

Evaluation and Management of Geriatric Depression in Primary Care

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Geriatric depression is a common but frequently unrecognized or inadequately treated condition in the elderly population. Manifestations of major depression in elderly persons may hinder early detection; anxiety, somatic complaints, cognitive impairment, and concurrent medical and neurologic disorders are more frequent. Like major depression, minor depression, which is often ignored, produces morbidity for elderly persons. Both major and minor depression are associated with high mortality rates if left untreated. This article reviews the important aspects of geriatric depression for the nonpsychiatric clinician: the etiology of depressive conditions in the elderly

population, the unique clinical features of depression in older people, important evaluation considerations in a population with many medical and neurologic comorbidities, and the nonpharmacological and pharmacological treatment options for managing depression in the geriatric population.

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CNS = central nervous system; CT = computed tomography; ECT = electroconvulsive therapy; *DSM-IV* = *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; MDD = major depressive disorder; MRI = magnetic resonance imaging

Depression in elderly persons is a serious public health problem,¹ resulting in impaired physical, mental, and social functioning that burdens families and society. The National Institute of Mental Health Epidemiologic Catchment Area Study² reported that the prevalence of major depressive disorder (MDD) in adults aged 65 years or older is less than 1% (0.4% in men, 1.4% in women). However, more recent studies report much higher rates. Steffens et al³ found a 15.8% lifetime prevalence of major depression in an elderly population in Cache County, Utah, which is higher than the prevalence reported in the Epidemiologic Catchment Area Study and other reports. The elderly population is the most rapidly growing segment in the United States. In 2000, approximately 35 million people were aged 65 years or older.⁴ As the number of elderly persons increases, so does the prevalence of depression in this population. Jeste et al⁵ estimate that the number of elderly people with mental illness will increase from 4 million, reported in 1970, to 15 million in 2030.

Despite the common occurrence of depression in elderly persons, recognition of depression remains a problem.⁶⁻⁸ The frequent atypical presentation of depressive disorders in older persons, the resistance of many elderly people to acknowledge and report their symptoms to their primary care physician, and the increasing pressure of primary care physicians to spend less time with their patients contrib-

ute to the low recognition rate of depression in this age group. As a result, treatment is often delayed, if initiated at all. Untreated severe depression (similar to other chronic medical conditions such as chronic obstructive pulmonary disease) can result in increased mortality.⁹ This article presents practical guidelines for nonpsychiatric clinicians for recognizing and treating depression in the elderly population.

ETIOLOGY

Depression in older persons can be divided into early-life onset (before age 65 years), which recurs into old age, and late-life onset (after age 65 years), which begins in old age. Late-life depression is the primary focus of this article. Like early-onset depression, the specific cause of late-life depression remains unclear. However, biological, psychological, and social factors collectively have been associated with both early-life and late-life depressive disorders.

Although a known increased familial risk exists, no single biological factor has been identified as the cause of late-life depression. Genetic links have been studied, but no single gene has been associated with late-life depression. Many neurotransmitters, including catecholamines, serotonin, dopamine, and γ -aminobutyric acid, may contribute to the development of depressive symptoms. However, the exact role of each neurotransmitter is unclear. For example, both catecholamine excess and deficit have been linked to depression, which makes it less likely that catecholamine changes alone are the biological factor responsible for this condition. Low levels of cerebrospinal fluid 5-hydroxyindoleacetic acid, the principal metabolite of serotonin, are found in young and old patients with depression who com-

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Table 1. SAD PERSONS Scale to Assess Risk of Suicide

Sex	Male
Age	<19 or >45
Depression or hopelessness	Admits to depression or decreased concentration, appetite, sleep, libido
Previous attempts or psychiatric care	Previous inpatient or outpatient psychiatric care
Ethanol or drug use	Stigma of chronic addiction or recent frequent use
Rational thinking loss	Organic brain syndrome or psychosis
Social supports lacking	No close family, friends, job, or active religious affiliation
Organized plan or serious attempt	Well thought-out plan or "life-threatening" presentation
No spouse	Separated, divorced, or widowed
Sickness	Comorbid medical illness

Adapted from Patterson et al²⁰ with permission from American Psychiatric Publishing, Inc.

mit suicide. Older people experience cerebrovascular changes much more often than do younger people. This unique biological change may play a greater role in the manifestation of late-life depression than once believed. The "vascular depression hypothesis" proposes that cerebrovascular lesions disrupt the prefrontal systems or their modulating pathways, resulting in a distinctive clinical picture of depression in elderly persons characterized by apathy, motor retardation, and greater cognitive impairment.¹⁰ Clearly, several biological changes lead to the development of late-life depression.

