

Overview:

Depression in the Elderly

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Abstract

Depression in the elderly population is a major public health problem. It has a high prevalence, is frequently co-morbid with medical illnesses, impacts negatively on quality of life, increases the number of visits to different medical services, and carries a high risk of suicide, especially in men. Imaging studies have increased our understanding of the biological mechanisms of depression in the elderly. Depression is sometimes difficult to diagnose in the elderly. It should be differentiated from apathetic states (“negative syndrome”), and its treatment requires knowledge of specific physiological changes that occur in this age group. Geriatric depression is more somatic and less ideational than depression in other age groups. Acute treatments with various antidepressant medications, augmentation strategies, electroconvulsive treatments, and psychotherapy must be coupled with maintenance strategies to prevent recurrences, which are common.

Key Words: Depression, elderly, diagnosis, treatment.

DEPRESSION IN PEOPLE aged 65 years and older is a major public health problem (1, 2). It causes suffering to many who go undiagnosed and untreated, and it burdens families and institutions that provide care for the elderly, by disabling those who might otherwise be independent and productive (2). Utilization of medical outpatient services increases. Depressed older people consult their general practitioner two to three times more often than nondepressed elders (3). Early recognition, diagnosis, and initiation of treatment for depression in older people present opportunities for improving their quality of life, preventing suffering or premature death, and maintaining optimal levels of function and independence (2).

Epidemiology

Prevalence

The prevalence of major depression in the geriatric population, regardless of ethnicity, is

1.4% in women, 0.4% in men, and 1% overall. Approximately 2% of the elderly suffer from dysthymic disorder, and 4% have an adjustment disorder with depressed mood. Approximately 15% have depressive symptoms that do not meet criteria for a specific depressive syndrome. Alexopoulos (4) has stated, “In older patients treated in primary care settings, depression was identified in 17–37% of patients; 30% of these patients had major depression and the remainder had a variety of depressive syndromes that could benefit from medical attention. In medically hospitalized patients, major depression occurs in 11%, and less severe yet clinically significant depressive symptoms are identified in 25% of the population. The corresponding figures for patients treated in long-term care settings are 12% and 30%, respectively.”

Risk Factors

Women have higher rates of all types of depression than do men (2). The major social and demographic risk factors for depression in the elderly are: female gender; single status, particularly for the widowed; stressful life events; and lack of a supportive social network (5).

Mortality

Mortality rates by suicide and other causes are higher among elderly persons with depres-

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sion than their nondepressed counterparts (5). Depressive symptoms are found to be an independent risk factor for mortality in community-residing older adults (6). The increased rates of suicide (1, 3, 7) in the elderly may contribute to this latter outcome.

The elderly age group has the highest risk for suicide of all age groups (4, 5, 8, 9). The major social and demographic risk factors for suicide among the elderly are: old age, male gender, white race and unmarried status (2, 4, 9, 10). The suicide rate for white American men 65 years and older is five times that of the general population (4, 11, 12). Generally, these suicidal patients are suffering from their first episode of major depression, which is moderately severe, yet the depressive symptoms have gone unrecognized and untreated (5).

Most elderly persons who commit suicide communicate their suicidal thoughts to family or friends before killing themselves (4). More than three-fourths of these individuals visit a primary care physician about general medical problems and somatic complaints less than one month prior to their suicide (2, 5, 12–14), 39% the week before (2). Although it would not be feasible to screen all older primary care patients for suicidality, physicians should ask about suicidal thoughts in all older patients who present with symptoms of depression (2). There should be no reluctance to question patients about suicidal ideation, because there is no evidence that such questions can increase the likelihood of suicidal behavior (4).

DSM-IV Diagnosis

Despite an intensive search for biological and structural correlates of late-life depression, no specific diagnostic test can be recommended for clinical practice (5). Tables 1 and 2 list the *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition (DSM-IV) symptoms of major depressive disorder and dysthymic disorder (15). The “depressive disorder not otherwise specified” category includes disorders with depressive features that do not meet the criteria for major depressive disorder, dysthymic disorder, adjustment disorder with depressed mood, and adjustment disorder with mixed anxiety and depressed mood. Other DSM-IV disorders such as adjustment disorder, bereavement, mood disorder due to general medical condition, substance-induced mood disorder, sleep disorder, hypochondriasis, and even psychotic disorders, may be manifested by a depressive picture.

