Suicide and Bipolar Disorder

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Suicide, which is both a stereotypic yet highly individualized act, is a common endpoint for many patients with severe psychiatric illness. The mood disorders (depression and bipolar manic-depression) are by far the most common psychiatric conditions associated with suicide. At least 25% to 50% of patients with bipolar disorder also attempt suicide at least once. With the exception of lithium—which is the most demonstrably effective treatment against suicide—remarkably little is known about specific contributions of mood-altering treatments to minimizing mortality rates in persons with major mood disorders in general and bipolar depression in particular. Suicide is usually a manifestation of severe psychiatric distress that is often associated with a diagnosable and treatable form of depression or other mental illness. In a clinical setting, an assessment of suicidal risk must precede any attempt to treat psychiatric illness. *(J Clin Psychiatry 2000;61[suppl 9]:47–51)*

Unless someone lives an unthinkably boring life, has no hopes that can be shattered, no love that can be lost, or transits from birth to death in a bubble above the frays of earth, he or she experiences the same griefs or strains that, for a few, become the 'cause' of death.[1]

The relationship between the events of life, stress, and psychiatric illness is not always straightforward. Psychological pain or stress alone—however profound the loss, disappointment, shame, or rejection—is rarely sufficient cause for suicide. Much of the decision to die lies in the construing of events, and most people, when healthy, do not construe any event as devastating enough to warrant killing themselves. Nonetheless, more than 30,000 Americans commit suicide every year and nearly half a million others make a suicide attempt that is serious enough to warrant medical treatment in a hospital emergency room.[1]

Suicide is the anchor point on a continuum of suicidal thoughts and behaviors. This continuum is one that ranges from risk-taking behaviors at one end, extends through different degrees and types of suicidal thinking, and ends with suicide attempts and suicide. For some people, suicide is a sudden act; for others, it is a long-considered decision based on cumulative despair or dire circumstances. For many, it is both—a brash moment of action taken during a span of settled and suicidal hopelessness. The suffering of the suicidal person is private and inexpressible, which leaves family members, friends, and colleagues to deal with an almost unfathomable kind of loss as well as guilt. The aftermath of a suicidal act is at a level of confusion and devastation that is, for the most part, beyond description.

Suicide, which is both a stereotypic yet highly individualized act, is a common endpoint for many patients with severe psychiatric illness. While no single illness or set of circumstances can predict suicide, certain vulnerabilities, illnesses, and events make some individuals far more likely than others to kill themselves. The most common element in suicide and serious suicide attempts is psychopathology. Of the numerous mental illnesses, a relative few are particularly and powerfully bound to self-inflicted death: these are the mood disorders (depression and bipolar manic-depression), schizophrenia, borderline and antisocial personality disorders, alcoholism, and drug abuse. Mood disorders, especially when comorbid with alcohol and drug abuse, are by far the most common psychiatric conditions associated with suicide.

SUICIDE AND MOOD DISORDERS

Understanding the origins of suicide is the first step in preventing it. Mann and colleagues[2] at the New York State Psychiatric Institute have proposed a stress-diathesis model to explain the relationship between the underlying biological predisposition to suicide and the precipitants that trigger it. Several factors influence the predisposition to commit suicide, and together they act to establish a threshold for suicidal behavior. These factors include genetic vulnerabilities such as family history and compromised serotonergic functioning in the brain; temperamen-

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tal variables such as aggressiveness and impulsivity; chronic alcohol and drug abuse; chronic medical conditions; and certain social factors such as the early death of a parent, social isolation, or a childhood history of physical or sexual abuse. One factor, brain serotonergic functioning, is particularly important in setting an individual's threshold for acting on suicidal impulses.[3] Researchers have shown that serotonin function is lower in suicide attempters than in controls by measuring serotonin metabolites in cerebrospinal fluid and prolactin response to fenfluramine.[4] Postmortem studies of suicide victims also reveal decreased serotonin activity in the ventrolateral prefrontal cortex.[5]

