# Identifying Geriatric Patients at Risk for Suicide and Depression

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Suicide represents a major cause of death in the United States, accounting for 31,000 deaths per year and an overall rate of 11.2/100,000 persons/year.[1-3] Few realize that there is a bimodal age distribution to the suicide curve.[4] The elderly and adolescents/young adults are the groups at greatest risk.[3,5] About one-fifth of all successful suicides are committed by persons over age 65,[6] with men over the age of 69 having the highest rate of completed suicide.[7] In 1988, the rate of completed suicide for individuals age 80-84 was 26.5/100,000 persons/year, compared to a rate of 12.4/100,000 persons/year for the general population.[8] An interesting trend, which has occurred since the early 1990s when managed care became prevalent, is an increase in number of suicides.[3] Recent studies show completed suicide rates of between 40 and 60/100,000 persons/year in men over the age of 80.[3,4,9,10]

Elderly patients, particularly men, are more likely to successfully commit suicide when an attempt is made, because they are less likely to "cry for help," have access to potentially harmful medications, and may use more lethal means (gunshots or hangings).[3,11] In addition, they are less physically resilient due to comorbid medical conditions.[3,5,8]A recent paper notes that more than 75% of the elderly who were successful in committing suicide had been recently diagnosed with a first episode of major depression, which was judged to be only "moderately severe" by their physicians.[8] Approximately 75% had seen their primary care physician within one month of their completed suicide.[12]

Suicide risk factors in elderly populations include presence of mental and/or emotional disorders and moderate to heavy alcohol consumption.[3,5,6,12-14] These two factors are consistent with general population studies, which indicate that more than 90% of all people who commit suicide have a diagnosable psychiatric disorder at time of death.[3,5,8] Other identifiable risk factors in the elderly include quality-of-life issues, separation, divorce, recent death of a spouse, high comorbid medical disease rates, and being male and Caucasian. Comorbid

medical conditions, which have low survival rates and are associated with chronic pain (eg, cancer), are another important risk factor.[3,5,8,12,13,15]

## DETECTING THE SUICIDAL PATIENT

It is important for physicians to be able to detect the patient who is at risk for committing suicide. The best way to accomplish this is through the use of a thorough medical and psychiatric history (Table I). The information gained from the psychiatric history is helpful for defining a patient's "imminent risk" for suicide. Patients are at imminent risk if it is believed they are likely to commit suicide within the next 48 hours. Patients are at "short-term risk" if they are likely to commit suicide within days to weeks and at "long-term risk" if they have sufficient risk factors associated with an eventual death by suicide.[5] Hirschfeld and Russell[5] note that a patient should be considered at imminent risk (within 48 hours) for committing suicide if the patient expresses the intent to die, has a cogent plan, and has a lethal means available to him (eg, prescription medications for overdose, a gun). Secondary factors that further increase risk of an imminent suicide are expressions of despair, hopelessness, extreme pessimism about the future, high levels of anxiety, and psychotic thought processes, particularly command hallucinations directing suicide. Any patient deemed at imminent risk for suicide should be hospitalized immediately for treatment.[5]

A Washington state study by Florio et al[6] looking at risk factors in a community of seniors elicited a similar list of warning signs. They found that the historical items that differentiated the suicidal from the nonsuicidal elderly were age (suicidal elders were younger), separation or divorce, and previous history of suicidal behavior. Additional risk factors included medical illness, family conflict, and loss of a relationship, particularly with a long-term spouse. An interesting unexpected finding was that patients who completed suicide were more likely to be treated by family physicians than by internists or psychiatrists. Most of the patients who committed suicide had seen their primary care physician within one month prior to their suicide.[12]

Older adults who commit suicide are likely to suffer from a long-term (months to years) persistent depression and/or anxiety disorder. They are less likely to commit suicide due to acute psychological stress than are younger patients.[12] Doctors need to inquire whether their elderly patients are under chronic stress, particularly loss of independence or fear of financial ruin, which are the two chronic stress risk factors most frequently associated with geriatric suicide.[12]

When a physician is concerned that a patient may be suicidal, he/she should speak with the patient's immediate family, because 60% of patients who commit suicide have discussed having suicidal ideations with their spouse within a year of their deaths, whereas only 18% of successful geriatric suicides discussed their intentions with a trained professional beforehand.[12]

