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Manic Episode after Kidney Transplantation: A Case Report

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Abstract **Case Report**

Kidney transplantation is the best treatment option for end-stage renal disease in appropriate patients. Immunosuppressive agents administered during this time can cause many psychiatric disorders. In this article, we present a kidney transplant patient with acute psychiatric disorder consisting of delusions. We discuss the psychiatric risks of immunosuppressive agents and the importance of psychiatric treatment in this aspect.

Keywords: Manic, psychosis, immunosuppressant treatment, tarcolimus, corticosteroid, Kidney transplantation.

INTRODUCTION

Renal transplantation remains the best treatment option for end-stage renal disease because it allows patients to regain a satisfactory quality of life. Actually, compared with hemodialysis, renal transplantation in patients with end-stage renal disease is widely accepted as a treatment method because of its advanced advantages in terms of short- and long-term survival. However, transplantation and lifelong immunosuppressive therapy have their own problems. Many psychiatric disorders such as major depressive disorder, mania, anxiety disorders, adjustment and psychotic disorders, cognitive and memory disorders can be observed at any postoperative period in kidney transplant patients [1, 2]. In this article, we present a case of acute psychiatric disorder that occurred 1 year after a kidney transplantation.

CASE PRESENTATION

A 42-year-old married man who underwent a renal transplantation 1 year ago was brought to the psychiatric emergency by his family due to psychomotor agitation and homicidal threats.

The patient has a history of occasional cannabis and alcohol consumption, and there are no other mood or anxiety disorders.

He was admitted to our service with symptoms of a manic episode 1 year after the renal transplantation.

It was discovered that the patient had not been taking his medications, which include tacrolimus 4mg/day, mycophenolic acid 1500 mg/day, and prednisolone 5 mg/day, in the past few weeks since the onset of psychiatric symptoms. There is no family history of psychiatric disorders.

According to information from family members, the patient exhibited elevated mood, excessive talking, sleeplessness, hyperactivity, and excessive spending, and expressed political concerns.

The symptoms worsened with irritability and aggression towards his wife, including homicidal threats, which may be caused by his delusions.

The psychiatric interview of the patient revealed a clear level of consciousness, excitement with familiar contact, logorrhea, and delusional statements of megalomaniac, and mystical themes. His mood was jovial.

His hematological and biochemical tests, including renal function and urine examination, were all within normal limits.

Serum electrolytes were also within normal limits. Brain MRI showed no abnormalities. After the examinations, a therapeutic regimen was established at the time of his hospitalization. We initiated olanzapine at 5 mg per day, then replaced it with aripiprazole at 5 mg and increased it to 20 mg per day with alprazolam at a dose of 1.5 mg per day. His agitation resolved during the first week. He said he wanted to leave for his projects. Within two weeks, the patient showed slight improvement. His opposition disappeared and he agreed

to take his medications (psychiatric and immunosuppressive), he criticized his delusions, but he still maintained a logorrhea and familiarity in contact.

The patient was transferred to the nephrology department after three weeks of hospitalization for the follow-up of his transplant. During his stay in nephrology, we noted a functional improvement and the absence of previous delirium.

DISCUSSION

Our patient is an interesting case of mania with delusions after a kidney transplantation triggered by immunosuppressive treatment, without any prior psychiatric history.

Immunosuppressive treatment administered to patients after organ transplantation can cause various psychiatric disorders. For example, a preliminary study on transplant patients in Turkey showed that the most common diagnosis was major depressive disorder, observed in 25% of all patients. The remaining diagnoses were mood and/or anxiety disorders [3].

Kidney transplantation has been the most important treatment option for people with end-stage renal disease. But increased risk factors for the development of psychotic features after transplantation include the use of high doses of corticosteroids, a known risk factor for psychosis, the presence of a mood disorder associated with chronic illness, the presence of metabolic disorders associated with the medical condition, the use of other immunosuppressive drugs in transplantation, such as calcineurin inhibitors (ciclosporin A and tacrolimus), which have known neurobehavioral adverse effects [2, 4].

Our patient was using low-dose corticosteroids and tarcomilus. Therefore, he may have triggered the psychiatric symptoms through long-term use of immunosuppressants.

Psychiatric side effects have been reported in 60% of patients using corticosteroids. While depression tends to occur with long-term use of corticosteroids, mania can occur much earlier during treatment and is associated with high- dose preparations. Psychiatric side effects are twice as likely to occur during the first 5 days of corticosteroid treatment; however, this is also dose dependent [1]. The reported incidence of serious psychiatric side effects of corticosteroids is low, 5% to 6%, and includes a wide range of cognitive, affective (irritability, emotional lability, hypomania, and mania…), psychotic (visual and auditory hallucinations, delusions, thought confusion, and precipitous thoughts), and behavioral disorders [5].

Approximately 20% of patients taking more than 40 mg of prednisone or the equivalent of high-dose corticosteroids are expected to develop a psychiatric disorder. In addition, psychiatric history, age, underlying disease, and gender were considered risk factors for the development of corticosteroid-induced neuropsychiatric disorders [9].

Although our patient did not use high-dose corticosteroids, low-dose use continued for a long time. We considered long-term use of low-dose corticosteroids as a risk factor for the development of psychiatric symptoms.

The calcineurin inhibitors tacrolimus is core immunosuppressive agents given to solid organ transplant recipients to prevent and treat allograft rejection and it has been reported to cause psychiatric disorders. Calcineurin inhibitors have regulatory effects on both the dopamine systems and the N-methyl-D-aspartate receptor. Tacrolimus may cause some mental disorders, including catatonia and psychosis. Psychiatric problems can be resolved by reducing the dose or switching to another immunosuppressant for patients who do not respond to reduction [2, 7].

One case report of tacrolimus-associated mania involved a patient with a history of bipolar disorder [8]. Other reports of psychiatric symptoms in patients without a psychiatric history involve catatonia and paranoid delusions [9, 10]. Another case published reports mania secondary to supratherapeutic tacrolimus levels in a patient with no psychiatric history [11].

However, studies also support the addition of antipsychotics to treatment [6]. Low doses of antipsychotics may be the most appropriate, haloperidol; olanzapine, risperidone and quetiapine are common choices for treating psychiatric manifestations. Recent studies have indicated that psychotropic medications, such as risperidone, aripiprazole are emerging as the most effective pharmacologic agents for reversing psychiatric side effects. Aripiprazole has been identified as one of the most effective drugs for managing induced mania without causing excessive sedation [1, 5, 6].

We initiated treatment with olanzapine and then switched to aripiprazole. It was chosen because it is more reliable in terms of side effects, particularly metabolic, in patients with chronic diseases.

CONCLUSION

The mechanisms of psychiatric adverse effects of immunosuppressant are extremely complex, unpredictable and generally serious. This requires more focused attention is needed from physicians to educate patients and their families.

The management of these disorders is very important because these disorders can reduce adherence to treatment, which is crucial in the post-transplant period, and can cause transplant rejection.

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