Alcohol and drugs can precipitate acute episodes of psychosis, worsen the overall course of the underlying illness, and undermine the individual's willingness to seek clinical treatment. In a review of 504 patients with mood disorders who were hospitalized in 4 psychiatric units in Sardinia, there was a significant association of substance use disorders with suicide attempts.[6] Substance use disorders were diagnosed in 28% of the subjects: substance abuse was found in 26% and dependence in 2%. The most frequent substance abused was alcohol (15%) followed by cannabis (4%) and heroin (3%). Substance abuse was most commonly found in patients with bipolar I disorder, whereas the presence and annual rate of suicide attempts were much higher in patients with bipolar II and major depressive disorders. The mood state associated with suicide attempts was more commonly dysphoric-mixed or depressive than manic.

Substance use disorders typically start in adolescence and thus may play a particularly ominous role in the 3-fold increase in adolescent suicides in the last 30 years. In this age group, substance abuse may be associated with high rates of depression and bipolar disorder as well as the common tendency toward youthful risk-taking. A study of suicides in adolescents under the age of 20 years revealed that 90% of the suicide victims had a diagnosable psychiatric disorder at the time of their death, and more than half of these individuals had experienced significant symptoms for longer than 2 years.[7] In a Swedish retrospective investigation of 58 consecutive suicides by adolescents and young adults (15–29 years of age), a psychoactive substance use disorder—primarily alcohol dependence—was present in 47% of the youth suicides.[8]

SUICIDE AND BIPOLAR DISORDER

Patients with bipolar disorder have a higher risk of committing suicide than patients with other psychiatric or medical disorders, but determining the exact risk of suicide is difficult for several reasons.[9] First, suicide attempts and completed suicides are easier to identify than suicidal thoughts, which may range from fleeting to intrusive and persistent. The relationship of suicidal ideation to completed suicide has not been well documented in patients with bipolar disorder. Second, interpreting suicide rates is complicated. Most cohort studies are of an untreated or partially compliant population, and ethical considerations preclude a clinical study of suicidality in medicated versus nonmedicated patients. Third, few, if any, studies of suicide separate patients by severity of illness. Most studies are done with hospitalized patients, which slants the data toward severely ill patients. Fourth, changes in suicide rates are difficult to decipher since diagnostic criteria vary across time and treatments change. Finally, methodological problems confound interpretation; for example, the distinctions between bipolar and unipolar disorder became standard in the literature in the past decade only. Therefore, the enormous variability across follow-up studies has resulted in uncertainty concerning suicide risk.

For many years, the lifetime suicide risk in bipolar disorder was accepted as 15%. However, because of sampling bias (e.g., severely depressed inpatients), the actual lifetime suicide risk may be somewhat lower. Inskip et al.[10] used mathematical modeling techniques to reassess the lifetime risk of suicide in individuals with mood disorders and concluded that the overall suicide risk in mood disorders is lower (6%) than generally accepted but is particularly high around the time of diagnosis. A meta-analysis of the suicide risk among patients with bipolar disorder was performed by Harris and Barraclough[11] and was based on a combined population of 3700 bipolar patients from 14 studies in 7 countries. The population was treated between 1900 and 1985, and some patients had been followed for 60 to 70 years. Expected values were either given in the articles studied or were estimated using World Health Organization statistical reports. Combining the studies gave a total suicide risk 15 times the expected value; the wide range (0–133 times) indicated the variability across studies. The meta-analysis also showed that increased suicide risks were associated with past suicide attempts, alcohol abuse, and the amount of time elapsed after discharge from hospital—from recent discharge to 5 years prior to suicide.

The Epidemiologic Catchment Area study[12] revealed a much higher rate of suicide attempts in individuals with bipolar disorder or major depression than in those without a lifetime history of psychiatric illness. Despite often using nonviolent methods, such as drug overdoses, patients with bipolar disorder who attempted suicide showed detailed planning and a resolute intent to die. At least 25% to 50% of patients with bipolar disorder attempt suicide at one or more times in their lifetime, but the epidemiology of a suicide attempt, or parasuicide, is quite distinct from that of suicide.[1] Suicide attempters are more likely to be women than men; they generally use less lethal means, often act in the presence of others, and typically notify others of their intent. Women attempt suicide 2 to 3 times more often than men. However, women may be more will-

ing than men to admit previous suicide attempts, and men may be more prone to disguise suicide attempts by choosing risk-taking behavior or car accidents, which are seldom explored in surveys of suicide attempts.