TABLE I

### Important Questions to Ask in Psychiatric History

- Is life worth living? Do you get enjoyment out of life?
- Do you think of ending it, committing suicide, or just not waking up?
- Have you ever attempted suicide in the past?
- Have you ever sought psychiatric treatment? Inpatient or outpatient?
- What psychiatric medication do you currently take? What have you taken in the past? (Source of medications for possible overdose) Which medicine has helped you the most?
- Any family history of mental illness or suicide?
- Are there things happening to you that are particularly stressful or cause you to worry a lot? How long have they been going on?
- Do you have an active suicide plan? How would you end your life?
- How close are you to carrying out this plan? Are you experiencing command hallucinations? Do you see or hear things others do not? Do you hear voices talking to you or telling you to do things? Do they tell you to kill or injure yourself or someone else?

There is a medical myth that asking a patient about suicide will encourage the act. Physicians are often reluctant to simply ask, "Are you thinking of suicide, just not waking up, or harming yourself?" Studies, however, show that addressing the possibility of suicide with depressed or distraught patients reduces their risk of suicide.[5]

TABLE II

**Mnemonic SIGECAPS for Depression in the General Population[8]**

- **S** = changes in **Sleep**
- **I** = lack of **Interest** or anhedonia
- **G** = feelings of excessive or inappropriate **Guilt**
- **E** = decreased **Energy**
- **C** = decreased **Concentration** (unable to follow TV show or newspaper article)
- **A** = decreased or increased **Appetite**
- **P** = decreased **Psychomotor** activity ("I feel like I am walking with lead clothes")
- **S** = presence of **Suicidal** ideation

## ALCOHOL

There is a strong correlation between alcohol use and abuse in the elderly and suicide. In a California study of 11,888 retirement community residents, risk of suicide was increased 3.5 times for those who consumed three or more drinks a day.[14] The same study found those who drank less than two drinks a day had a lower risk of both suicide and accidental death.

## DEPRESSION

Of all patients with untreated major depression, 15% will eventually commit suicide.[3,5,12,16,17] In fact, 80% of patients suffering from a major depression experience suicidal ideation.[12] Many physicians miss or dismiss the telltale signs of depression in the elderly as normal complaints associated with aging. This lack of recognition is compounded by the fact that depression often presents differently in the elderly and can be confused with other existing medical conditions.[8,18] In the general population, the symptoms of depression are defined by the mnemonic SIGECAPS (Table II).[8] Other associated signs of depression include psychotic symptoms, mood congruent delusions, and hallucinations.

Elderly persons suffering from depression often present with fewer mood-related symptoms and instead complain of fatigue, trouble concentrating, diminished memory, and lack of initiative.[18,19] This makes establishing the diagnosis and initiating treatment difficult given that the DSM-IV requires a critical number of different symptoms (traditionally five out of nine) to make the diagnosis of major depressive disorder. Gallo et al,[20] in a 13-year study of men over 50, found that those who reported hopelessness, worthlessness, or thoughts of impending death or suicide, and had at least two other symptoms of depression were at increased risk for functional disability, impairment in activities of daily living, cognitive impairment, psychological distress, and death. The symptoms that were usually denied were sadness and/or loss of interest or pleasure in activities formerly enjoyed. This type

TABLE III

**Presentation of Masked Depression in the Elderly**

1. Weight loss
2. Focus on multiple somatic complaints
3. Unexplained somatic complaints
4. Minimizing or denying presence of mood-related symptoms
5. Weakness
6. Lassitude
7. Hopelessness
8. Helplessness
9. Anxiety, worry, rumination
10. Memory complaints with or without objective signs of cognitive impairment
11. Loss of feelings of pleasure (anhedonia)
12. Slowed movement
13. Irritability
14. Lack of interest in personal care

of presentation is referred to as "nondysphoric depression" or "masked depression" (Table III).[19] Gallo, in another study, reported that African-American men over the age of 60 who suffered with depression had decreased reporting of mood changes or dysphoria when compared to Caucasian men. Elderly African-American men were also more likely to ruminate about death when depressed than were Caucasians.[21]

The elderly are more likely to experience weight loss during a depressive episode than is the general population.[8] This weight loss is often mistakenly attributed as a normal part of aging (ie, loss of taste receptors), other medical conditions such as cancer, or the existence of social problems such as inability to obtain food.

