

Treatment-resistant Abuse of Oxybutynin With Psychotic Symptoms: A Case Report and Literature Review

Neriman Aras (✉ neriaras@hotmail.com)

Samsun Mental Health and Disorders Hospital, TURKEY

Case report

Keywords: Oxybutynin, anticholinergic drugs, abuse

Posted Date: September 15th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-871724/v1>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background

Anticholinergic drugs are the most commonly used addictive drugs among non-prescription drugs. Oxybutynin is one of the anticholinergic drugs widely used for overactive bladder and nocturnal enuresis treatment for both adults and children. Here is a new case of oxybutynin use with high dose and long-term use despite recurrent treatment applications.

Case Presentation

A 25 years old, unemployed man that was graduated from primary school applied to the inpatient clinic. He reported that he has been using oxybutynin for 8 years. He was taking 500 mg/day of oxybutynin (100 pills in a day), approximately. He stated that he had taken 250-300 pills in some days (1000-1500 mg/day). He described agitation, irritability, anxiety, visual and auditory hallucinations, reference thoughts, and persecution delusions. The patient was diagnosed with Other Substance Use Disorders according to the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) criteria. Carbamazepine 400 mg/day, olanzapine 10 mg/day, and lorazepam 2.5 mg/day treatments were started. At the end of the five weeks, both symptoms improved completely. In the follow-up, he had no psychiatric symptoms two months after the discharge. He was not using any substance or addictive drugs; working regularly in his father's family business.

Conclusions

Oxybutynin is one of the non-controlled drugs, so can be obtained easily from pharmacies without a prescription in Turkey. Interestingly, case reports about oxybutynin use are all from Turkey. Oxybutynin should be considered for the potential for addiction due to its anticholinergic properties, easily accessible, and cumulative cases. Psychiatrists and non-psychiatric physicians, especially urologists should be aware of the addiction potential of the drug because of anticholinergic effects, especially between substance users, and oxybutynin may cause some psychotic effects.

Introduction

Anticholinergic drugs are the most commonly addicted non-prescription drugs (1). Anticholinergic drug addiction become to gain attention in the 1980s, with the first case described in 1960 (2). The main causes of addicting these drugs are improving depressive symptoms, enhancing sociality, providing euphoria, getting high, obtaining relaxation (3, 4, 5, 6, 7). Anticholinergic drugs are the fifth most commonly addicted drug class after opiates, cocaine, marijuana, and amphetamines (5). Anticholinergic misuse is usually seen with severe mental illness using antipsychotic drugs, at the rate of about one-third (3, 8). Besides, anticholinergic addiction has been reported also among persons who are not using antipsychotics (8).

Anticholinergic users are usually young, single, history of multidrug dependents, poor functioning persons as unemployment, low education levels, and poor social skills, and also with personality disorders as antisocial and borderline personality. Anticholinergic drug use increases if other substances are inaccessible (9).

Oxybutynin is one of the antimuscarinic and anticholinergic drugs used to ease urinary and bladder problems (4, 10). The drug is primarily indicated for the treatment of overactive bladder syndrome for more than 40 years (11, 12). The drug prevents involuntary bladder contractions and urgency by inhibiting the muscarinic receptors within the urothelium and detrusor muscle. Oxybutynin has antimuscarinic and antispasmodic effects; but the exact mechanism is not clear (11).

The oral form of oxybutynin is available as 5 mg tablets or liquid form (5 mg/ml). The recommended dosage of the drug is 2–3 times a day as 5 mg tablets. The maximum daily dosage is 5 mg 4 times a day. Oxybutynin is a pregnancy category B drug and has been approved by FDA for use in children 5 years or older. It is recommended to be careful elderly because of sensitivity to side effects (11, 12).

Side effects with oxybutynin are common, usually related to its anticholinergic effects, as dry mouth, constipation, drowsiness, and blurred vision, especially in high doses. The drug can cross the blood-brain barrier, so may cause some side effects related to the central nervous system. Side effects include headache, insomnia, impairment in cognitive function, sedation, confusion, agitation, anxiety, and psychotic symptoms (4, 11, 12).

The present report describes a male patient who exhibits psychotic symptoms and is used an anticholinergic drug-oxybutynin for years despite dependency treatment for several times and, reviews literature about the addiction of this drug. Written consent was obtained from the case.

Case Presentation

A 25 years old, unemployed man that was graduated from primary school applied to the inpatient clinic of Samsun Mental Health and Disorders Hospital, on March 2021. He reported that he has been using oxybutynin for 8 years, and wanted to give up the drug. He had been taking a box of oxybutynin almost every day. A box of drugs consisted of 100 pills, so this means he was taking 500 mg/day at once.