Suicide as a consequence of depressive episodes is one of the primary causes of increased mortality in patients with mood disorders.[13] Rapid changes in mood states at the beginning and toward the end of a depressive episode constitute an increased risk for suicide, especially in the 6 to 12 months after discharge from hospital. Although suicide appears to be slightly more common in patients with major depression than in those with bipolar disorder, many individuals who are diagnosed with depression may also have mild forms of mania.[1] These so-called hypomanias generally go unreported by the patients and may fail to be detected by clinicians or ascertained through psychological autopsies. Individuals who experience mild periods of mania—usually characterized by high energy, little sleep, and marked irritability—often have coexisting alcohol or drug problems, have chaotic lifestyles, and are frequently noncompliant with medication. When irritability and substance abuse are part of the prolonged depressive phase of bipolar illness, the volatile elements may prove to be a particularly deadly combination.

Anyone who suggests that coming back from suicidal despair is a straightforward journey has never taken it. The violent agitation of some suicidal patients is impossible to comprehend unless it is intimately observed or personally experienced. These high-voltage, perturbed, yet morbid conditions are particularly common in bipolar illness during mixed states. Broadly conceptualized as the simultaneous occurrence of both depressive and manic symptoms, mixed states may exist as independent clinical forms (as mania or depression), or they may occur as transitional conditions, bridging and blending one phase of the illness with another. They are particularly common when depression escalates into mania, mania ratchets down into depression, or depression clears into normal functioning. Of 31 bipolar individuals in a Finnish postmortem suicide study,[14] the final manifestation of illness occurred during major depressive episodes in 79%, mixed states in 11%, and during or immediately after remission of psychotic mania in another 11%.

LITHIUM AND OTHER MEDICATIONS AS PROPHYLAXIS AGAINST SUICIDE

Major mood disorders, including bipolar disorder, are highly treatable across the spectrum of different ages, but only a minority of affected persons are diagnosed and adequately treated for these disorders.[15] Psychiatric treatment rates are also low for persons with mood disorders who commit suicide, which suggests low levels of detection and lack of appropriate medical interventions among those at risk for suicide. Moreover, with the exception of lithium, remarkably little is known about specific contributions of mood-altering treatments to minimizing mortality rates in persons with major mood disorders in general, and bipolar depression in particular.

The most demonstrably effective and extensively studied treatment against suicide is lithium. It has been used since 1949 to stabilize the dangerous mood swings and erratic behavior associated with bipolar manic-depressive illness and—by Europeans particularly—to prevent recurrent depression. Convincing evidence exists that appropriate long-term lithium prophylaxis reduces the suicide risk and can possibly normalize the excess mortality of patients with unipolar, bipolar, and schizoaffective mood disorders.[15] The antisuicidal effect of lithium may be related to the serotonergic and antiaggressive properties of lithium and may be independent of its episode-preventing efficacy. Notwithstanding its benefits, lithium is an effective antisuicidal medication only if patients are willing to take the drug and if they respond to it. Some patients cannot tolerate the side effects, and many others are noncompliant.

The selective serotonin reuptake inhibitors (SSRIs) are antidepressants that not only alleviate and prevent depression but also appear to decrease angry, aggressive, and impulsive behavior, and their effects on such dangerous suicide risk factors are important.[1] The SSRIs may also be easy to administer by general practitioners, internists, and psychiatrists. However, the ease of SSRI administration can also increase the likelihood that they may be given to patients who would show more benefit from a mood-stabilizing drug. Some bipolar patients may actually get worse when taking antidepressant monotherapy; that is, their episodes may increase in frequency and intensity, and they may experience severely agitated or mixed states.

