preferences. Results indicated that participants reported improvements in depressive symptoms, overall functioning, and adherence to recommended exercise^{26,28} and that many of these gains were maintained even after the intervention was discontinued.²⁹ The intervention did not result in improved glycemic control, although this finding may have resulted from the limited hemoglobin A_{1c} range in the study sample.

In the IDEATel (Informatics for Diabetes Education and Telemedicine) study, elderly, medically underserved, diabetes patients ($n = 1,665$) participated in a case management intervention delivered via telemedicine designed to affect medical outcomes.³⁰ The intervention resulted in improved glycemic control, blood pressure, and total and LDL cholesterol levels.³⁰ Although not designed to target depression, changes in depressive symptoms were assessed as a secondary outcome; it was found that the intervention did not result in improvement in depressive symptoms.³¹

These studies indicate that we can treat depression in elderly diabetes patients but that we probably must target depression specifically and not assume that any supportive intervention will result in improvement in depressive symptoms.

Implications

As health care professionals, we must be concerned with the mental health of elderly diabetes patients and the potential negative effects of depression on medical outcomes and diabetes self-care. Thus, we must be willing to

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screen for and institute management of depression. Yet, primary care providers assess depression in the elderly very infrequently. In one study of 389 videotapes of physician interactions with their elderly patients, depression assessment occurred in only 14% of visits, and formal measures were only used three times.³² We know that screening is simple to do, does not require extensive training, and can detect depression in the elderly. Tools such as the short form of the Geriatric Depression Scale,³³ the Patient Health Questionnaire-9,³⁴ and the newly developed Depression and Suicide Screen³⁵ are useful. A five-item version of the Geriatric Depression Scale has shown excellent sensitivity and specificity.³⁶ The five yes-or-no questions are:

1. Are you basically satisfied with your life?
2. Do you often get bored?
3. Do you often feel helpless?
4. Do you prefer to stay at home rather than going out and doing new things?
5. Do you feel pretty worthless the way you are now?

Positive answers are “no” to the first question and “yes” to the other four, and a score ≥ 2 suggests possible depression.

Once depression is identified, treatment must be available. With limited numbers of and access to specialized psychiatric providers, treatment will likely fall to primary care providers.

For pharmacological treatment, there is no evidence that one antidepressant is more effective than the others.³⁷ Providers should select an antidepressant that is less likely to negatively affect glycemia or weight and be mindful of other issues including side effects, drug interactions, and cost. Also, elderly patients may take longer to respond to treatment with antidepressants and may be more likely to relapse.³⁸ Thus, providers must take a patient and consistent stance and accept that depression, like diabetes, is a chronic illness. The best recommendations are 1) start low and go slow and 2) do not stop too soon.³⁹

Psychotherapy (e.g., cognitive behavior therapy, interpersonal psychotherapy, problem-solving therapy,

and reminiscence therapy) has also been shown to be beneficial for elderly patients.^{12,40} Although it is generally accepted that a combination of psychotherapy and medication yields more lasting gains than either component alone,^{41,42} evidence suggests that medication maintenance appears to prevent recurrence better than psychotherapy alone.⁴³ Other interventions can also be helpful, such as increasing socialization, encouraging exercise, providing physical or occupational therapy to maximize physical function, and involving family to enhance communication and support.

Conclusions

Depression has negative effects on diabetes outcomes, diabetes complicates depression, and these problems are both worse and growing in the elderly population. Whatever the underlying cause for the connection, the evidence for the relationship is quite strong. Thus, efforts to identify and treat depression in the diabetic elderly should be encouraged. It is important that specific attention be paid to the unique physical and emotional challenges experienced by elderly patients so that appropriate treatments can have maximum acceptability and efficacy and result in lasting gains. More research is needed with this growing and important group.

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