In addition to the biological factors, psychological, social, and other medical factors predispose elderly persons to depressive illness in late life. Among the psychological stressors are changes in status that occur when individuals transition from an active work life to retirement. Death and deteriorating health of friends, loved ones, and other supportive people can strongly affect the development of depression. Social factors that can predispose elderly persons to depression include widowhood or divorce, a low socioeconomic level, poor social support, and recent adverse and unexpected life events.^{2,11} Men may be more adversely affected by these changes, which may account for the sex difference in the incidence of depression and suicide in the elderly population.² Finally, elderly persons have more medical and/or neurologic disorders than younger adults, and these comorbid conditions directly and indirectly increase the occurrence of late-life depression.

CLINICAL FEATURES AND COURSE

Early-life-onset major depression recurring into old age and late-life-onset major depression often vary according to age at onset, course of illness, and prognosis. By definition, early-life-onset major depression begins in early

adulthood and often runs a long-term course, continuing into late adulthood. Late-life depression occurs more frequently in the context of medical illness, has a higher rate of cognitive impairment, and often is associated with cerebrovascular abnormalities.¹ Late-life depression may herald the development of dementia. Emery and Oxman¹² proposed that late-life mood disorders and cognitive abnormalities may exist on a continuum and that major depression with extensive cognitive impairment is the pivotal condition linking the two.

The criteria for establishing the presence of early-life depression or late-life depression are similar. This diagnostic criteria for MDD (based on a consensus of experts included in the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [DSM-IV]*)¹³ state that 5 or more of the following symptoms must be present for at least 2 weeks: (1) depressed mood, (2) loss of interest or pleasure in activities, (3) changes in weight or appetite, (4) insomnia or hypersomnia, (5) psychomotor agitation or retardation, (6) low energy, (7) feelings of worthlessness, (8) poor concentration, and (9) recurrent suicidal ideation or suicide attempt.

Although the basic criteria for MDD in early life and late life are similar, comorbid conditions may be more prominent in late-life depression. Anxiety, somatic complaints, memory loss, or cognitive impairment may be the most prominent presenting symptoms.¹⁴ Comorbid psychosis is common in elderly persons. Psychotic symptoms are present in 20% to 45% of hospitalized elderly patients with depression and in 3.6% of community-dwelling elderly patients with depression.¹¹ Psychotic symptoms include delusions that commonly involve themes of persecution, guilt, nihilism, and somatic complaints.^{15,16} Along with psychoses, elderly persons with MDD have frequent suicidal thoughts or plans.

Although elderly persons make up only 10% of the US general population, they commit approximately 20% of all suicides¹⁷; depression is the most frequent cause.¹⁸ Elderly patients with depression discuss suicide less openly, use more violent methods, and are more likely to complete suicide.¹⁹ Detection and treatment of depression in older persons is vital to reduce the risk of suicide in this population. The SAD PERSONS scale in Table 1²⁰ helps assess the risk of depression and suicide.

Although late-life major depression is frequent in the elderly population, the presence of late-life minor depression may be more common.²¹ This syndrome has also been labeled as *subsyndromal depression*, *mild depression*, *subclinical depression*, and *subthreshold depression*.¹ *Minor depression* is defined as having 2 to 4 depressive symptoms as described in *DSM-IV* criteria for major depression. Also, overall impairment may be less, but functional disability

still exists. The subsyndromal state may be associated with an increased risk for developing major depression.^{1,6}

COMORBIDITIES

Psychiatric Disorders

As mentioned earlier, anxiety frequently accompanies major depression in elderly persons. Generalized anxiety or panic symptoms in the elderly population include tremor, body aches and pains, fatigability, restlessness, palpitations, dizziness, faintness, diaphoresis, paresthesia, nausea and vomiting, frequent urination, facial flushing, insomnia, and dyspnea.²² The somatic focus of anxiety symptoms may be mistakenly ascribed to medical illnesses and hence easily missed.

