

## A Case Report of Opioid Induced Hypomania and Obsessive Compulsive Disorder

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### ABSTRACT

**BACKGROUND AND OBJECTIVE:** Obsessive compulsive disorder (OCD) and bipolar disorder are common psychiatric illnesses and there are many challenges in pathology and their treatment. In recent years, the role of opioid system in the pathology of these disorders has been considered. In this report, we present a case with simultaneous episodes of hypomania and OCD following opium use.

**CASE REPORT:** The 65-year-old man, who was suffering from irritability, talkativeness, over spending and frequent washing following use of opium, visited in psychiatric clinic. After administration of 30 mg of methadone every day, all her symptoms improved. During 12 years of follow-up, we observed that her symptoms recurred when the patient was taking opium again. Few days after repeat prescription of methadone, these symptoms subsided.

**CONCLUSION:** The findings of this study emphasize the role of opioid system in the pathology of obsessive-compulsive disorder and bipolar disorder, at least when there are comorbid.

**KEY WORDS:** *Opium, Obsessive-compulsive disorder, Hypomania.*

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## Introduction

Obsessive compulsive disorder (OCD) and bipolar disorder are common psychiatric disorders that may lead to disabling individual and social problems (1, 2). There are many challenges in their pathology and treatment (3,4). Contemporary theories about the pathology of bipolar disorder are based on the increased activity of glutamatergic, serotonergic and noradrenergic signaling (5).

It is also believed that serotonergic, dopaminergic and glutamatergic (NMDA receptor) systems are involved in the pathology of OCD. (6). In recent years, the role of opioid system in the pathology of these disorders has been considered (3,7). There are variety of findings about the role of opioid system in mood changes and compulsive behaviors, but this is still not well known. According to some observations, manic/hypomanic reactions have been seen in patients under-treatment with opioid analgesics (3). Also it was reported that methadone, as an opioid agonist, can attenuate core symptoms of manic patients (3,8). On the other hand, the use of naloxone as an opioid antagonist in some trials has intensified the symptoms of mania syndrome (9).

There are also heterogeneous findings about the effect of opioid antagonists and agonist drugs on OCD. Some observations reported that opioid drugs such as morphine and tramadol are useful in treatment of patient with refractory OCD (9,10). However, use of naloxone as an opiate antagonist agent associated whit contradictory results. OCD symptoms was exacerbated after naloxone administration in two observations and transient reduction was reported in one (11).

We describe an opium dependent case that he had symptoms of obsessive compulsive disorder and hypomania simultaneously with opium methadone taking. In all periods where methadone is prescribed or opium is stopped, all symptoms are resolved, which has never been reported in any article.

## Case Report

The 65-year-old man married, retired who had started opium abusing following loss of her son since

16 years ago (1-2 grams per day). After a short time of intake, he gradually suffered from mood changes included irritability, talkativeness, decreased need to sleep, inflated self -esteem and over spending. And because of the mental preoccupation with the contamination of objects, he repeatedly washed home appliances. The patient is referred to the psychiatric clinic for the first time about 12 years ago due to unsuccessful abandoning drug and was evaluated by a psychiatrist.

Based on DSM-IV criteria, the diagnosis of opioid dependence, obsessive-compulsive disorder and hypomania was determined. Obsessive- behaviors and hypomanic syndrome appeared to be due to opioid use, therefore, methadone treatment was temporarily initiated. Subsequent evaluations showed that all the symptoms subsided with 30 mg of methadone per day and no other treatment was required.

After about 12 years, the patient resumes opium abusing again, and the symptoms return as before. Re-administration of methadone at a dose of 30 mg per day, again led to the recovery of all symptoms after a few days. Unfortunately, the patient did not have a proper co-operation in the continuous use of methadone and then stopped taking medication.

He resumed the use of opium, and his psychological problems were repeated. In the next visit to the psychiatric clinic, the methadone dose increased to 40 mg per day, leading to a healing effect. During the past 12 years, he was occasionally monitored and followed up by a psychiatrist, and reviews from the patient and family history show that he had never symptoms of hypomania syndrome and OCD without the use of opium. Personal and family history of OCD and emotional dysregulation problems, including bipolar spectrum disorder, were negative. Meanwhile, his non-psychiatric medical records were negative and there was no abnormality in routine laboratory testing.