Other typical presenting features of depression in the elderly include the patient being focused on multiple vague somatic complaints, social withdrawal, a decline in activities of daily living, increasing irritability, and minimization or denial of any change in mood.[8,13,17-19]

The Epidemiologic Catchment Area (ECA) study showed a one-month prevalence of major depression in the elderly of 0.7% compared to 2.2% for all adults.[8,22,23] Similar results were reported by the Epidemiologic Studies of the Elderly.[23] There is much debate about the accuracy of these numbers and of possible biases that may have skewed these results. Explanations for the decreased prevalence of depression in the elderly include nonrecognition of early depressive symptoms (you just feel this way when you get old), underdiagnosis of depression due to the atypical symptoms displayed by the elderly, and a cohort effect of the studies.[22-24] Barry et al[25] reported rates higher than the ECA of 5.7% of men and 10.6% of women over age 60 meeting diagnostic criteria for a current depression. The ECA study did report that 2% of the elderly population suffered from dysthymia and that up to 20% of community-dwelling elderly had significant subsyndromal depressive symptoms. Others have reported a rate of depression of between 7% and 12% in residential treatment settings.[8] For patients who are demented and in a residential treatment facility, the rate climbs to 20%.[8] In the general population the ratio of women to men suffering from a mood disorder is approximately 2:1, but the ratio for people in their 90s increases to 1:1.[8] This increased incidence of depression with advancing years in men has been attributed to their loss of physical and cognitive abilities, which diminish their self-esteem and self-image more than similar changes in aging women.[26]

The mortality from comorbid medical conditions is increased in the elderly suffering from depression.[18] Moore and Bona[12] found that elderly nursing home patients with major depression and two additional comorbid medical conditions had a 59% higher mortality rate than nondepressed age-matched controls with two or more similar medical conditions. Many of these depressed patients had lost their will to live, gave up on medical treatment, and became medically noncompliant.

The Geriatric Depression Scale (GDS) is a 30-question, self-reporting written scale used as a specific screening tool for depression in the elderly.[27] Another effective screening tool is the Beck Depression Inventory.[27] Both of these scales identify 90% of seniors with depression. It should be noted that their sensitivity might be diminished in patients with underlying dementia and in African Americans.[23] Patients who should be specifically tested for depression with these scales include elderly men with a positive personal or family history of depression or suicide, those with multiple medical problems, alcoholism, and those experiencing acute psychosocial stressors (eg, living alone or in nursing homes).[23,25]

One of the criticisms of the GDS is that its length makes it difficult to use for patients with depression who have trouble concentrating, and that the time available for administration may be too limited in an outpatient or emergency department setting. When these factors apply, the Zung Self-Rating Depression Scale or the modified Koenig Scale (an 11-question yes/no test [Table IV]) may be used.[28] The Koenig Scale was originally developed for use in medically

ill patients in Veterans Administration hospitals. Validation studies employing male and female geriatric inpatients using a modified Koenig Scale (oral presentation with modified pronouns) found the test to have a sensitivity of 100% and a specificity of 85% for detecting depression using DSM-III criteria, when cutoff scores of four positive responses were used.[28] Recently, Meldon et al[28] used the modified Koenig Scale in the emergency room and found that it detected depression in 27% of geriatric patients.

TABLE IV

**The Modified Koenig Depression Scale[28]**

| | | | |
|---|---|---|---|
| 1. | Do you often get bored? | **Yes** | No |
| 2. | Do you often get restless or fidgety? | **Yes** | No |
| 3. | Do you feel in good spirits? | Yes | **No** |
| 4. | Do you feel you have more problems with memory than most? | **Yes** | No |
| 5. | Can you concentrate easily when reading the papers? | Yes | **No** |
| 6. | Do you prefer to avoid social gatherings? | **Yes** | No |
| 7. | Do you often feel downhearted and blue? | **Yes** | No |
| 8. | Do you feel happy most of the time? | Yes | **No** |
| 9. | Do you often feel helpless? | **Yes** | No |
| 10. | Do you feel worthless and ashamed about yourself? | **Yes** | No |
| 11. | Do you often wish you were dead? | **Yes** | No |

*Positive responses are boldfaced. Geriatric Depression likely if 4 or more are positive.*

## GERIATRIC OR LATE-ONSET DEPRESSION

The usual age of first onset of major depression is in the third decade of life.[8] If a geriatric patient has a history of multiple depressive episodes dating back to his young adulthood, the current bout is a recurrence of a lifelong disease state. In these cases, each bout is likely to be more severe than the previous one and carry with it a higher likelihood of suicide and recurrence. Patients are also at a significantly higher risk for suicide, 224 per 100,000 person years, if they have a past history of psychiatric hospitalization.[3,5,12]