Substance abuse in the elderly population is frequently unrecognized. It may directly or indirectly affect the prevalence and severity of depressive disorders.^{23,24} Substances most frequently abused by elderly persons include nicotine, sedative-hypnotics, and alcohol.²⁵ Although nicotine has not been associated directly with depression in elderly persons, nicotine use contributes to many of the chronic and life-threatening medical conditions associated with higher depression rates such as chronic obstructive pulmonary disease and lung cancer. Sedative-hypnotics, often prescribed for insomnia or anxiety, may contribute to both depression and cognitive changes in older people. Higher rates of falls and associated injuries in older persons, which affect their physical health and psychosocial well-being, have been attributed to sedative-hypnotics.²⁶

Alcohol abuse and/or dependence is a growing problem for the elderly population. Suicide risk in elderly persons with depression increases with comorbid alcohol abuse and/or dependence.²⁷ Although formal epidemiological studies have identified low rates of alcohol dependence in elderly persons, many investigators believe this is an underestimation of the problem.²⁸ Alcohol abuse or dependence should be considered in patients who have frequent falls, head injuries, weakness, and especially cognitive changes. The CAGE questionnaire (Table 2²⁹) is a simple, reliable, and quick screening instrument for possible alcoholism. One positive answer should raise suspicion; 2 positive answers indicate an alcohol use problem that requires further assessment and intervention.³⁰

Neurologic Disorders

Depression in patients with neurologic disease is common. The most common neurologic disorders associated with depression are Alzheimer disease, Parkinson disease, and cerebrovascular disorders. Depression rates range from 17% to 31% in persons with Alzheimer disease; rates are approximately 50% in patients with Parkinson disease and

Table 2. CAGE Questionnaire²⁹

Cut down	Have you ever felt you should cut down on your drinking?
Annoyed	Have people annoyed you by criticizing your drinking?
Guilty	Have you ever felt bad or guilty about your drinking?
Eye-opener	Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover?

about 25% in stroke patients.¹¹ The occurrence of depression in conjunction with neurologic disease results in substantially increased morbidity, especially in the form of cognitive impairment. Determining whether depression exists in this population is often difficult. Several assessment tools are available to help distinguish coexisting neurologic or medical conditions from major depression. One such tool is the Endicott criteria for major depression in the medically ill, discussed in the "Medical Disorders" section. Often, aggressive treatment of depressive symptoms is the only way to fully appreciate the effect of depression on the underlying neurologic disorder.

Medical Disorders

Many medical disorders are associated with higher rates of depressive symptoms. Individuals with diabetes, coronary artery disease, and cancer have higher rates of depression.³¹ Hypothyroidism, autoimmune diseases, connective tissue disorders, and some infections, especially those producing pneumonia, commonly cause depressive symptoms. Most medications have been associated with depression, but the most common ones include corticosteroids and sedative-hypnotics.

Differentiating symptoms of primary depressive problems from symptoms of coexisting medical illness may be problematic. One approach is to determine whether an individual meets criteria for MDD by use of Endicott substitution criteria.³² In this approach, somatic symptoms in the medically ill are substituted with nonsomatic alternatives, ie, change in weight and appetite with tearfulness and depressed mood, sleep problems with social withdrawal, fatigue with pessimism and self-pity, and poor concentration with lack of reactivity. This method can be used to identify psychological symptoms of depression that indicate MDD in elderly persons who are medically ill.

EVALUATION

A diagnosis of major depression requires a careful medical history and thorough medical and neurologic evaluations. Focusing on recent life changes, social factors, and the

presence of medical or neurologic symptoms is important. The screening medical assessment should include an electrolyte panel, fasting serum glucose level, serum glutamic-oxaloacetic transaminase, serum creatinine level, complete blood cell count, sensitive thyroid-stimulating hormone, electrocardiography, chest radiography, and urinalysis. A thorough neurologic examination should determine the need for further neuropsychological testing and neuroimaging.