## Discussion

This case report presents the simultaneous onset of OCD and hypomanic symptoms following opium use.

This patient, with no personal and family history of bipolar disorder and OCD, is suffering from obsessive thought about contamination and compulsion to washing, as well as hypomanic syndrome, which is completely improved several days after treatment with methadone and discontinuation of opioid use.

The onset of bipolar disorder and OCD usually occurs in the 2nd and 3rd decades of life. The onset of symptoms after the age of 50 is rare and may be due to secondary causes such as organic diseases or medication and drug use (1,2). In this report, the first episode of the disease occurred at the age of 49 years. Regarding physical examinations and normal laboratory tests, the existence of organic origin is unlikely. In addition, according to the Naranjo algorithm, the ADR probability scale, a score of 7 was obtained for this patient (12). It means that the untoward clinical event probably due to the drug using. The manifestation of the patient's mood is different from the euphoric state after narcotic drugs use. Improvement of psychological symptoms within a few days after opium discontinuation represents opioid induced hypomania, not mood changes due to the immediate effects of the drug (13).

Previous studies in this area include several case studies that describe the induction of manic/hypomanic responses to the use of synthetic opioids such as codeine, pentazocine and tramadol (13). In some studies, patients with known bipolar disorder were examined and in other articles, people who were prone to bipolar disorder were studied. For example, in the case report by Prakash and colleagues, a 40-year-old man with a history of long-term heroin dependency was reported. After increasing his heroin dose, he developed hypomania syndrome.

In the history of this patient, there was a hyperthymic temperament, that may be a contributing factor to the bipolar disorder (13). However, in this presented report, personal and family history of emotional dysregulation problems were negative. Although some observations point out that hypomania/mania created by opiate drugs are known as bipolar disorder in the long term (10), But we have not found the period of mania /hypomania without taking opioid

in the patient. Opioid-use rituals and severity of compulsivity and obsessiveness in relation to drug use in the individuals with opioid dependence were discussed in study by Friedman (14).

However, we found no research about unrelated to drug use obsessive-compulsive behaviors that induced by narcotic drug use. Concurrent hypomania and obsessive-compulsive disorder after the use of opium are the unique findings of this case report, which has never been mentioned in other scientific literature. This experience is important from two aspects of clinical and neurobiochemical pathology. The phenomenon of comorbidity of psychiatric disorders, especially bipolar disorder and OCD, is one of the most challenging subjects in clinical practice (4).

Antidepressant agents are essential for OCD treatment, but the use of these medications in patients with bipolar spectrum disorder will have the potential for switching and inducing manic / hypomanic reactions (15, 4). Hence, in many studies alternative options have been evaluated. For example, in study by Hamidi and his colleagues naltrexone, an opioid antagonist agent, was tested in patients with OCD. The results of this study indicate that naltrexone is effective in treating subgroups of OCD that are associated with bipolar disorder (4).

The findings of this study emphasize the role of opioid system in the pathology of obsessive-compulsive disorder and bipolar disorder, at least when there are comorbid. In addition, it has provided an idea for physicians to use medications with effect on opioid receptors for treatment of these disorders. Contrary to the study of Hamidi et al. which used naltrexone (4), multiple administration of methadone resulted in alleviate of the patient's psychological problems, including obsession and hypomania.

Methadone has noticeable pharmacological properties includes NMDA receptor antagonism, serotonin and norepinephrine reuptake inhibitor, and agonist effects on mu opioid receptor, and, in this respect, is different with other opioid agonist medications (16).

The effect of methadone on the various systems involved in the pathology of bipolar disorder and OCD

(5,6) can be a justification for eliminating the hypomanic and obsessive symptoms as seen in this report. Although the efficacy of methadone may be due

to the discontinuation of opium, more clinical trials in the future could provide more accurate information on the benefits of opioid agonist agents.

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