Case Report

Occurrence of anticholinergic syndrome with biperiden in a bipolar patient with psychotic symptoms

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ABSTRACT

Antipsychotic drugs can cause adverse extrapyramidal side effects in patients. For this reason, anticholinergic drugs are used in treatment protocols to manage extrapyramidal syndromes. However, high doses of these drugs may lead to anticholinergic syndrome in patients. Sometimes, in complex and extremely aggressive patients, it seems that the occurrence of secondary aggression is due to the presence of anticholinergic syndrome, which unfortunately is ignored.

The patient is a 38-year-old woman with a 7-year history of bipolar disorder, who, due to her non-use of medication, was treated with biperiden along with antipsychotic drugs to control her symptoms. Due to secondary aggression resulting from the occurrence of anticholinergic syndrome, these symptoms were confused with the initial psychotic symptoms of the patient. As a result, the presence of anticholinergic syndrome was neglected, and the dose of the antipsychotic medication was increased. This led to a vicious cycle in the process of treatment. It seems that psychiatrists should be more careful about the use of antipsychotic drugs in acute patients and the presence of anticholinergic syndrome should not be neglected.

Keywords: Anticholinergic syndrome, biperiden, bipolar, psychotic symptoms

Introduction

Antipsychotics (neuroleptics) are widely used to treat people with serious mental illnesses. However, these drugs are not without harm and are associated with a wide range of side effects, such as movement disorders. Therefore, many people who are being treated with antipsychotic drugs also receive anticholinergic drugs at the same time to reduce the side effects regarding movement [1]. In general, anticholinergic drugs such as biperiden, benztropine, procyclidine, and trihexyphenidyl are regularly used in clinical practice to prevent and treat extrapyramidal side effects associated with neuroleptic drugs [2]. Despite the necessity of these drugs, their use in high doses, such as biperiden intoxication, leads to the development of anticholinergic syndrome in patients [3].

The main effect of biperiden is to block acetylcholine in the central nervous system. According to research, it seems that the neurotransmitter acetylcholine plays a major role in the development of anticholinergic syndrome. Anticholinergic syndrome is a term used to describe symptoms resulting from decreased cholinergic activity in the central nervous system, primarily characterized by signs and symptoms consistent with hyperactive delirium. Other symptoms include mydriasis, blurred vision, ataxia, fever, redness and dry skin, hypothermia, dry mouth, decreased bowel sounds, constipation and urinary retention, etc. [4]

In general, patients with anticholinergic syndrome show variable symptoms that affect multiple peripheral and central organ systems and the patient's mental state. In these patients, the mental condition often worsens, which may lead to misdiagnosis and confusion of these symptoms with psychotic symptoms that patients previously had. This, in turn, may result in increasing the dose of antipsychotic drugs which have the potential for strong anticholinergic effects. [5]

Although it is thought to be rare, the misuse of anticholinergic medication has been reported in several clinical settings [6, 7]. In addition, the abuse of these drugs, such as biperiden, has been reported in some cases [8]. In this article, we are also going to report a case of the occurrence of anticholinergic

syndrome with biperiden in a bipolar patient with psychotic symptoms.

Case Presentation

The patient was a 38-year-old woman, a known case of bipolar disorder from 2014 to 2021, who was hospitalized several times each year with clear symptoms of mania due to substance use and non-acceptance of medication. At the beginning of hospitalization, due to severe aggression and lack of control of manic symptoms, we had to use high doses of medications. On October 11, 2021, the patient had symptoms of restlessness, insomnia, talkativeness, and severe aggression due to using addictive drugs and not taking medication. According to the patient's history that her symptoms had not been controlled and she had refused to use medication during hospitalization, we decided to treat her with 5-mg tablets of haloperidol every 8 hours. In addition, in case of aggression, biperiden tablets, haloperidol ampoules PRN, and Largactil ampoules PRN were used.

Due to not taking the medications, it was necessary for the patient to receive injections of haloperidol and biperiden every 8-hours. After three days of hospitalization, the patient was controlled for signs of aggression and escape, and her condition became stable. However, unfortunately, after 7 days of hospitalization and 4 days after becoming stable, the patient developed confusion and delirium symptoms. Clear dry mouth, dysphagia, frequent coughs, nausea, vomiting, and low blood pressure were also observed.

After examining the case history, it seemed that the patient had anticholinergic syndrome and the reason for this was that the patient had taken haloperidol and biperiden tablets after partial recovery and had also received haloperidol and biperiden ampoules. Due to receiving three ampoules and three pills of biperiden daily, she suffered from anticholinergic syndrome.

After that, all the patient's medications were on hold, and her symptoms improved after the management of critical conditions and she recovered from delirium. After that, the patient's medication was restarted after one week due to the return of manic symptoms.

Results and Discussion

Anticholinergic syndrome was originally described by Longo in 1966 as a set of symptoms associated with the administration of anticholinergic drugs. However, the etiology and pathophysiology of the syndrome cannot be fully understood. A relative deficiency of acetylcholine at the synaptic terminals is considered to be the main culprit of this syndrome [3]. This syndrome may manifest with changes in mental status, decreased levels of consciousness, urinary retention, lack of attention and concentration, dry mouth, cardiac arrhythmia, blurred vision, hypothermia, fever, hot skin, and reduced seizure threshold [2].

Conclusion

It seems that more care should be taken regarding the use of antipsychotic drugs in hospitalized patients with mood or psychotic disorders who have symptoms of psychosis and aggression at the same time. This is because when using antipsychotic drugs for sedating aggressive patients, we also have to use anticholinergic drugs to prevent possible extrapyramidal side effects. In the case of increasing the amount of anticholinergic drugs for the patient, the complication of anticholinergic syndrome develops. Unfortunately, due to the overlap of some cognitive and behavioral symptoms of anticholinergic syndrome with psychotic states, this complication is neglected and the treatment of the patient suffers a vicious cycle. In such a way that with the appearance of symptoms of anticholinergic syndrome, it is thought that the patient's psychotic and aggressive symptoms have become severe. Therefore, the amount of antipsychotic and anticholinergic drugs increases, leading to complications in the patient's alertness, cognitive, and behavioral status.

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Ethics statement: This report was published after obtaining the patient's consent. The protocol of this case report was approved by the Ethics Committee of Shahrekord University of Medical Sciences (code: IR.SKUMS.REC.1401.141).

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