Psychiatria Danubina, 2022; Vol. 34, No. 1, pp 91-93 https://doi.org/10.24869/psyd.2022.91 *Case report*

A CASE OF PSYCHOSIS WITH CATATONIC FEATURES TRIGGERED BY HUMAN CHORIONIC GONADOTROPIN AFTER ANABOLIC STEROID ABUSE

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received: 6.10.2021; revised: 10.1.2022; accepted: 29.1.2022

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INTRODUCTION

Anabolic steroids are frequently used by athletes engaged in bodybuilding and weight lifting. The vast majority of users are men over the age of 18 who are engaged in non-professional sports (Kanayama & Pope 2021). Clinical situations such as mania, depression, or psychotic symptoms may occur in individuals due to anabolic steroid use (Pope & Katz 1994). 30% of individuals develop dependence and it has been reported that anxiety, depression, fatigue, attention impairment, sleep problems, suicidality and decrease in libido occur associated with withdrawal period (Pope et al. 2014). In the withdrawal period of anabolic steroids, hypogonadotropic hypogonadism may occur, and human chorionic gonadotropin (hCG) is used by athletes to overcome with it. By imitating the effects of luteinizing and follicle stimulating hormones, it stimulates the testicles and provides sperm and testosterone production (Kanayama & Pope 2021). It has been suggested that some infertility drugs including hCG, cause depression, anxiety, and mood dysregulation (Williams et al. 2007). Furthermore, a manic episode was reported in a patient associated with sublingual hCG use (Sanches et al. 2014).

In this report, it was aimed to present a male patient with psychotic and catatonic symptoms which were thought to be associated prominently with hCG than anabolic steroid abuse.

CASE DESCRIPTION

A 17-year-old high school student, single male patient was admitted to our outpatient clinic by his family due to complaints such as introversion, refusal to eat and drink, not speaking, slowing of his movements, and becoming childish for the last ten days. The patient has been dealing with bodybuilding and using anabolic steroids for the last two years. The patient was on a regimen of oral anabolic steroids in the form of oxymetholone, oxandrolone, mesterolone, and methandienone. It was learned that the patient had not taken anabolic steroids for the last two months and only used hCG 5000 IU weekly for the last three weeks to reduce steroid-related side effects. In the last month, the patient had complaints of guilt, restlessness, constant crying, unhappiness, insomnia, loss of appetite, and decline in academic performance. The patient admitted to a psychiatrist and was treated with mirtazapine 30 mg/day, risperidone 2 mg/day and midazolam 15 mg/day with the diagnosis of major depression. There was no significant improvement, and he gradually became withdrawn, not eating and not speaking for the last ten days. Because he had rigidity all over his body, the patient was administered biperiden 5 mg intramuscular several times in the emergency room and his drugs were discontinued. However, there was no change in the patient's complaints.

In the mental state examination, he was conscious, and oriented. His self-care was low. He had mutism and negativism. He had advanced psychomotor retardation and blocks of thought process. Neurological examination was normal. No abnormality was detected in biochemical analysis, urine drug screen, electroencephalography and cranial MRI except a neutrophilia in the complete blood count. His brother had a history of manic episode triggered by anabolic steroid use. The patient was hospitalized with the diagnosis of substance induced catatonic disorder according to Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) criteria. Lorazepam 1 mg sublingual was given to the patient and an increase in the amount of speech was observed after four hours. Therefore, the lorazepam dose was increased to 1 mg three times a day. After two days, in the interviews with increasing amount of patient's speech, referential delusions were determined. In line with newly detected symptoms, the patient was diagnosed with a substance induced psychotic disorder according to the DSM-5 criteria. Olanzapine 5 mg once a day was started and the dosing increased up to 15 mg/day. Haloperidol 1 mg once a day was added for residual psychotic symptoms when the patient described oversedation. The patient was discharged with partial remission with lorazepam 3 mg/day, olanzapine 15 mg/day and haloperidol 1 mg/day after one and half months.

DISCUSSION

After 1980, anabolic steroids started to be used by not only professional athletes but also the general population to increase their personal appearance (Kanayama & Pope 2018). Usually, athletes use anabolic steroids in supraphysiological doses and sometimes more than one agent together (Congeni & Miller 2002). Our patient was involved in sports at a non-professional level and had used a regimen consisting of oxymetholone, oxandrolone, mesterolone and methandienone for the last two years. It was not known the dosage he used, but it was thought that he probably used higher than normal therapeutic doses. Although the patient had a history of anabolic steroid abuse, he had not been taking these drugs for the last two months. Because of the fact that psychotic symptoms generally occur during the anabolic steroid use, hCG is thought to be effective in the emergence of the existing symptoms. However, no examination was made regarding the use of anabolic steroids in the last two months, so the information obtained from the relatives of the patient could not be confirmed. It has been reported that psychosis is seen in 3.4-12% of anabolic steroid abusers, and psychotic symptoms usually occur with use of more than 1000 mg per week (Pope & Katz 1994). It has been suggested that an acute hyperadrenergic state is first seen due to cessation of anabolic steroids, followed by prolonged depression and craving (Kashkin & Kleber 1989). During the prolonged period of depression, symptoms such as fatigue, depressive mood, loss of appetite, insomnia, dissatisfaction with body image, headache, and decreased libido are observed (Brower et al. 1991). Our patient had symptoms such as guilt, restlessness, constant crying, unhappiness, insomnia, and loss of appetite during the first period of his complaints. This situation supports that the patient was in the withdrawal period and there was no active anabolic steroid use during this period.

On the other hand, the patient had a family history of manic episode after anabolic steroid use. Therefore, it can be thought that there is a predisposition for affective disorders in the patient's family, even if it is triggered by substance use. Nowadays, schizophrenia with catatonic features is rare and catatonic symptoms are usually associated with affective disorders (Rosebush et al. 1990). Therefore, the presence of catatonic symptoms in our patient also supports our affective susceptibility hypothesis. It has been reported that infertility drugs, including hCG, are associated with affective states such as depression, anxiety, and mood dysregulation (Williams et al. 2007). Furthermore, a manic episode associated with hCG misuse for obesity was reported in a 32-year-old female patient (Sanches et al. 2014).

In the lorazepam challenge test performed to confirm the diagnosis of catatonia, a response is expected in the patient five minutes after the administration of one or two doses of 1-2 mg of intravenous lorazepam (Fink & Taylor 2003). There is only sublingual form of lorazepam in our country, so a response was observed approximately four hours after administration of 1 mg sublingual lorazepam in our patient. In most patients, improvement is observed within 3-7 days of initiating lorazepam doses from 8 to 24 mg per day (Dhossche et al. 2016). In our patient, a higher dose regimen was not required, since we had a response up to 80% even at 1 mg three times a day.

CONCLUSION

hCG may trigger affective diseases and may have caused an affective psychosis with catatonic symptoms due to the familial predisposition in our patient. However, it is difficult to reach a definite conclusion on this case alone, large population studies are needed to confirm this hypothesis.

Acknowledgements: None.

Conflict of interest: None to declare.

Contribution of individual authors:

Mehmet Ünler: searching for literature and writing the manuscript.

İrem Ekmekçi Ertek: writing the manuscript.

Behçet Coşar & Zehra Arıkan: critical revision of the manuscript.

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