The ability of anticonvulsant medications to prevent suicide is unproved, although some anticonvulsants stabilize moods and have a beneficial impact on agitated and aggressive states. Open studies indicate that the types of mood disorders that correlate with a better response to anticonvulsants than to lithium are bipolar rapid cycling, mixed episodes, a previous poor response to lithium, secondary mania, and concurrent substance abuse.[16] Antipsychotics, particularly the newer agents, share some of the same problems and promise in preventing suicide as the antidepressants.[1] Akathisia can result, but the atypical antipsychotics given in moderate doses may reduce the suicide rates in psychotically ill patients. Clearly, some of the newer agents provide a real and important alternative to lithium. Ultimately, the best course of treatment for many bipolar patients may be a combination of lithium with another mood stabilizer or with an antipsychotic, antidepressant, or antianxiety agent.

Medications are often remarkably effective in preventing or diminishing the pain and suffering of the major psychiatric illnesses most closely linked to suicide. However,

Table 1. Evaluation of Major Suicide Risk Factors[a]

Acknowledged plans for suicide
Presence or absence of severe anxiety, agitation, or perturbation
Pervasiveness, type, and severity of psychopathology
Extent of hopelessness
Presence of severe sleep disturbances or mixed states
Current alcohol or drug abuse
Ease of access to a lethal means, especially firearms
Lack of access to medical and psychological treatment
Recent severe stress events, eg, divorce, job loss, or death in family
Family history of suicidal or violent behavior
Social isolation or lack of friends and family
Close proximity to a first episode of depression, mania, or schizophrenia
Recent release from a psychiatric hospital
History of previous suicide attempts

[a]Adapted from reference 1.

whether they actually lessen the chances of suicidal individuals killing themselves is less clear. The very success of psychopharmacology in treating serious mental illness has had the unfortunate effect of minimizing the importance of psychotherapy in healing patients and keeping them alive. Psychotherapy can be extremely helpful, not only in sustaining patients through times of terrible psychological suffering and encouraging them to learn better ways of handling suicidal impulses, but also in helping patients to deal with the critical and gnarly problem of medication noncompliance.

CLINICAL CONSIDERATIONS

In a clinical setting, an assessment of suicidal risk must precede any attempt to treat psychiatric illness, and asking a patient directly about suicidal thoughts or plans is an essential part of history taking. Many patients, especially women, are reluctant to acknowledge violent and impulsive behavior, either in themselves or in relationships with others. However, it is vitally important to obtain an accurate and comprehensive history of violence and impulsivity, because these two risk factors in conjunction with psychiatric illness can create a flash point for suicide.

In addition to an individual's suicidal thoughts or plans, other risk factors that should be evaluated include the presence or absence of severe anxiety, agitation, or perturbation; pervasiveness, type, and severity of psychopathology; extent of hopelessness; presence of a severe sleep disturbance or of mixed states; current alcohol or drug abuse; ease of access to a lethal means of suicide, especially firearms; lack of access to good medical and psychological treatment; recent severe stress events, such as a divorce, job loss, or death in the family; family history of suicidal or violent behavior; social isolation or a lack of friends and family; close proximity to a first episode of depression, mania, or schizophrenia; recent release from a psychiatric facility; and a history of previous suicide attempts (Table 1).[1]

Table 2. Medical Interventions to Prevent Suicide[a]

Improve public and professional awareness of risk factors for suicide
Limit access to firearms and alcohol
Enhance access to appropriate clinical assessment and safe, effective treatments for mood and psychotic disorders
Support additional research to clarify specific benefits and risks of medical and social interventions aimed at preventing suicide

[a]From refererence 17, with permission.