Neuropsychological testing helps physicians distinguish depressive disorders from central nervous system (CNS) dysfunction. The goals of neuropsychological evaluation in this setting are to (1) establish cognitive status, (2) distinguish depression from dementia or age-appropriate cognitive decline, and (3) make psychological management recommendations on the basis of findings.³³

In the absence of symptoms of comorbid CNS disease, structural neuroimaging may not add much to the evaluation. However, when neurologic signs and symptoms exist, brain computed tomography (CT) or magnetic resonance imaging (MRI) should be performed. Computed tomography may quickly and less expensively determine CNS hemorrhage, infarct, or tumor; MRI may better delineate vascular or demyelinating conditions. Although single-photon emission CT, positron emission tomography, and functional MRI are considered primarily to be functional imaging research tools rather than clinical tools, single-photon emission CT has been used to differentiate depression from dementia by establishing the presence of abnormalities in frontal and/or temporal areas.³⁴

MANAGEMENT

Most elderly patients present to their primary care physicians for their mental health problems. Elderly individuals with depression often overuse inpatient and outpatient health services before their illness is recognized.³⁵ Early recognition and treatment of depression may help alleviate this problem. Short-term and long-term treatment includes pharmacological and nonpharmacological management. The goals in treating depression in elderly persons include resolution of symptoms, prevention of relapse and recurrence, and improvement of functional capacity.

Nonpharmacological Interventions

Psychotherapeutic interventions can be beneficial alone or in conjunction with pharmacological interventions in the treatment of geriatric depression. Supportive psychotherapy should be provided by the primary care physician. When this is insufficient and more intensive psychotherapy is needed, the patient should be referred to an

appropriate mental health care provider. Additional interventions, including more structured forms of therapy such as cognitive behavioral psychotherapy and interpersonal psychotherapy, have been shown in randomized clinical trials to be as efficacious as medications for cognitively intact elderly patients with mild to moderate depression.^{36,37} A combination of formal psychotherapeutic interventions and pharmacological agents is more efficacious for moderate to severe depression than either form of treatment alone.

Pharmacological Interventions

Four issues must be addressed when considering pharmacological interventions in treating depression in the elderly population: (1) response vs remission, (2) safety, (3) length of short-term treatment, and (4) need for continuation and/or maintenance therapy. Evidence for the efficacy of antidepressant medication in the treatment of geriatric depression is emerging. Schneider and Olin³⁸ reviewed literature about antidepressant use in short-term management of late-life depression and found that tricyclic antidepressants and brief structured psychotherapy were both efficacious. In their randomized controlled trial, Reynolds et al³⁹ confirmed the efficacy of pharmacological (nortriptyline) interventions, nonpharmacological interventions (interpersonal therapy), or both in the treatment of major depression in the elderly population. Roose and Sackeim⁴⁰ recently reviewed randomized placebo-controlled clinical trials of antidepressant medication for late-life depression. Only 4 placebo-controlled trials and 6 comparative trials exist currently. The agents studied include nortriptyline, phenelzine, fluoxetine, sertraline, citalopram, paroxetine, mirtazapine, and venlafaxine. The results are mixed, and no single agent or class of agents has been found to be clearly superior to the others. This in part may be due to the length of the trials, which varied from 6 to 12 weeks. However, all the trials reported response (but not necessarily remission) to the antidepressant medications. The newer agents appear to have fewer adverse effects than the older agents in the geriatric population.

On the basis of current evidence for efficacy and safety, guidelines for pharmacological treatment of late-life depression were developed by the Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) group. Selective serotonin reuptake inhibitors are the recommended first-line antidepressant.^{41,42} The various antidepressants and their daily dosages based on prescribing information are summarized in Table 3.⁴³ In general, it is acceptable to initiate doses at half the usual adult dosage and then titrate slowly for a few weeks to the optimal dose, if tolerated. An adequate medication trial requires 6 or more weeks of a recommended dosage.