TABLE 1
Symptoms of Major Depression

1. Depressed mood
2. Loss of interests
3. Weight loss or appetite change
4. Insomnia or hypersomnia
5. Psychomotor agitation or retardation
6. Loss of energy or fatigue
7. Feelings of worthlessness or guilt
8. Difficulty with concentration or decision making
9. Recurrent thoughts of death or suicide

TABLE 2
Symptoms of Dysthymic Disorder

1. Depressed mood
2. Poor appetite or overeating
3. Insomnia or hypersomnia
4. Low energy or fatigue
5. Low self-esteem
6. Difficulty with concentration or decision making
7. Feelings of hopelessness

Clinical Characteristics of Elder Depression

What often makes depression in the elderly so insidious is that neither the victim nor the health care provider may recognize its symptoms in the context of the multiple physical problems of many elderly people. Depressed mood, the typical signature of depression, may be less prominent than other depressive symptoms such as loss of appetite, sleeplessness, anergia, and loss of interest (2, 5). Elderly depressed persons are more likely than younger depressed adults to express somatic complaints, fail to report feelings of guilt, and minimize the presence of depressed mood (“masked depression”) (4). That is why it is prudent to inquire about satisfaction with life, hopefulness, worthlessness, helplessness, preoccupations, motivations, worrying, etc. when diagnosing depression in the elderly, even if the patient denies feeling depressed. Hypochondriacal symptoms occur in approximately 65% of elderly persons with depression (4). Thus, it may be said that geriatric depression is less ideational and more somatic.

Elderly depressed persons are more likely than younger persons to have psychotic (delusional) depression. The usual themes of depressive delusions are guilt, hypochondriasis, nihilism, persecution, and sometimes jealousy (4).

When dealing with the elderly age group, both clinicians and patients may incorrectly at-

tribute depressive symptoms to the aging process (5). It has been repeatedly stressed that depression is a clinical syndrome, not part of normal aging (3, 5, 16).

Central Nervous System Changes

Late-onset depression often is associated with a variety of brain abnormalities, such as ventriculomegaly, and significant reduction of brain volume and white-matter hyperintensities, most commonly involving selective prefrontal, superior temporal, and anterior parietal cortex (2, 17–19). Reductions in global cortical cerebral blood flow and cerebral metabolic rate have been reported in late-life depression (17, 20–22). Postmortem studies demonstrate a reduction in thickness and size of neurons and neuronal cell bodies, and decrease in glial density in the orbital frontal cortex (23).

Geriatric depression is often co-morbid with vascular disorders and is accompanied by lesions in the basal ganglia and prefrontal areas of the brain (2). Available evidence suggests that depression accompanying cerebrovascular disease is more likely to be associated with frontal/subcortical dysfunction than with damage to other regional brain areas (24).

Serotonin (5-HT) neurotransmission has recently become a focus of attention in depression research. Interestingly, limited research involving the 5-HT system in human aging has provided some evidence of reductions of 5-HT binding with advanced age (22, 25–27). No clear pattern of the effects of aging on overall 5-HT activity (e.g., transmitter and metabolite concentrations and turnover) could be identified (22), although there was a suggestion of increased 5-HT turnover in the elderly (28, 29). Serotonin dysregulation may be associated with geriatric major depressive disorder (22).

Medical Co-morbidities

Late-onset depression is associated with a lower frequency of family history of depression but a higher frequency of cognitive impairment, cerebral atrophy, deep white matter changes, recurrences, medical co-morbidity, and mortality than in younger patients (4, 5). Medical co-morbidity includes cancer, cardiovascular disease, neurological disorders, various metabolic disturbances, arthritis, and sensory loss (5).

In clinical populations of elderly persons, depression occurs in approximately 20–25% of patients suffering a stroke (4), with a preva-

lence of up to 50% within the first month after a stroke (24). Cerebrovascular disease may predispose, precipitate, or perpetuate some geriatric depressive syndromes (4). Basal ganglia and left-hemisphere lesions, especially those close to the frontal pole, are most frequently associated with post-stroke depression. Cortical and lacunar infarcts have the highest co-morbidity with depression (4).