During the interview, he reported that he was used cannabis and methamphetamine before, for 3 years, intermittently. He has started to use oxybutynin on a friend's advice to give up these substances. He stopped using substances, but he was using oxybutynin for 8 years. He could reach the drug easily from pharmacies without any prescription. While, he was taking 125–150 mg/day of oxybutynin (25–30 pills in a day) initially, the dosage had reached 500 mg in a short time, quickly. He stated that he had taken 250–300 pills in some days (1000–1500 mg/day). He had last taken the drug two weeks ago, because he was trying to stop taking oxybutynin by himself. He described agitation, irritability and, anxiety, sometimes. When he take oxybutynin he felt more energetic, relaxed, decreased anxiety, and did not need other substances. However, he described some psychotic symptoms as visual and auditory

hallucinations, reference thoughts, and persecution delusions when he was under the effect of the oxybutynin. But, the psychotic symptoms were resolving after the drug's effect has ended. He did not describe any withdrawal symptoms. He had some side effects related to the anticholinergic effects of the drug, such as constipation, dry mouth, blurred vision, sweating and, impaired attention and concentration. However, he was displeased because to be dependent on this drug. He was feeling discomfort and craving. He had applied to some inpatient clinics-two of them to the Alcohol-Drug Addiction Treatment and Training Centers for five times to 'get out of' the drug, but the treatment failed again and again. He had been in prison 8 times for various in the past years. One of his crimes was because of plundered a pharmacy because of obtaining oxybutynin. He had attempted suicide two times when he broke up with his girlfriend, one by taking pills and the other by jumping.

In the psychiatric examination, he was looking at his age, had old scars caused by self mutilative behavior on his arms. His appearance was compatible with his socioeconomic level. He was conscious and oriented to place, time, and person. His intelligence was clinically normal, the speech was spontaneous and on normal rhythm. He was looking anxious and nervous. No pathology on his thought process. No symptoms were defined on his routine physical examination.

The Montreal Cognitive Assessment Scale (MoCA) score was 23 that means no significant cognitive impairment. The Symptom Check List (SCL-90) indicated mild pathological evidence on the somatization scale. The Minnesota Multiphasic Personality Inventory (MMPI) demonstrated that hypersensitivity to criticism, tendency to blame others, no self-confidence and no self-esteem, emotional instability, excessive idealization, bad interpersonal relationships. His medical and familial history does not contain any features. No abnormalities were determined on serum biochemistry, hemogram, and thyroid function tests. He took 9 points from Hamilton Anxiety Scale, and 7 points from Hamilton Depression Scale.

The patient was diagnosed with Other Substance Use Disorders according to the Diagnostic and Statistical Manual of Mental Disorders-5 (DSM-5) criteria. Carbamazepine 400 mg/day, olanzapine 10 mg/day, and lorazepam 2.5 mg/day treatments were started. Withdrawal symptoms did not observe. But, on the follow-up, he had trouble controlling his anger, so risperidone 1 mg/day was added to the medication. At the end of the five weeks, both symptoms improved completely. In the follow-up, he had no psychiatric symptoms two months after the discharge. He was not using any substance or addictive drugs; working regularly in his father's family business.

Discussion

Anticholinergic addiction is common in patients especially with severe mental illness using antipsychotic drugs (3, 8). These agents are increase acetylcholine in the synaptic cleft and increase dopamine when continued to be used. So, the mesolimbic dopaminergic pathway is activated which has an important role in the development. However, an increase in dopamine may lead to psychotic symptoms, too. Muscarinic receptors control the acetylcholine release and are widely located in the central nervous system with an important role in memory. Antimuscarinic effects cause blockage on reuptake and storing of dopamine,

so cause euphoria (4, 13, 14). The main causes of using anticholinergic drugs are improving depressive symptoms, enhancing social skills, providing euphoria, getting high, induce pleasure, increase energy, obtaining relaxation, boosting energy (5, 6, 14).

Oxybutynin is widely used for bladder problems, including in children. Oxybutynin use disorder is extremely rare.⁵ To our knowledge, there are some cases in the literature, between 2006 and 2021, interestingly all of them were reported from Turkey. Almost all of the cases had a history of past substance use. There are eight adolescent cases were between the ages of 15 and 17 years, and three of them were female. The used dosage was between 25–100 mg/day (5–20 pills in a day), and three of them exhibited psychotic symptoms (6, 7, 14, 15, 16). The adult cases were all men, between the ages of 19 and 45. The used dosage was between 15–500 mg/day (3-100 pills in a day). Four of the eleven adult cases exhibited psychotic symptoms (4, 5, 8, 10, 17, 18, 19, 20).

Oxybutynin is one of the non-controlled drugs, so can be obtained easily from pharmacies without prescription in Turkey. Positive effects of the drug such as feeling more energetic, relaxed, reduced anxiety, are consolidated to continue to the drug and no need to the other substances. The use of oxybutynin is progressively increasing among substance users in both age groups, especially in Turkey. The Turkish Medicines and Medical Devices Agency has an official warning that the drug should not be prescribed except for the elimination of voiding problems and should not be sold without a prescription due to the addiction potential of the drug.

