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Case Report

Dimenhydrinate Dependence in Patient with Previous History of Psychiatric Disorder

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Abstract

Dimenhydrinate (DMH) is commonly used due to its antiemetic / anti vertiginous therapeutic effect but symptoms resulting from chronic abuse of this substance have only rarely been described. Here we reported the case of a patient with previous history of Borderline Personality Disorder and drug abuse with recent tolerance, craving and abstinence symptoms from DMH abuse, pointing to addictive power of this antihistaminic medicine.

Case Report

A 33-years-old woman presented with feelings of nervousness, irritability, generalized anxiety, insomnia, depressed mood, and persistent suicidal ideation. Concomitantly, she reported relief of these symptoms when using DMH. Currently in our Center for Psychosocial Care, she received a Borderline Personality Disorder diagnosis besides tobacco and DMH dependence.

Smoker since she was 12 years, her history was remarkable for the initial use of DMH at the age of 16 years when three tablets were usual to avoid nausea during often bus travels. At the age of 26 years, she started the daily and increasing use of DMH, culminating to the use of 40 tablets/day of DMH (4 g / day = 10 times the therapeutic dose). The patient also related harmful use of alcohol since 14 years old, besides experimental use of marijuana, volatile solvents and inhaled cocaine in adolescence. Further, lots of medications, including benzodiazepines, were taken though an accurate diagnosis has never been reached.

She presents several signs of self-mutilation in the forearms and at least three hospital admissions due to exogenous intoxication

with alcohol and medications. After she got pregnant, stopped with harmful use of alcohol and any other medication, however, maintained - to this day - the use of 4 g of DMH / day associated with tobacco (currently, the child is at 4 months of life; born with Interventricular Communication which evolved benignly). Besides the evident tolerance, reducing or stopping the consumption of DMH do cause great craving, irritability and 'explosive' behavior. The patient is now admitted for detoxification and stabilization of the psychiatric framework.

Discussion

The patient presented history of Borderline Personality Disorder and drug abuse, that probably contributed to the dimenhydrinate dependence related here.

Drug dependence is a chronic and relapsing disorder characterized by compulsive use despite negative consequences [1]. Alcohol, tobacco and other illicit drugs are well known as addictive substances. However, cases involving medicine dependence are rarely reported. This one involving DMH, a low cost medicine that can be available without medical prescription, has called our attention. Most likely, low cost and easy access to this medication added to the fact of being an unusual depen-

dence may lead to lower rates of reported DMH dependence [2].

DMH at therapeutic doses has antiemetic, nauseous and anti-vertiginous action attributed to the H1 receptors antagonism in the vestibular system [3]. On the other hand, it was observed that peripheral administration of antihistamines increases dopamine levels in the nucleus Accumbens due to both increased release [4] and inhibition of dopamine reuptake [2] that could explain its rewarding effect in the brain. Additionally, animal studies show that the action of antihistamines in the inhibition of serotonin and noradrenalin reuptake is related to their antidepressant effects [5-8].

Together with these evidences in the brain reward system, we suggest that the history of psychiatric disorder contributed as a risk factor for the development of DMH dependence in this patient.

References

1. George O, Koob GF. Individual differences in prefrontal cortex function and the transition from drug use to drug dependence. *Neuroscience and Behavioral Reviews*. 2010, 35(2): 232-247.
2. Craig DF, Mellor CS. Dimenhydrinate dependence and withdrawal. *Can Med Assoc J*. 1990, 142(9).
3. Jaju BP, Wang SC. Effects of diphenhydramine and dimenhydrinate on vestibular neuronal activity of cat: a search for the locus of their antimotion sickness action. *J Pharmacol Exp Therap*. 1971, 176: 718-724.
4. Dringenberg HC, De Souza-Silva MA, Schwarting RKW, Huston JP. Increased levels of extracellular dopamine in neostriatum and nucleus accumbens after histamine H1 receptor blockade. *Naunyn-Schmiedeberg's Arch Pharmacol*. 1998, 358: 423-429.
5. Carlsson A, Lindqvist M. Central and peripheral monoaminergic membrane-pump blockade by some addictive analgesics and antihistamines. *J Pharmacol Pharmacol*. 1969, 21: 460-464.
6. Coyle JT, Snyder SH. Antiparkinsonian drugs: inhibition of dopamine up-take in the corpus striatum as a possible mechanism of action. *Science* 1969, 166: 899-901.
7. Horn AS, Coyle JT, Snyder SH. Catecholamine uptake by synaptosomes from the rat brain: structure-activity relationships of drugs with differential effects on dopamine and norepinephrine neurons. *Mol Pharmacol* 1970, 7: 66-80.
8. Carney JM, Holloway FA, Modrow HE. Discriminative stimulus properties of methylxantines and their metabolites in rats. *Life Sci*. 1984, 36: 913-920.