The prevalence of significant levels of depression in Parkinson's disease (PD) is estimated to be 40%. The relationship between mood and motor phenomena in PD is complex. PD can be misdiagnosed as a primary depressive illness, and concomitant depression may go unrecognized in PD patients. It can be difficult to tease apart which clinical phenomena are related to primary motor dysfunction as opposed to primary depression. For example, the slowed movement of bradykinesia and masked faces in PD are well-recognized components of depression, usually described as psychomotor retardation and restricted affect. This can be observed in PD patients with depression who are receiving treatment. Motor improvement with antiparkinsonian medications is not associated with improved mood (30). Electroconvulsive therapy (ECT) can effectively treat both depressive and psychotic symptoms with concurrent enhancement of motor function in Parkinson's disease patients (31), with motor dysfunction generally improving prior to improvement in mood (32).

Depressive manifestations of various intensities occur in approximately 50% of demented patients; major depression occurs in 15–20% of patients with Alzheimer's disease (4). Some depressed elderly patients develop a dementia syndrome that resolves either completely or partially after remission of depression. Terms such as "pseudodementia," "dementia of depression," or "depression with reversible dementia" have been used to describe this transient cognitive syndrome. Depressed elderly patients who have only partial cognitive improvement after the amelioration of depression usually have an early-stage dementing disorder; their cognitive symptoms may be exacerbated when the depressive syndrome is superimposed (2, 4).

Many symptoms and signs of the depressive syndrome overlap with manifestations of medical and neurological diseases. For example, insomnia, fatigue, agitation, and psychomotor retardation can be caused by many medical illnesses and dementing disorders (4). Apathy, part

of a frontal lobe syndrome, may be misidentified as the retardation characteristic of depression. Apathy can present in a variety of medical and psychiatric disorders, including PD, delirium, dementia, schizophrenia, “apathetic hyperthyroidism,” and amphetamine or cocaine withdrawal, or as an independent syndrome (33), sometimes indistinguishable from negative symptoms in schizophrenia (flat affect, poverty of ideas, asociality, inactivity) (34).

Distinguishing between such symptoms as affective flattening or blunting, alogia, avolition-apathy, anhedonia-asociality, and inattentiveness, and depression is necessary to be able to predict the course of the disease and plan for treatment and rehabilitation. Diseases in which negative symptoms are present may or may not be co-morbid with depression. However, both negative symptoms and depression can significantly affect the recovery and functioning of these patients. Clinically, negative and depressive symptoms overlap significantly. Even though it might be difficult to distinguish between them, adequate management is possible only if these two syndromes are correctly diagnosed (34).

Treatment

Treatment of depression can reduce excessive levels of disability and result in improved levels of functioning (2). Psychotherapy, drug therapy, or ECT used alone or in combinations is effective in the treatment of geriatric depression (4, 5). The effectiveness of such treatments for less severe depression, which may negatively affect quality of life, is unclear. These treatments can be associated with increased risk of co-morbid medical illnesses (5).

The goals of treatment are to achieve remission of symptoms, prevent relapse and recurrence, improve quality of life and functional capacity, and perhaps to improve medical health status and decrease health care costs and mortality (2, 5).

Pharmacotherapy

Physiology. From roughly age 40 onward, changes in body composition, renal function, cardiac output, and other physiologic processes begin to accelerate, resulting in an age-related increase in the variability of drug disposition and response, and an overall gradual diminution in the rate of drug elimination. Thus, it takes longer to achieve steady-state plasma concentrations and to wash drugs out of older patients. The variability in pharmacokinetics is such that

dosing for elderly patients is less predictable than for younger adults. Recommended initial doses for all antidepressants are lower for the elderly, although optimal doses may not differ from those for younger patients once dosing is individualized (35).

Antidepressants. Selective serotonin re-uptake inhibitors (SSRIs) are a common, preferred treatment for acute episodes of depression in elderly patients, because of their favorable side-effect profile, relative safety in overdose, ease of use, smaller dosage adjustment, and greater acceptance (2, 16, 36). Unlike a tricyclic antidepressant (TCA), an SSRI will have minimal cardiovascular effects and will not worsen cognition, since it has less anticholinergic toxicity (2, 16). Common complaints linked to SSRIs include nausea, diarrhea, insomnia, sedation, headache, agitation, and anxiety (2, 16). More problematic adverse effects in older patients include SSRI-induced syndrome of inappropriate antidiuretic hormone secretion, extrapyramidal symptoms (EPS), and bradycardia (2).

