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Mini Review

# Bipolar Disorder and Suicide

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## Abstract

Suicide is a dramatic and frequent consequence of bipolar disorder. Prevention of suicidal behavior involves an assessment of suicidal vulnerability factors (history of suicidal behavior, impulsive personality, etc.), characteristics of depression (agitated depression, a subtype of bipolar disorder, etc.), psychiatric comorbidities, and stress factors. Psychosocial at the same time with the characteristics of suicidal behavior in a depressed subject (severe or repeated gestures in particular) make it possible to direct the diagnosis towards a bipolar disorder rather than a major depressive disorder. In addition to training caregivers to screen for bipolar disorder and assess suicidal behavior, the withdrawal of lethal means, networking, and treatment of depression reduce the risk of suicidal behavior. At the medicinal level, the use of lithium salts could be of particular interest in subjects at high risk of suicide.

## Introduction

Patients suffering from bipolar disorder are among the patients at higher risk of suicide. 20% to 56% of patients suffering from bipolar disorder will suicide attempts (SA) in their lifetime and 10% to 15% will die by suicide [1]. These rates which are 15 to 30 times higher than those in the general population have bipolar disorder one of the diseases most at risk of suicide resulting from SA. Prospective and retrospective data show that patients most often engage in suicidal behavior during a major depressive episode (78% - 89% of SA) [2]. The period of depression is elsewhere a critical period due to frequent diagnostic errors that can lead to inadequate treatment that can encourage action. A detailed assessment of suicidal risk as well as screening and treatment burden of bipolar disorder are therefore essential to bring these numbers down.

### Suicidal risk assessment in bipolar disorder

Schematically these risk factors can be grouped into four large groups:

- **Suicidal vulnerability factors:** a "stress vulnerability" model of the suicidal process proposes that among subjects suffering from a psychiatric illness or subjected to environmental stresses, only those who bear a specific vulnerability carry out suicidal acts. Vulnerability is a keyword in a burgeoning set of research agendas in environmental epigenetics and developmental neuroscience that are concerned with how specific socio-material exposures and milieux. Identification of this vulnerability must enable better detection of suicidal vulnerability factors: a "stress vulnerability" model of the suicidal process proposes that among subjects suffering from a psychiatric illness or subjected to environmental stresses, only those who bear a specific vulnerability carry out suicidal acts high-risk patients suicidal [3]. Common to these research axes is a concern with the long-term effects of adverse experiences on maladaptive trajectories and negative mental health outcomes. These main vulnerability factors are a personal or family history of suicidal behavior, a personality marked by impulsivity,



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aggression, or a tendency to despair, and finally a history of early trauma.

- **Risk factors linked to the characteristics of bipolar disorder [4]:** Suicidal risk seems to be correlated with the number of episodes and their severity. Thus, psychotic characteristics or the presence of a bipolar disorder marked by rapid cycles favors taking action [5]. It could also be more important in the context of depression occurring in bipolar II disorder rather than in bipolar I disorder, but this remains debated. Finally, the presence of agitated depression (also called mixed state) defined by the presence of at least three hypomanic symptoms concomitant with a major depressive episode, could facilitate the risk of acting out while the subject is prey to depressive cognitions and suicidal ideation [6]. For example, a Hungarian study consecutively evaluating one hundred patients hospitalized following a non-violent suicide attempt found a mixed depressive state in 63% of these patients. This association is essentially explained by the dimension of irritability and psychomotor agitation found in mixed depressive states [7].

- **Risk factors linked to psychiatric comorbidities:** several studies find a linear relationship between the number of comorbid psychiatric disorders and suicidal behavior. Up to 60 to 80% of patients suffering from bipolar depression have had other psychiatric disorders in their lives [8]. The most common are anxiety comorbidities, substance use problems, and axis II disorders. The presence of these comorbid disorders significantly increases the risk of suicide, as they complicate the diagnostic process and treatment.

- **Risk factors linked to psycho-social stress:** in the vast majority of cases, the reasons given by patients to explain an act are related to psycho-social stress. Patients suffering from bipolar disorder are very exposed to these stresses. They experience more difficulties with social and professional integration and family problems. Even in the euthymic phase, these patients have difficulty in their daily tasks and feel rejection and discrimination directly linked to their illness [9]. These daily stresses to which our patients are subjected promote and aggravate the depressive episode as well as the risk of suicidal behavior.

## Suicidality characteristics as a marker of bipolar depression

Since major depressive episodes are found in both bipolar disorder and major depressive disorder, diagnostic errors are common. The tendency is to overdiagnose major depressive disorders and underdiagnose bipolar disorders. Bipolar disorder is often denied among patients, even the psychiatrists, the bipolar spectrum is wider than health professionals believe. It is important to note that the characteristics of suicidal acts in a depressed suicidal patient can in themselves guide the diagnosis. Bipolar disorder more particularly during the depressive phase is associated with actions with high lethality [10]. At the epidemiological level, this probably explains why the lethal risk is high as indicated by the ratio of the number of SA to the number of completed suicides which is 3.9 in these patients, while it varies from 20 to 40 in the general population. Data show that in a depressed patient, a family history of suicide as well as a personal history of frequent or serious suicidal behavior (i.e. violent actions such as hanging, the use of a firearm, or requiring a visit to intensive care) are much more common [11]. Thus, in daily clinical practice, the presence of one or more of these characteristics in a depressed suicidal patient should suggest bipolar disorder. In this subgroup of patients, a careful search for manic or hypomanic episodes (if necessary, using diagnostic tools) is necessary in order to initiate appropriate treatment [12].

