Lithium Levels—What Increases and Decreases Them?

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Here are a few reminders to help avoid both toxicity and loss of effectiveness.

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BIPOLAR UPDATE

Patients need to be educated frequently about what can increase or decrease their lithium levels, leading to either toxicity or loss of effectiveness. Prescribers need to be reminded as well.

The following are some common circumstances that can increase lithium levels (instruct patients to inform you of any symptoms and get extra levels in these situations):

- Dehydration (eg, from vomiting or diarrhea, as may occur in acute gastroenteritis)
- Low-sodium diet
- Reduced renal filtration rate (eg, in glomerulonephritis and diabetic nephropathy; also age related)
- Febrile illness
- Medications[1]
    - Thiazide diuretics (eg, hydrochlorothiazide) can produce increases from 25% to 400% (very unpredictable).
    - Nonsteroidal anti-inflammatory drugs (NSAIDs; eg, ibuprofen, naproxen, meloxicam) and probably COX-2 inhibitors (eg, celecoxib, diclofenac) can increase levels 10% to 400% over the

    - Metronidazole

The following can decrease lithium levels:

- Mania may cause levels to go down 50% despite confirmed adherence.[2] The mechanism is unclear, but it might be that lithium goes into the intracellular compartment during mania. If you increase dose to improve the plasma level, toxicity symptoms can appear—or they may appear after the mania remits and the lithium returns to the extracellular space.
- Pregnancy
- Caffeine may promote renal excretion of lithium.[3]

The following have little effect on lithium levels[4]:

- Amiloride is a potassium-sparing diuretic and sometimes does raise levels (need to monitor).[5]
- Aspirin
- Furosemide is a loop diuretic.
- Sulindac is an NSAID that may or may not raise levels (need to monitor).

In a previous column,[5] we discussed the importance of keeping maintenance lithium levels in the range of 0.6 to 0.8 mEq/L as well as avoiding even brief occurrences of levels more than 1.0 to minimize the risk of long-term kidney impairment.

During meetings with patients, it is important to give frequent reminders of the aforementioned factors that affect levels so that patients will be more likely to call and inform prescribers and to have lithium levels drawn when necessary. Temporary adjustment of doses while waiting for levels (or if it is impossible to get levels) may be advised in some cases.

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Logic and Reason

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Psychiatric Times,

How can looking at the suffering of patients with schizophrenia through a psychodynamic lens help clinicians develop effective interventions and treatment plans?

shattered glass_Love the wind/Adobe Stock

TALES FROM THE CLINIC: THE ART OF PSYCHIATRY

Series Editor Nidal Moukaddam, MD, PhD

In this installment of *Tales From the Clinic: The Art of Psychiatry*, we delve into the world of psychosis and the accompanying suffering from a psychodynamic and suicide risk perspective. Chronic psychotic disorders, exemplified by schizophrenia, bring about terrible suffering and are not fully treatable. Despite advances in psychiatry, we have limited treatment options to offer that can lead to true recovery. Shattered lives ensue, with all the sadness attached. The clinicians who treat this challenging population deserve all our gratitude and support.

Case Study

"Mr Thomas" was a young male in his late 20s when he first presented at our community clinic to establish care. He was accompanied by his father during the first visit and in all subsequent follow-up appointments. Mr Thomas was visibly shy and anxious during the first appointment. He sat quite close to his father, mostly avoided any eye contact with his psychiatrist, and often deferred to his father for most of the answers. He later revealed the reason for the lack of eye contact was his effort to block the intrusive "inappropriate sexual thoughts" when seeing someone; looking at the psychiatrist would make him think and imagine his naked body. Despite the palpable shyness and anxiety present in the first visit, Mr Thomas gave the impression that he was familiar with outpatient psychiatric care since he had been seeing psychiatrists for years, first for anxiety when he turned 20, and later for bizarre thoughts.

Soon after the fall semester of his junior year, he started having delusional thoughts that he was responsible for the firing of a few employees at a local newspaper because of his hacking into their website and him providing rude feedback on their job performance. In addition, Mr Thomas' self-esteem and sense of belonging took a major hit because he frequently believed he was causing trouble to others. During one visit, Mr
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even worse, that his “bad” thoughts could infect others.

The psychotic episodes quickly turned into a distressing experience and sank him further into disorganized thoughts and behaviors. Late in the spring semester of his junior year, Mr Thomas was hospitalized for disorganized behaviors, poor self-care, and suicidal thoughts. Subsequent psychotic episodes and hospitalizations rendered him a harsh reality of a long and seemingly unending struggle with severe schizophrenia.

Nonetheless, despite going through a few more psychotic episodes in the following years, he was able to complete his college degree. In contrast to the sullen look he had when talking about the mental health illness that derailed his life, Mr Thomas spent time during a few visits recalling his childhood and his early years of college with a lot of fondness. Also, behind the flat affect, the self-doubt, and the suffering, Mr Thomas was a deeply caring individual; he regularly donated a significant part of his monthly Social Security check to a local food bank. In one visit, he expressed extreme relief after learning his intrusive thoughts were not contagious and that he was not responsible for others having obsessive compulsive disorder because of his presence. However, when it came to his emotional suffering and daily life struggle, Mr Thomas rarely spontaneously spoke or elaborated when asked.

It has been 5 years since Mr Thomas moved back home after college to live with his father, who has always been a loving and caring figure, but life was not any easier for Mr Thomas. Initially, he was able to find a few labor jobs, but he struggled to hold them: “I do not want to be working around people.” Mr Thomas said he used to be a social person in college, but now he no longer had any meaningful relationships outside of his immediate family. He had not been in touch with his old friends in recent years. The interplay of cognitive, behavioral, and emotional dysfunctions of schizophrenia has led to a long-term impairment of his social and occupational functioning, sinking Mr Thomas into further loneliness, isolation, and a lack of a sense of belonging.

