Case Report
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Mirtazapine Is Effective in Steroid Withdrawal Syndrome Related Depression: A Case Report

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Steroid withdrawal syndrome (SWS) following steroid dependence is becoming a common clinical condition. It may be associated with body image disorder. Though selective serotonin reuptake inhibitors (SSRIs) are found to be effective SWS associated depression, data for this clinical condition is limited. We present a case of SWS associated with body image disorder which improved with mirtazapine. Mirtazapine might be better option than SSRIs in this subgroup of patients for its noradrenergic property and better gastrointestinal profile. More research should explore its efficacy in this clinical condition.

KEY WORDS: Mirtazapine; Steroid withdrawal; Depression; Steroid dependence.

INTRODUCTION

Steroids are frequently abused and are included among abuse of non-dependence-producing substances (F55.5) in International Classification of Disease 10th version by World Health Organization.[1] Recent evidence shows that anabolic steroids frequently can cause dependence syndrome like other psychoactive substances.[2,3] Several mechanisms play important role in developing anabolic steroid dependence. Among them one is body image disorder whereas steroids help users through its anabolic effects.[2,4] Like other psychoactive substances, several neurobehavioral withdrawal symptoms have been described following cessation of steroid abuse. Depression is one among them.[2,5-7] Serotonergic antidepressants have commonly been recommended and found to be useful for treatment of body image disorder related steroid withdrawal depression.[2,6] On the contrary, very few have reported corticosteroid dependence and withdrawal syndrome.[8,9] We here present a case of dexamethasone withdrawal related depression successfully treated with mirtazapine. A MEDLINE and ScienceDirect review through December 2015 revealed no such report on mirtazapine.

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CASE

Index patient, a 25 years old female hailing from rural West Bengal, India, was referred to Psychiatry unit from Medicine inpatient department of our institute with complaints of mood symptoms for last one month. Further review of referral notes in case record file revealed a provisional diagnosis of steroid induced Cushing's syndrome by Medicine inpatient unit. History of her past illness did not reveal any medical and psychiatric illness. On enquiry, she reported that she was taking oral dexamethasone 0.5 mg twice daily for last 2 years as over the counter (OTC) medicine without any prescription. She elaborates that she was too thin to get married. She started taking medication as a way to put on weight to increase her credibility for marriage. She was told regarding dexamethasone as an effective medication to increase body weight by her peers. One of her friends also used to accompany her in doing so. Her weight increased. She did not report any mood symptoms during the period she was taking dexamethasone. As days progressed, she noticed she became overweight. Her skin got discolored at places. She started to have pain and burning sensation in abdomen. Her sleep was disturbed with erratic appetite. Due to these, she stopped taking dexamethasone and attended Medicine outpatient unit on the following day. Her physical examination revealed cushingoid features. She was admitted at Medicine inpatient unit and was treated accordingly. Dexamethasone was restarted at a dosage she was taking and was tapered over a

period of two weeks. Her cushingoid features started to improve but she became more irritable with crying spells. For these she was referred to psychiatric unit for management. She complained of irritability, loss of interest in all works, tiredness throughout the day, disturbed sleep, burning sensation in abdomen. Mental status examination revealed depressive affect with prominent anxiety symptoms, hopelessness and idea of guilt. Neither suicidal ideas nor psychotic symptoms could be elicited. A diagnosis of severe depressive episode without psychotic symptoms (F32.20) and abuse of non-dependence-producing substances (F55.5) were made.[1] Her mood symptoms were considered as a part of steroid withdrawal syndrome (SWS) though it could not be confirmed with biochemical investigation. Escitalopram was started 10 mg/day with gradual tapering benzodiazepines. She was scheduled for a follow-up visit after 3 weeks. After 10 days she came back to psychiatry outpatient department (OPD) with complaints of increased burning sensation in abdomen without minimal improvement of her mood symptoms. As gastrointestinal (GI) irritation is a common side-effect of all selective serotonin reuptake inhibitors (SSRIs), escitalopram was stopped. Mirtazapine was chosen for its GI friendly characteristics. It was started 7.5 mg/day and then gradually titrated up to 22.5 mg/day over a period of 4 weeks. She was advised for 1st follow-up visit after 3 weeks. After 3 weeks she reported improvement in her irritability and other mood symptoms. Her biological functions including sleep and appetite were improved. Notably she did not report any worsening of pain abdomen. Also, she did not indulge herself taking non-prescription OTC steroid. She is maintaining well without any fresh complaints till her last follow-up visit at 12 weeks after her treatment started at our OPD.

DISCUSSION

SWS traditionally refers to describe the relapse of the disease being treated following withdrawal of glucocorticoid therapy. However, an alternative form of SWS can occur where patients experience symptoms of adrenal insufficiency despite acceptable serum cortisol levels.[8,10] The latter group of SWS is thought to be due to suppression of the hypothalamo-pituitary-adrenal axis by the glucocorticoid therapy. As our patient did not have any disease prior to her non-prescription steroid use, she falls in later group of SWS. Only one small case series reported success with fluoxetine in four cases, and another case report described usefulness of electroconvulsive therapy.[6,7] But robust evidence exists for SSRIs to be useful in body image disorders.[6,11-17] In our case mirtazapine improved depression due to its unique dual mode of action. Among several pharmacodynamic properties, it is an antagonist of presynaptic alpha 2-adrenergic autoreceptors and heteroreceptors on both norepinephrine and serotonin (5-hydroxytryptamine) presynaptic axon. Thus it increases noradrenergic activity in synapses.[18,19] We hypothesized mirtazapine reverses the adrenal insufficiency in a steroid dependent patient through its noradrenergic property thereby improving depression in our patient. Though, mood symptoms in SWS are temporary one, persistence of the same for 6 weeks after index patient stopped abusing corticosteroid prompted us to conclude that mirtazapine was effective for corticosteroid withdrawal related depression in our patient.

SWS is becoming a common clinical condition and data for treatment of SWS associated depression is limited. Considering GI side effects of SSRIs, mirtazapine can be a better pharmacological option among patients of SWS. Randomized trials to explore its efficacy in this subgroup of patients should be conducted.

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