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PHENIRAMINE HYDROGEN MALEATE DEPENDENCE: A CASE REPORT

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ABSTRACT

Pheniramine hydrogen maleate (PHM) is histamine antagonist, used for the treatment of allergic disorders. PHM can cause side effects such as sedation and euphoria and with the potential for tolerance to the sedative effect of PHM and physical withdrawal symptoms refer to PHM abuse. The patients who abuse PHM were interested in its features such as hallucinogen, inexpensive, easily and legally available. Healthcare professionals also apply the drug easily and in a riskier group. Additional history of psychiatric disorder or personality pattern contributes to addiction potential. Misinterpretation of hallucinatory behaviours can lead to a vicious cycle of dependence. Herein, we presented a 30-year-old male patient with history of use of high doses of PHM and discussed the treatment process.

1. Introduction

Pheniramine hydrogen maleate (PHM) is an alkyl amine-derived histamine 1 (H1) antagonist, used for the treatment of rhinitis, allergic dermatoses, and pruritus (1, 2). PHM inhibits phospholipase A2 and nitric oxide production through binding to H1 receptors. Decreased cyclic guanosine monophosphate cause reduced histamine-activated allergic reactions (2, 3). PHM can cause side effects such as dizziness, incoordination, euphoria, and sedation. Sedation occurs as a result of H1 blockage in the central nervous system (CNS); reflects the impairment of cognitive functions; and might be related to the altered interaction between the cortical and subcortical areas. The potential for tolerance to the sedative effect of PHM and physical withdrawal symptoms refer to PHM abuse (3, 4). Herein, we discussed a 30-year-old male patient with history of use of high doses of PHM.

2. Case Presentation

A 30-year-old married, physician, male patient was admitted to psychiatric outpatient unit with the massive PHM use and he was diagnosed with the substance use disorder (SUD) according to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) (5). The patient, who had urticaria and pruritus since childhood, had been treated with PHM intravenously (IV) 8 years ago, firstly. The patient, who was satisfied with the symptomatic healing, repeated it occasionally. Due

to tolerance and craving, he had to constantly increase the dose. He had been using 900-1100 mg/day IV for the last year. He had difficulty in expressing herself, he was introverted and he was inadequate in social relations.

When she was six her mother left home and was told that she would be sent to a child protection institution. The patient says he has never been able to survive the traumatic effect of that moment. After six months, his mother returned home again, but his anger against his mother and other women continued. He thinks that he has been deprived of women. He never had a girlfriend. His brother has a history of alcohol and substance abuse, his mother has a history of major depressive disorder and neurotic personality pattern, and his father has antisocial personality pattern.

When the patient started using PHM at a dose of 250 mg/day IV, he experienced “mystical experiences” in his own words. In sedation, the patient thought that he had reached a high level of awareness, that he could read others' thoughts, that the heart eye was being opened. At that time, he began studying philosophy, psychoanalysis and sociology to assess this “extreme awareness”. The medical background of patient was not remarkable. The evaluation made in inpatient unit revealed the normal limit of fasting blood glucose, protein level and lipid profile. Thyroid, kidney, and liver function tests revealed normal results. Chest X-ray and electrocardiogram results were normal. The patient had no drug use other than PHM. He had no systemic disease such as hypertension or diabetes mellitus. He had no history of alcohol abuse and smoking.

Various scales were applied to the patient: 1. Brief Psychiatric Rating Scale (BPRS) = 26 (moderate severe of emotional closure, depressive mood, feelings of guilt); 2. Personality Belief Questionnaire -Short Form (PBQ-STF) = 52 (schizoid and paranoid pattern); 3. Maudsley Obsessive-Compulsive Inventory (MOCI) = 11 (yes)/26 (y) (low probability of diagnosing obsessive-compulsive disorder); 4. Temperament and Character Inventory (TCI) = Temperament components = 61 (a temperament structure that have enough skills of novelty seeking, harm avoidance, reward dependence, persistence), character components = 80 (a character structure that have enough skill of cooperativeness and self-transcendence but have not skill of self-directedness); 5. Automatic Thoughts Questionnaire = 98 (high); 6. Discomfort Intolerance Scale = 19 (low intolerance); 7. Symptom Checklist-90-Revised (SCL-90-R) = high obsession, depression, interpersonal sensitivity, anger, additional, and general symptom index