If the first episode of depression occurs after the age of 65, it is referred to as a late-onset or geriatric-onset depression.[8] Although the DSM-IV does not have a separate category for this type of depression, it is well described in the literature.[8] Late-onset depressions often present differently than depressive disorders that occur earlier in a patient's life. Psychotic and delusional symptoms occur in 45% of cases of late-onset depression.[8] Psychosis is a powerful risk factor in determining if a patient is at imminent risk for committing suicide.[5] Patients suffering from late-onset depression are also less likely to have a positive family history of depression and are more likely to present with masked depressions.[8] Neuroimaging studies of patients with late-onset depressions show more abnormal changes, particularly subcortical encephalomalacia and deep white matter changes, than do those of age-matched controls.[8] Other central nervous system changes more frequently seen in late-onset depression include cortical atrophy, enlargement of the lateral ventricles, and lesions of the pons and the subcortical gray nuclei.[8] Whenever a late-onset depression is found (Table V), it is important to rule out or identify reversible/medical causes that can be treated, such as medication effects or medical/neurologic diseases known to produce this condition.[8,29-32]

## TREATMENT OF DEPRESSION IN THE ELDERLY

Fortunately, both early- and late-onset depressions respond well to treatment.[8] Menza and Liberatore[8] found that 69% of elderly patients with depression responded well to initial treatment, whereas 57% of the remaining refractory patients had improved at one year.[8] Currently, the drugs of choice for treating depression in the elderly are the selective serotonin reuptake inhibitors (SSRIs).[8,18,23] These medications have a low incidence of side effects, few significant adverse cardiac effects, and are generally effective in treating depression in the elderly.[8]

TABLE V

## Medical Workup for Late-Onset Depression[8,30]

Review medication interactions
CBC
Serum electrolytes
Glucose
Renal function tests
Liver function tests
Calcium
Serum $B_{12}$
Folate
Syphilis serology (RPR)
Thyroid function tests (including TSH)
Urinalysis

*CBC = complete blood count; TSH = thyroid stimulating hormone; RPR = rapid plasma reagin (re: syphilis test).*

Although tricyclic antidepressants are equally efficacious, they should not be used as a first-line treatment in the elderly due to their significant side-effect profiles. Many of the tricyclics have high affinity for histaminic, alpha$_{1,}$ and cholinergic receptors, which account for their side effects of sedation, orthostatic hypotension, and their anticholinergic side effects such as urinary retention, constipation, tachycardia, dry mouth, and memory impairment.[8] All tricyclic antidepressants slow heart conduction to some degree, producing at least some PR and QT prolongation. The QT prolongation is the more serious of these effects because it can lead to idioventricular arrhythmias and other fatal heart arrhythmias if the drug concentration becomes too high.[8] Patients with ventricular arrhythmias and/or ischemic heart disease have been shown to be at increased risk for developing these arrhythmias and sudden death, even with therapeutic blood levels of tricyclics.[8] Another major disadvantage of the tricyclics is their lethality on overdose. The drugs most commonly used to commit suicide, in the general population, are the neuroleptics (used in 74.3% of overdoses) and antidepressants (used in 77.4% of overdoses).[33]

For patients who are acutely suicidal, those with unstable medical conditions, and those with severe and/or refractory depression, electroconvulsive therapy (ECT) remains an important option. ECT should be considered for patients who are acutely suicidal and where immediate mood changes are necessary.[34] It should also be considered for patients having major depressions with psychotic features, for those who cannot tolerate or do not have a response to antidepressant medications, and for patients who have medical conditions that preclude their use (eg, severe liver disease).[5] It must be remembered that it can take the SSRIs 6-8 weeks to become fully effective in younger patients and up to 12 weeks in geriatric patients.[18] ECT is safe for seniors but should not be used where relative contraindications occur (ie, increased intracranial pressure, intracerebral hemorrhage, pheochromocytoma, space-occupying intracerebral lesions, vascular aneurysms or malformations) unless there is no better alternative.[35]