The risk of developing hyponatremia while on an SSRI seems to be higher with increasing age, female sex, previous history of hyponatremia and the concomitant use of other medications known to cause hyponatremia. In the majority of cases, SSRI-associated hyponatremia is transient, mild and asymptomatic. SSRI-induced hyponatremia may not necessarily recur with all SSRIs, and tolerance may develop over time (36).

Drug-induced Parkinsonism, including dystonic reactions and akathisia, as well as worsening of motor disability in patients suffering from idiopathic Parkinson’s disease, has been reported in older patients treated with SSRIs. In general, the positives of SSRI therapy far outweigh the potential for EPS, even in patients such as the elderly, who are at greater risk for movement disorder (37).

The tricyclic antidepressants (TCAs) are effective medications for major depressive disorders in the elderly and very elderly. Blood levels necessary to achieve a therapeutic effect for the very elderly are the same as for younger adults, although most older people are more sensitive to both the therapeutic and toxic effects of TCAs. While the TCAs are effective as antidepressants, altered pharmacokinetics and adverse effects may interfere with the usefulness of TCAs in treating very elderly patients with depression. Annoying side effects of TCAs, particularly constipation and dry mouth, can become severe problems in the elderly,

leading to bowel obstruction and diminished ability to eat. Central nervous system anticholinergic side effects, which usually consist of decreased memory and attention, can progress to a delirious state with severe symptoms of cognitive impairment, nighttime confusion (sundowning), and delirium (16). Orthostatic hypotension, sedation, and cardiac toxic effects can also be particularly problematic for older persons (2). The most commonly used and studied TCAs have been nortriptyline and desipramine, because they have a more favorable side-effect spectrum than amitriptyline and imipramine (5).

In trials that directly compare SSRIs with TCAs, the SSRIs fluoxetine, sertraline, and paroxetine are roughly equivalent to TCAs in efficacy in the elderly, with 60–80% of patients responding to treatment (2). However, the SSRI sertraline was found to have a significant advantage over the TCA nortriptyline among patients 70 years old and over, with respect to time to achieve response and duration of remission (38). Interestingly, nortriptyline may be more effective than fluoxetine in elderly inpatients with severe depression and heart disease (2). However, unlike SSRIs, nortriptyline treatment has been associated with a significant increase in pulse rate in the elderly (38).

Other antidepressant drugs prescribed for elderly patients with depression include bupropion, venlafaxine, nefazodone and mirtazapine. Bupropion has no anticholinergic side effects. Venlafaxine resembles a TCA in pharmacologic properties but lacks anticholinergic effects. Nefazodone and mirtazapine are useful for bedtime sedation but may cause daytime drowsiness (16).

Monoamine oxidase inhibitors (MAOIs) are not frequently used to treat elderly patients because of concerns about side effects and drug interactions. They are well tolerated and effective in young-elderly patients (in their late 60s and 70s) with major depression, but they have not been adequately studied in the very old. The most frequent side effect of MAOIs is orthostatic hypotension, which in elderly patients may lead to falls. MAOIs require abstinence from tyramine-rich foods (mainly cheese and aged, pickled, or fermented meat or fish); otherwise, a hypertensive crisis may ensue. MAOIs have multiple drug-drug interactions. Concomitant administration of MAOIs with an SSRI may lead to a catastrophic serotonin syndrome (4).

With all antidepressants, clinicians usually “start low and go slow” (i.e., use low initial

doses and increase the dose gradually) (16). Antidepressant drugs should be administered at adequate plasma levels or dosages and for a sufficient length of time. An adequate antidepressant trial for the elderly person may be longer than for the younger adult (4, 5), lasting up to 12 months.

Psychostimulants such as dextroamphetamine and methylphenidate have limited efficacy in treating geriatric major depression. However, psychostimulants appear to reduce apathy and anergy in medical patients. Psychostimulants have a rapid onset of action, minimal side effects, limited potential for tolerance, and a low risk for addiction (4, 34).