Table 3. Daily Dosages for Various Antidepressants*⁴³

Antidepressant	Daily dosage (mg/d)		Most common or potentially serious adverse effects
	Initial	Usual range	
Selective serotonin reuptake inhibitors			
Citalopram	10	20-40	GI symptoms, sexual dysfunction
Fluoxetine	10	10-50	GI symptoms, sexual dysfunction, insomnia
Fluvoxamine	50	100-300	GI symptoms, sexual dysfunction
Paroxetine	10	10-40	GI symptoms, sexual dysfunction
Sertraline	25	50-150	GI symptoms, sexual dysfunction
Others			
Trazodone	25	75-300	Sedation
Bupropion	75-100	200-300	GI symptoms, agitation, seizures
Mirtazapine	7.5-15	15-45	Sedation, weight changes, pain, bone marrow toxicity
Venlafaxine	50-75	75-225	GI symptoms, hypertension
Tricyclic antidepressants			
Nortriptyline	10-25	50-150	Sedation, cardiac conduction abnormality, anticholinergic reaction, orthostasis
Desipramine	10-25	75-150	Sedation, cardiac conduction abnormality, anticholinergic reaction, orthostasis

*GI = gastrointestinal.

Treatment of major depression in the setting of comorbid anxiety, drug dependence, or medical or neurologic disorder is less clear.⁴⁴ Benzodiazepines are effective in reducing anxiety symptoms and are widely prescribed. However, benzodiazepine use in elderly persons can be problematic.⁴⁵ Complications include oversedation, cognitive impairment, falls, paradoxical agitation, intoxication, abuse, withdrawal, and depression. Short-acting benzodiazepines with nonactive metabolites (lorazepam, oxazepam, temazepam) are the preferred agents for this population.²² They should be used short-term until the diagnosis of underlying depression is addressed. Treatment of depression in the context of substance abuse, especially alcohol or sedative-hypnotic dependence, is unclear. Mild symptoms of depression often resolve with the treatment of substance dependence within weeks to months. However, if symptoms are moderate to severe, treatment of both conditions should occur simultaneously.

Well-controlled trials of antidepressants vs placebo in patients with major depression and another condition have reported mixed results. For example, the Reifler et al study³⁶ of imipramine vs placebo for the treatment of depression in persons with dementia was inconclusive. Nelson et al⁴⁶ examined the use of nortriptyline vs paroxetine in patients with ischemic heart disease; their findings were more hopeful, especially for those taking paroxetine.

Although response to pharmacological agents is common, complete remission from depression is less frequent.

Factors contributing to full remission have not been fully elucidated. However, several psychosocial and clinical factors have been identified as predictors of remission from depression. Better rates of remission are reported for persons with adequate social support, better medical health, early and aggressive treatment with antidepressants and/or antipsychotics, and use of electroconvulsive therapy (ECT) when appropriate.⁴⁷

After short-term remission of depressive symptoms, continuation of treatment during the next 6 months helps prevent relapse. Guidelines for continuation treatment of major depression in younger adults have been well established⁴⁸ and have been adapted for geriatric patients. Beyond continuation treatment, guidelines for maintenance therapy to prevent recurrence have not been established in younger or older adults. Some physicians advocate long-term treatment for patients who have recurrent depressive episodes.

ECT and Other Physical Modalities

Electroconvulsive therapy remains the treatment of choice for severe MDD in geriatric patients with psychotic depression, for those who cannot tolerate the adverse effects of antidepressant medications, or for those in whom antidepressant drug therapy has failed. Electroconvulsive therapy for depression is safe and effective and has an 80% to 90% remission rate in elderly patients.⁴⁹ The most important adverse effect is memory impairment, which is often transient. However, ECT can be lifesaving for the most severely ill. Currently, other

physical modalities for treatment of depression, including transcranial magnetic stimulation and vagal nerve stimulation, are experimental.

CONCLUSION

Primary care physicians are often the first medical contact that geriatric patients will make when depressive symptoms develop. Older people with depression often present with unexplained physical symptoms that impair their ability to function and enjoy life. Improved detection of depression in older persons and earlier interventions with treatment by primary care physicians are crucial in preventing disability and suicide. Indications for psychiatric referral include diagnostic difficulty; depression with comorbid psychiatric symptoms such as escalating anxiety, psychosis, or suicidality; depression with comorbid medical or neurologic conditions; failed medication trials or inability to tolerate antidepressants; and moderate to severe symptoms requiring more intensive psychotherapeutic interventions or ECT.⁵⁰

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The Symposium on Geriatrics will continue in the December issue.