Although any physician can write a prescription for an SSRI, patients who receive early psychiatric consultation for their depression have been shown to do better. This is especially true for patients with suicidal tendencies and those having psychotic, delusional, and stuporous depressions. Benefits from early consultation include a higher rate of recovery, quicker onset of recovery, reduced suicide rates, and a lower rate of relapse or recurrence.[36] Even with their high rate of overall mental illness, particularly of depression and suicide, the elderly are underutilizers of mental health services. It is estimated that only 2% of the elderly see a private psychiatrist and only 6% receive any services from community mental health programs.[37] The reasons for this underutilization include the stronger stigma of mental illness seen in older generations, decreased mobility with a decreased ability to physically reach appointments, and lack of knowledge of geriatric directed programs.[37] It is important for primary care providers to help their patients access these services. Options that can be looked into for the elderly include crisis intervention centers, case management, counseling, group therapy, case consultation, day treatment or partial hospitaliza-

tion, geriatric support groups, and peer counseling.[37] In general, funding should not be an issue because most of these programs receive funds from Medicare, Medicaid, private insurance, local public revenues, the Older Americans Act, and/or Social Services Block Grants.[37]

An interesting study done by Gallo,[38] looking at knowledge and attitudes about depression by internists and family practitioners, found that both groups had roughly equivalent knowledge about depression. Both groups also expressed considerable uncertainty in their knowledge of psychotherapy and in their evaluation of the effectiveness of strategies for prevention of recurrent depression. Family practitioners, however, rated themselves as being more skilled in managing depression than did internists. Family practitioners were more likely to provide SSRIs and to counsel patients with moderate to severe depression. What is noteworthy is that they were less likely to refer patients to competent mental health specialists than internists and, as was noted earlier, their patients were more likely to commit suicide.[12]

## SUICIDE IN THE PATIENT WITHOUT DEPRESSION

Data from the state of Oregon, where physician-assisted suicide has been legalized, provides some interesting results. The results are presented and commented on to provide a more complete picture when identifying elderly or terminally ill patients who might commit suicide. It is beyond the scope of this article to address the ethical issues involved with euthanasia. A recent *New England Journal of Medicine* article reported on a retrospective study in which nurses and social workers commented on the reasons patients choose euthanasia.[39] Previous research has suggested that up to 20% of patients seeking to enter the Oregon state program were depressed and not allowed to enroll.[39] The state does mandate that to be considered for the program the patient needs to be free from depression. This, in theory, provides a sample of the population who wishes to die without being influenced by depression. The key factors listed in the study as reasons why individuals wanted to end their lives included: to control the circumstances of their death, to maintain dignity, a desire to die at home, being ready to die, the belief that continuing to live was pointless, an inability to engage in pleasurable activities, and a poor quality of life. The article did point out that the last three reasons could be manifestations of "occult depression."[39]

The mean age of the patients in the Oregon program was 63.6 ± 11.5 years. Of these patients, 83% had cancer, 12% had cardiopulmonary disease, and 9% had neurologic diseases (some patients reported to have more than one disease). Of these patients, 43% resided in rural areas, 34% in towns, and 23% in cities. Depression and other psychiatric disorders, lack of social support, and concern about being a financial drain were deemed unimportant factors by evaluating nurses. The nurses reported that 77% of those who listed loss of control as an important reason for wanting euthanasia seemed to be "more fearful" about this issue than were other hospice patients, but only 8% were listed as less fearful. Whereas 62% were more concerned about loss of independence, only 9% were less concerned about loss of independence than other hospice patients. Pain relief was rated as an important factor in the request for euthanasia, but it was not the most important. Fatigue and dyspnea were reported as only moderately important. It is interesting to note that patients in the euthanasia program were concerned about being a burden to their families but, as observed by nurses and social workers, the families seemed less burdened than other hospice families.

The Oregon data suggest that loss of physical function and issues of declining health can lead patients without depression to contemplate suicide. The important factors identified were illnesses that caused continuous pain, patient-perceived limited quality of life, and illnesses that interfered with a patient's autonomy and dignity. These patients' perceptions of their condition and degree of incapacitation were usual-

ly more severe than that of their family, caregivers, or other hospice patients. These patients saw themselves as a burden, were apprehensive, and feared loss of control over their lives.

## SUMMARY

The geriatric patient most likely to commit suicide is a widowed or divorced white man suffering from a masked depression with high anxiety, who has been ill for an extended time (months to years), is isolated or living in a nursing home, has comorbid medical or neurologic illness, and has a heightened fear of losing control and loss of dignity. He consumes three or more alcoholic drinks a day, has lost hope, and views life as pointless. Older women have similar risk factors. Effective treatment for these individuals does exist; the earlier the intervention, the better the outcome.

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