Conclusion

Oxybutynin abuse is increasing in all age groups between substance users in last fifteen years in Turkey. Considering the addiction potential of the oxybutynin due to anticholinergic properties, accumulating cases, and should easily be accessible, more serious and deterrent legal regulations are required by the Turkish Ministry of Health. Psychiatrists and non-psychiatric physicians, especially urologists should be aware of the addiction potential of the drug, especially between substance users.

Abbreviations

DSM-5

Diagnostic and Statistical Manual of Mental Disorders-5

MoCA

The Montreal Cognitive Assessment Scale

SCL-90

The Symptom Check List

MMPI

The Minnesota Multiphasic Personality Inventory

Declarations

Ethics declarations and consent to participate

Written consent was obtained from the patient.

Consent for publication

Not applicable.

Availability of data and materials

The data used in this case are available from the corresponding author Dr. Neriman ARAS on reasonable request.

Competeting interests

The authors declare that they have no competing interests.

Funding

None.

Contributions

This entire case report was prepared by Neriman ARAS.

Acknowledgments

None.

Author information

Affiliations

Neriman Aras

Department of Psychiatry, Samsun Mental Health and Disorders Hospital, Samsun, TURKEY

References

1. Conca AJ, Worthen DR (2012) Nonprescription drug abuse. *Journal of pharmacy practice*, 25(1), 13-21.
2. Caplan JP, Epstein LA, Quinn DK ve ark (2007) Neuropsychiatric effects of prescription drug abuse. *Neuropsychology Review*, 17(3), 363-380.
3. Buhrich N, Weller A, Kevans P (2000) Misuse of anticholinergic drugs by people with serious mental illness. *Psychiatric Services*, 51(7), 928-929.

4. Can USS (2015) Letter to the Editor: A Case of Oxybutynin Abuse. *Turk Psikiyatri Dergisi*, 26(2), 147.
5. Sonkurt HO, Altınöz AE (2020) Oxybutynin addiction: two case reports. *Journal of Substance Use*, 1-3.
6. Arslan D, Cansiz MA, Tufan AE ve ark. (2017) Oxybutynin abuse in an adolescent leading to psychotic symptoms. *Anadolu Psikiyatri Dergisi*, 18(3), 301.
7. Çoban ÖG, Tulacı ÖD, Adanır AS (2019) Oxybutynin addiction of 3 cases. *Klinik Psikofarmakoloji Bulteni*, ek S1, Istanbul, 29, 147.
8. Guloksuz S, Eren K, Gurol DT (2010) A case of oxybutynin dependency. *General Hospital Psychiatry*, 32(4), e5–e6.
9. Land W, Pinsky D, Salzman C (1991) Abuse and misuse of anticholinergic medications. *Hospital & community psychiatry*.
10. Mutlu UEA (2011) Letter to Editor: Oxybutynin dependence: A case presentation. *Turk Psikiyatri Dergisi*, 22(2), 131.
11. Jirschele K, Sand PK (2013) Oxybutynin: past, present, and future. *International urogynecology journal*, 24(4), 595-604.
12. Gish P, Mosholder AD, Truffa M ve ark. (2009) Spectrum of central anticholinergic adverse effects associated with oxybutynin: comparison of pediatric and adult cases. *The Journal of pediatrics*, 155(3), 432-434.
13. Gulsun M, Pinar M, Sabanci U (2006) Psychotic disorder induced by oxybutynin. *Clinical drug investigation*, 26(10), 603-606.
14. Kınık MF, Dönder F, Duymaz MK ve ark. (2015) Addiction of oxybutynin: an adolescent case report. *J Addict Res The*, 6(228), 2.
15. Kardas O, Kardas B (2019) The Oxybutynin Abuse In Adolescent Case. *SANAMED*, 14(1), 91-94.
16. Gültaş E, Göl G, Savcı U ve ark. (2017) An Adolescent with Oxybutynin Abuse Developing on the Basis of Unrecognized ADHD: A Case Report. *Klinik Psikofarmakoloji Bulteni*, 27, 105.
17. Aydın O, Aydın PÜ (2016) Oksibütinin kullanımının yol açtığı psikotik bozukluk (Oxybutynin induced psychosis). *Anadolu Psikiyatri Dergisi*, 17(4), 333.
18. Balasar M (2016) Oxybutynin abuse/overdose/withdrawal. *Reactions*, 1619, 144-17.
19. Demiröz D, Yağlı N, Serez S (2019) Oxybutynin-induced psychosis: a case report. *Klinik Psikofarmakoloji Bulteni*, 29, 237-238.
20. Kumsar NA, Okay İT, Dilbaz N (2009) Oksibütinin Kötüye Kullanımı ve Bağımlılığı; İki Olgu Sunumu. *Klinik Psikofarmakoloji Bulteni*, 19.