Treatment and Suffering

Mr Thomas had been on multiple atypical antipsychotic trials in his earlier years of treatment for psychosis, but the treatment did not make a meaningful impact on his positive symptoms. At the time of his first visit to our clinic, he was already on clozapine; this medication seemed to help with his delusional thoughts of him causing harm to others. However, he still occasionally developed the fear of ruining others’ minds because he believed that they could hear his “bad” thoughts. Also, the intrusive thoughts and images of seeing others in sexual ways continued to torment him, causing a lot of shame and guilt.

Besides taking sertraline for depression, he also had weekly psychotherapy, mostly focusing on cognitive behavioral therapy for psychosis and intrusive thoughts. He found the intervention beneficial, at least partially. At one point, Mr Thomas was able to go to the park and challenge his fear of making eye contact with people by greeting them; however, the intrusive thoughts and imagining others naked never seemed to go away.

Prior to taking sertraline, he was also on fluvoxamine, but it did not have any impact on the intrusive thoughts, even at the highest dose. When the intrusive thoughts became unbearable, Mr Thomas said he sometimes chose to sleep most of the day, so he did not have any awareness of his thoughts and feelings. Mr Thomas’ fears could be more consistent with anxieties higher on the developmental hierarchy. Even though the experience of emerging psychosis during his college years seemed to be devastating, as it bu
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hobbies as a teenager. In one visit, he also proudly talked about being selected for his college swim team. These days, he still occasionally went out and swam at a local YMCA, but only when the intrusive thoughts were not troubling him. Otherwise, he spent his time at home checking emails or going to a local library when he did not feel like he was causing problems to others.

Anxiety, guilt, and shame could be unbearable for Mr Thomas at times because of the ruminating thoughts. To him, the thoughts were totally inappropriate; they seemed as if they were part of him, not his illness, especially when he talked about seeing the flash of someone's genitalia when making eye contact with them. To cope with it, he avoided leaving his house altogether. The only time of the day when he found peace was late at night, walking his family's dog when there was no one around him.

He never considered using substances to cope with the mental suffering. Mr Thomas belonged to the minority of patients with schizophrenia who never used, misused, or abused any substance, including tobacco, to self-soothe. Research has shown that a history of substance use disorder is associated with a 1.5- to 2-fold increase in suicide rates among patients and can lead to a decrease in executive functioning abilities and a subsequent increase in impulsivity during the course of the disease.[2]

Over the years, the missing sense of belonging and the confusion between his thoughts and reality made him feel increasingly hopeless and helpless. How could he find the future worth looking forward to when he lost his old self? As his psychotic process progressed, more primitive anxieties developed, such as disintegration anxiety and annihilation anxiety. Mr Thomas began to experience the self as formless and diffuse, and thoughts and perceptions became difficult to differentiate.[3]

The container by which patients suffering from severe schizophrenia relate to the outer world has lost its structure. For Mr Thomas, the experience was now not so much of annihilation anxiety, but about himself slipping away and disintegrating. The terror itself can become a companion, providing reassurance that something of the self remains.

Mr Thomas frequently felt indifferent about death because he thought his existence was a burden to himself and everyone else. Mr Thomas drifted further into hopelessness, helplessness, and isolation, despite the love and care from his family, because of the loss of control, the confusion, and the lack of a sense of belonging.

Suicide Risk

Now, as a young man in his late 20s, Mr Thomas continued the long struggle in his day-to-day existence. The highest risk of completed suicide is recorded among individuals with onset of illness between the ages of 22 and 24 years.[4]

Coupled with the guilt and shame that was exacerbated by his delusional thoughts, the anguish and torment from his suffering became unbearable on multiple occasions. Mr Thomas had been hospitalized 5 times in the 5 years since establishing care at our clinic. Three of these hospitalizations were for having suicidal thoughts, and the other 2 were for serious suicide attempts: one by overdosing on his psychiatric medication, and the other by drowning himself in a swimming pool.

Patients experiencing psychotic symptoms are more likely to exhibit feelings of shame, stigma, guilt, and rejection. Independently, these feelings lead to exacerbation of one's symptoms, increased social withdrawing, reluctance to seek help, and subsequently a greater risk of completed suicide attempts. Previous suicide attempts are generally considered the number-1 risk factor for subsequent death from suicide. Among patients with schizophrenia, a history of previous attempts early in the treatme about himself for having a sexual thought that was transmitted to his right-side neighbor through the vents in his bathroom. The psychotherapy intervention on his delusions and intrusive thoughts was not as effective due to Mr Thomas' concrete thought process and increasingly poor insight. The effect of insight alone can be paradoxical, as it contributes to the illness' severity through the mediating effects of depression and hopelessness.[6] Living with a diagnosis can make it hard for him to separate his identity from it, leading to feelings of hopelessness, loss of autonomy, negative views of oneself, and demoralization. These factors, combined with maladaptive coping mechanisms and lack of social support, can lead to depressive feelings and internalized stigma at a later stage of the disease.[6]

Although a hospital stay can have positive effects on one's illness, by ensuring adequate management, symptomatic control, and greater security, studies have shown a higher rate of completed suicide in the week following discharge. Patients lacking adequate support outside of a health care facility could be faced with more hardships upon discharge. Some could also view their illness as more debilitating when it requires a longer course of hospitalizations, leading to less adherence with the course of treatment.

Concluding Thoughts

A deeper understanding of patients' suffering—especially through the view of the often-ignored psychodynamic lens—and early recognition of suicide risk factors specific to patients with schizophrenia are important in clinical settings. The effective intervention relies on detection and treatment tailored to each patient's needs, rendering the healing journey more bearable and less challenging.

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