There is increasing recognition that a majority of major depressions are recurrent, particularly in the geriatric population; therefore, a central issue in treatment is the prevention of recurrence. Although there are relatively few clinical trials of maintenance treatment for elderly patients, continuation of antidepressants has been shown to confer significantly greater protection against recurrence than placebo. Although clinicians often reduce doses during the maintenance phase, preliminary evidence suggests that continuation of the dose and plasma level that was effective in the acute treatment phase offers increased protection against recurrence (5).

The recommendations for length of maintenance treatment are for at least 6 months of treatment beyond recovery for those with first onset in late life and for at least 12 months for those with a recurrent illness. Older patients with recurrent depression may need antidepressant treatment indefinitely to remain well (2). Some even suggest long-term treatment for all elderly patients with first-episode major depression (39). Long-term treatment should be of the same type and the same intensity as that which was successful in the initial, acute phase (2).

A number of augmenting techniques, e.g., techniques used to treat nonresponders or partial responders to antidepressants, have been used in the treatment of depression. Augmentation involves maintaining a therapeutic dose of an antidepressant and adding another agent. In younger adults SSRIs and TCAs have been shown to be augmented by lithium, triiodothyronine, buspirone, pindolol, and psychostimulants. However, most of these agents have not been studied in elderly populations. Lithium has been shown to augment tricyclic antidepressant response in elderly patients. Augmentation techniques are not well tolerated by a large number of geriatric patients (4).

Electroconvulsive Therapy

The evidence for short-term efficacy of electroconvulsive therapy (ECT) is strong (5). ECT is increasingly recognized as a useful treatment for severe or medication-resistant depression in older persons. In general, ECT is a low-risk procedure and is considered a safe, effective, and efficient treatment for depression. The efficiency of ECT does not diminish with age, and case reports attest to its safe use in patients as old as 102 (31).

Most patients have some degree of anterograde and retrograde amnesia during the treatment course, but most recover fully. There is no evidence that ECT causes structural brain disease, and in most cases there is no permanent objective cognitive deficit, with the exception of some loss of memory of events around the time of the ECT (31). ECT-induced delirium is transient and generally has a benign outcome. ECT is a safe treatment, with a mortality rate of 0.002–0.004%; 67% of deaths are due to cardiac complications immediately after or within a few hours of treatment. Dementing disorders are not a contraindication to ETC. Demented patients are more prone than nondemented patients to delirium and prolonged memory impairment. However, there is no evidence that ECT accelerates the course of dementing disorders (4). ECT has few absolute contraindications, and it can be lifesaving in appropriate circumstances (31).

Psychotherapy

Biological treatment may not resolve all of the problems associated with depression in the elderly. For example, significant and continuing life events, altered life roles, lack of social support, and chronic medical illnesses might well require psychosocial support and new coping skills (5). Older adults who suffer from depression are as likely to benefit from psychotherapeutic intervention as are younger adults (40, 41). Though psychotherapy combined with medication may be considered the “standard for appropriate care” for treating older adults with clinically significant depression (40, 41), psychotherapy has particular utility in older patients who cannot or will not tolerate medication (2, 41). Psychotherapy alone is also a powerful component of long-term treatment strategies and has been shown to provide substantial benefit in prolonging periods of good health free from depression (2, 41).

To date, cognitive-behavioral and interpersonal psychotherapies have the most empirical support, relative to other psychotherapies, as effective psychological interventions for late-life depression (2–5, 41). Psychodynamic psychotherapy also appears promising, but has been subjected to fewer empirical investigations (2, 4, 5, 41). Group interventions may be particularly appropriate for only a small proportion of depressed elders because many of these patients are uncomfortable with group settings (41). Family therapy for the elderly has received almost no research attention (3, 5, 41, 42), though treatment approaches that include selected family members may be particularly effective, given that most elderly depressed patients depend on family members for emotional support and for their day-to-day functioning (4). Caregivers of elderly patients, and especially of demented patients, often develop depression, which may also be effectively addressed by psychotherapeutic or family interventions (4).

Other Modalities of Treatment

Cross-sectional data from observational studies consistently demonstrate that a greater amount of occupational and leisure time physical activity is generally associated with reduced symptoms of depression (43).

Conclusion

Depression is a common public health problem among the elderly. Mental health and primary care providers should be familiar with the particularities of diagnosis and treatment for this population. Geriatric depression is eminently treatable. Recognition of this disorder is a vital step in the prevention of disability and mortality.

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