

On the Relevance of Seizure Activity to Suicide Risk

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To the Editor

Research in psychiatry has consistently demonstrated that suicide is probably the end result of an interaction between many different risk factors with mental disorders being the decisive one [1]. However, in a selected group of patients, the presence/absence of seizures and the practice of prescribing certain medicines may seem to contribute to that risk, well at least statistically.

It is evident to researchers that the detection of the increased risk of suicide, as a result of the use of certain psychotropics, is a difficult task due to the inherently high risk of suicide in patients prescribed these medications. Selective serotonin reuptake inhibitors (SSRIs), for example, were found to increase the risk of suicide, especially, in younger age groups, even when adjusting for risks caused by the illness itself (FDA review). We seem to be faced with a similar situation in relation to the use of anti-epileptic drugs (AEDs). The latter is evident in a large FDA meta-analysis that has shown AEDs to increase the risk of suicide in three different groups of patients: patients with epilepsy, patients with psychiatric disorders (e.g. depression), and patients with other disorders (e.g. chronic pain) [2].

Naturally, this is a complex area considering that all three groups of patients do potentially have a higher risk of depression and suicide! Notwithstanding the finding that patients with psychiatric disorders on AEDs were found to have a lower suicide risk, when compared to patients with epilepsy on AEDs, is interesting. The latter observation is consistent with three more studies, all of which have failed to detect an increase in suicide rates in patients with bipolar affective disorder receiving AEDs, but paradoxically, an increased rate in patients with epilepsy receiving AEDs [3-5].

The FDA finding that suicide risk is higher in the AED arm of patients with epilepsy when compared to the AED arm of psychiatrically ill patients, from the outset sounds almost counter-intuitive. However, the mystery is amenable to understanding if we entertain the possibility that in some patients, the risk of suicide can directly be affected by seizure activity (increased or decreased) irrespective of the underlying psychopathological ailments (e.g. depression).

Curiously, one study found evidence of lower brain neurosteroids in suicide patients with diagnoses of schizophrenia and bipolar affective disorders [6], which is an indication that in a subgroup of patients, the risk of suicide can directly be influenced by biological factors, in this case lower neurosteroids, irrespective of the diagnostic label attached.

The above argument can further be strengthened by looking at lithium as a case in example, and despite its weaker efficacy in preventing recurrent depressive episodes in bipolar patients in comparison to its efficacy in preventing mania, its efficacy in reducing suicide risk in the same patient's group is not contested [7]. Some studies have stipulated that suicide and aggression have an inflammatory origin and that lithium has an anti-inflammatory effects, hence reduces suicide risk as a direct effect [8].

There is some truth to the old saying that "old theories die hard"! Occasionally though old theories do persevere and for good reasons. Can seizures still be assumed to have a therapeutic effect when it comes to psychopathology? For many decades, this has been the conventional wisdom behind ECT. However, the precise question we would like to pose now, considering that ECT is indicated in patients with high suicidal drive is, whether seizure activity can have a direct effect on suicidal behavior, irrespective of mood or other psychopathology? We believe the answer is probably yes in some patients. Therefore, it is worth looking into more systematically, in order to explain the FDA findings. It is undeniable that an act of suicide is a complex affair with so many variables at work. However, we feel that inquiring specifically about seizure activity and/or the prescription of certain psychotropics should be taken into consideration as potentially significant variables that could enhance or mitigate suicidal risk.

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in the public, commercial, or not-for-profit sectors.

Abbreviations

SSRI: selective serotonin reuptake inhibitors; AED: anti-epileptic drugs

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