Attitudes about suicide are changing.[1] Suicide is increasingly perceived as a manifestation of severe psychiatric distress that is often associated with a diagnosable and treatable form of depression or other mental illness. In 1997, Senator Harry Reid of Nevada—whose father committed suicide and whose home state has consistently had the highest suicide rate in the nation—introduced a resolution in the U.S. Senate that proposed a coherent and comprehensive national strategy to prevent suicide. The resolution acted as a catalyst for government health agencies, suicide prevention groups, mental health advocacy groups, and active grassroots organizations to begin to network with each other and to respond to and promote safe and effective treatment for people at risk for suicide. Leading the effort is David Satcher, M.D., Ph.D., Surgeon General of the United States and former director of the Centers for Disease Control and Prevention. His 1999 *Surgeon General's Report on Suicide* is the first official report published on the subject of suicide in the 200 years of his office.

At a recent symposium on suicide, the participants formulated a consensus statement on suggested medical interventions in preventing suicide (Table 2).[17] Proposed interventions included (1) improving public and professional awareness of risk factors for suicide, (2) limiting access to firearms and alcohol, (3) enhancing access to appropriate clinical assessment and promoting increasingly safe and effective treatments for mood and psychotic disorders, and (4) supporting additional research to clarify the specific benefits and risks of medical and social interventions aimed at preventing suicide.

Disclosure of off-label usage: The author has determined that, to the best of her knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

REFERENCES

1. Jamison KR. Night Falls Fast: Understanding Suicide. New York, NY: Knopf; 1999
2. Mann JJ, Waternaux C, Haas GL, et al. Toward a clinical model of suicidal behavior in psychiatric patients. Am J Psychiatry 1999;156:181–189
3. Mann JJ, Oquendo M, Underwood MD, et al. The neurobiology of suicide risk: a review for the clinician. J Clin Psychiatry 1999;60(suppl 2):7–11
4. Asberg M, Nordstrom P, Traskman-Bendz L. Cerebrospinal fluid in suicide: an overview. Ann N Y Acad Sci 1986;487:243–255
5. Arango V, Underwood MD, Gubbi AV, et al. Localized alterations in pre- and postsynaptic serotonin binding sites in the ventrolateral prefrontal cortex of suicide victims. Brain Res 1995;688:121–133

6. Tondo L, Baldessarini RJ, Hennen J, et al. Suicide attempts in major affective disorder patients with comorbid substance use disorders. J Clin Psychiatry 1999;60(suppl 2):63–69
7. Shaffer D, Craft L. Methods of adolescent suicide prevention. J Clin Psychiatry 1999;60(suppl 2):70–74
8. Runeson B. Psychoactive substance use disorder in youth suicide. Alcohol 1990;25:561–568
9. Simpson SG, Jamison KR. The risk of suicide in patients with bipolar disorder. J Clin Psychiatry 1999;60(suppl 2):53–56
10. Inskip HM, Harris EC, Barraclough B. Lifetime risk of suicide for affective disorder, alcoholism, and schizophrenia. Br J Psychiatry 1998;172:35–37
11. Harris EC, Barraclough B. Suicide as an outcome for mental disorders: a meta-analysis. Br J Psychiatry 1997;170:205–208
12. Eaton WW, Kessler RG, eds. Epidemiologic Field Methods in Psychiatry: The NIMH Epidemiologic Catchment Area Program. Orlando, Fla: Academic Press; 1985
13. Angst J, Angst F, Stassen HH. Suicide risk in patients with major depressive disorder. J Clin Psychiatry 1999;60(suppl 2):57–62
14. Isometsä ET, Henriksson MM, Aro HM, et al. Suicide in bipolar disorder in Finland. Am J Psychiatry 1994;151:1020–1024
15. Baldessarini RJ, Tondo L, Hennen J. Effects of lithium treatment and its discontinuation on suicidal behavior in bipolar manic-depressive disorders. J Clin Psychiatry 1999;60(suppl 2):77–84
16. Thies-Flechtner K, Müller-Oerlinghausen B, Seibert W, et al. Effect of prophylactic treatment on suicide risk in patients with major affective disorders: data from a randomized prospective trial. Pharmacopsychiatry 1996;29:103–107
17. Baldessarini RJ, Jamison KR. Effects of medical interventions on suicidal behavior [Summary and Conclusions]. J Clin Psychiatry 1999;60(suppl 2):117–122