## Suicidal behavior and bipolar disorder

The frequency of suicidal behavior but also the severity of the characteristics of AS in bipolar disorder could also suggest certain common vulnerability traits between bipolar disorder and suicide. Thus, cognitive decision-making function has been shown to be disrupted in bipolar disorder and in suicidal patients independently of psychiatric comorbidities [13]. Neuroanatomical relationships involving abnormalities in emotional regulation have also been suggested [14,15]. These common vulnerability factors could partly explain the frequency of occurrence of suicidal behavior in bipolar disorder. Furthermore, this suggests the possibility of testing the effect of treatments on these common "endophenotypes" such as the effect of lithium salts on aggressive impulsivity which could explain its anti-suicide effect [16].

## Prevention of suicide risk in bipolar depression

The first action to prevent suicidal behavior in bipolar disorder consists of improving our ability to recognize the disorder when faced with a depressed subject [17]. Thus, it takes on average five years before correct detection of the disorder [18]. Non-specific interventions for bipolar disorder have also shown their effectiveness: this involves the withdrawal of lethal means (particularly firearms), networking with the various care providers (general practitioner, psychiatrist, psychologist, etc.), and raising awareness among doctors about screening and management of suicide risk [19]. It has been shown that the majority of bipolar patients who commit suicide are in contact with care and that a large number of these patients communicated their suicidal intentions shortly before committing suicide [20]. This observation justifies that the assessment of suicide risk is carried out systematically and regularly in our bipolar patients, with certain elements being expected to change (acute psychiatric disorders, life events), and others less so (vulnerability factors) [21]. Chief among the modifiable factors is depression. Thus, studies like that of Gotland show that correct management of depression is strongly associated with a reduction in the risk of suicide. In bipolar depression, the question of choosing an optimal treatment currently remains a subject of study. The rule must be to do no harm to patients [22]. The choice of treatment must take into account the targets envisaged: melancholic



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characteristics, anxiety, agitation, high suicidal risk, impulsivity and violence, rapid cycles, and substance abuse. If none of the current recommendations propose specific therapeutic strategies for bipolar depression with a high suicidal risk, Suicidal acts including violent acts and suicides were more prevalent with BD than MDD [23]. Indeed, abundant literature tends to prove that lithium salts in particular have a particularly preventive effect with regard to suicidal behavior. Lithium has a protective effect against completed suicides as well as SA in bipolar patients but also in patients with recurrent depressive disorder. Results of a growing number of randomized, controlled studies of lithium treatment for suicide prevention including comparisons with placebos or alternative treatments, and comment on the severe challenges of such trials [24]. Lithium would reduce the rate of suicidal behavior by almost five and this anti-suicide effect could be partially independent of the mood-regulating effect itself [25]. It should be noted that stopping (and especially suddenly stopping) lithium leads to an increase in the risk of suicide. The benefits of using antidepressants remain very controversial. This controversy concerns their potential increases in suicide risk but also their effectiveness [26]. Regarding suicidal risk, there is to date no prospective study or randomized controlled trial specifically evaluating whether antidepressants modify short- or longer-term suicidal risk in depressed bipolar patients [27]. On the other hand, electroconvulsive therapy (ECT) significantly reduces the risk of suicide death while also being a medically safe procedure [28]. Electroconvulsive therapy use is, however, inhibited by fear of electricity, unreasoned prejudice, legislative restrictions, and the limited availability of trained professionals and adequate facilities.

## Conclusion

Suicide is a dramatic and frequent consequence of bipolar depression. Preventing suicidal behavior requires improving our capacity for early diagnosis of the disorder, and carrying out a careful and repeated systematic assessment of suicidal risk. In addition to the treatment of depression, comorbidities and the prevention of psychosocial consequences must also be integrated into management strategies. Recent data showing a decrease in suicide rates in studies conducted in recent years compared to older ones show that these behaviors can be prevented with correct diagnosis and treatment of the mood disorder, and through accurate assessment of suicidal risk factors [29].

In my idea, to prevent suicide risk, there are 2 directions:

- Progress in the identification of predictive factors (clinical, environmental, and biological) for the occurrence of suicidal behavior, based on a follow-up study of subjects at high suicidal risk (suicide ideas and attempts).

- Improve the measurement and monitoring of suicide risk in real-time through the development of connected tools.

*The most important in clinical practice is to tell bipolar patients that suicide ideas are part of the illness and not that they want to die.*

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