Table 1. The Patient’s Pre-treatment and Post-treatment Scale Data

Scale	Pre-treatment	Post-treatment
Brief Psychiatric Rating Scale (BPRS)	26	12
Personality Belief Questionnaire - Short Form (PBQ-STF)	52	36
Maudsley Obsessive-Compulsive Inventory (MOCI)	11/26 (Yes/No)	9/28 (Yes/No)
Automatic Thoughts Questionnaire	98	76
Discomfort Intolerance Scale	19	14
Beck Depression Inventory	16	12
Cognitive Distortions Scale (CDS) Total	72	62

scores; 8. Beck Anxiety Inventory = 4; 9. Beck Depression Inventory = 16; 10. Cognitive Distortions Scale (CDS)= Social relationship sub-score = 40 (troubled), personal achievement = 32 (normal); 11. Global Rating Scale = Moderate symptoms; 12. Eating Attitude Test = normal; 13. Insight Rating Scale = 15 (normal); 14. Adult Attention-Deficit Hyperactivity Disorder Self-Report Scale (ASRS-v1.1) = 19 (A = 8, B = 11). The data of the scales are shown in Table 1. It was learned that he stayed in a rehabilitation centre related to substance dependence of a sufism-tasawwuf sect. The patient was managed by sertraline 50 mg/day per oral (PO) and mirtazapine 15 mg/day PO and the dose of sertraline was increased to 100 mg/day PO. The dose of PHM was gradually reduced and eventually stopped. In the sixth month of the treatment, the patient's psychiatric symptoms were significantly reduced with sertraline 100 mg/day PO, mirtazapine 15 mg/day PO and cognitive behavioral therapy (CBT) -motivational interviewing (MI), and his compliance with the treatment increased.

3. Discussion

This case report clearly shows the abuse risk of PHM, which is widely used in allergic disease practice. Health workers with easier access to PHM need to be more careful about the risk of abuse. In addition, the risk of abuse increases in patients with a history of psychiatric disorder (6-9). Our case was a medical doctor, with a history of allergic disease, and a family history of psychiatric disorder. Scales that examine many psychological domains such as anxiety, depression and personality traits increase our knowledge about PHM dependence in this patient. Our patient had an introverted and depressive features and had schizoid and paranoid personality pattern. There was a family history of substance use disorder. Studies show that psychotic symptoms may occur due to the use of PHM. This psychotic state includes hallucinations as a prominent part of the clinical picture. There is a consensus among users that it is a poor hallucinogen, but it is inexpensive, easily and legally available. Such easy access to the drug seems to be undesirable (10). In our case, the patient who stated that he had increased vigilance under the effect of PHM, which we expected to impair the cognition, was actually a hallucinatory event. However, the patient had misinterpreted this condition because of the characteristics of the drug and the paranoid and schizoid personality pattern.

Saatcioglu and Evren (4) reported that the withdrawal signs may become after using pheniramine. Rao et al. (11) presented the case of a patient with dependence to pheniramine maleate and they emphasized the need for awareness and regular monitoring of the use of pheniramine maleate medications in vulnerable patient populations. Buckley et al. (12) stated that pheniramine is taken in overdose more frequently than other antihistamines relative to its market share. It is also more likely to be abused than other antihistamines. Pal et al. (13) reported that the use of antihistamines alone or in combination with other substances of abuse may predispose individuals to develop psychiatric symptoms or syndromes as a part of intoxication, withdrawal or as co-morbid conditions. The potential for tolerance to the sedative effect of PHM and physical withdrawal symptoms refer to PHM abuse. Medications, CBT and MI were found to be useful in the treatment.

As a result, this case report suggests that physicians should be aware that PHM may cause drug abuse, especially in healthcare professionals. Further systematic research should be conducted with respect to PHM-associated dependence to provide a greater understanding of both its prevalence and aetiology.

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Informed Consent

Informed consent was taken from the patient.

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