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Corticosteroid Induced Manic Episode: A Case Study

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Abstract **Case Report**

Corticosteroids are widely used to treat various medical conditions, but can cause significant psychiatric side effects including anxiety, mood disorders, psychosis, and suicidal behavior. We present a case of a 23-year-old woman who developed manic symptoms after receiving corticosteroids for acute disseminated encephalomyelitis (ADEM). The patient exhibited agitation, logorrhea, insomnia, disinhibition and a suicide attempt shortly after corticosteroid dose reduction. Discontinuation of antidepressants and tapering of corticosteroids, along with antipsychotic treatment with olanzapine, led to symptom improvement. Corticosteroid-induced psychiatric disorders occur in 1.5-57% of patients, with higher doses conferring greater risk. Other risk factors include female sex, history of psychiatric disorders, and underlying neurological conditions that compromise the blood-brain barrier. Gradual corticosteroid taper and addition of psychotropic medications may be required to manage severe cases. This case highlights the importance of monitoring for psychiatric side effects in patients receiving corticosteroids, and the need for therapeutic education to recognize and manage these potentially serious complication.

Keywords: Bipolar Disorder, Corticosteroids, Mania, Side Effects, Manic Episode.

I. INTRODUCTION

Since the 1950s glucocorticoids have been used to treat a variety of pathologies and symptoms including pain, rheumatic pathologies, allergies, asthma, lupus, ADEM etc. However research has shown that using corticosteroids can cause psychiatric disorders such as anxiety and mood disorders [1]. The purpose of this work is to highlight a major psychiatric side effect of corticosteroid use, and explore research papers done on the subject.

II. CASE PRESENTATION

Patient A.H., a 23-year-old recently married woman, a housewife, and has never been under psychiatric care. She has a history of conversion disorder episodes following conflicts but no previous exposure to drugs nor family history of mood disorders nor suicide.

Two months before her admission in the psychiatric hospital (Ibn Nafis Psychiatric Hospital, Marrakech, Morocco), Patient A.H. experienced fever exceeding 40 degrees Celsius, generalized weakness, and headaches. She was hospitalized in a private clinic, although no documentation of her hospitalization is available, and showed improvement after 25 days of hospitalization. However, she experienced a recurrence of symptoms including fatigue, epigastric pain, headaches, somnolence, and withdrawal for a duration of 10 days following her initial improvement. She underwent a neurological consultation where various tests were ordered. Her blood work showed no notable abnormalities. A cerebral MRI revealed lesions suggestive of Acute Disseminated Encephalomyelitis (ADEM).

Following the diagnosis of ADEM she underwent treatment with corticosteroids initially administered as a bolus followed by oral corticosteroids starting two weeks before her admission. She experienced reduction of her symptoms. The corticosteroid dosage was gradually reduced from 60 mg/day to 40 mg/day. However, ten days after the dosage reduction she began exhibiting symptoms of agitation, logorrhea, insomnia, obscenity, and disinhibition.

In response to these psychiatric symptoms, her primary care physician initiated treatment with sertraline and risperidone. However, rather than improvement, her psychiatric condition deteriorated further culminating in a distressing incident where she attempted to jump out of a window in what appeared to be a ludic context.

Upon arrival at the psychiatric emergency department, Patient A.H. presented as agitated yet

maintaining a familiar demeanor. She exhibited logorrhea, engaging in excessive and rapid speech. Furthermore, she displayed unusual behavior by attempting to kiss everyone around her and console other patients in the emergency room.

Given the patient's presentation and recent events, discontinuation of the antidepressants was decided. A neurological consultation advised tapering off corticosteroids. Hospitalization was advised to the family, emphasizing its significant and mandatory benefits in managing the patient's condition. Yet they decided against hospitalization, so a prescription was given containing olanzapine 10 mg/day, lorazepam 2.5mg/day and levomepromazine 25 mg/day.

Following the initiation of olanzapine, Patient A.H.'s progress has been remarkable. Her symptoms of agitation, logorrhea, and disinhibition have noticeably decreased, and she appeared more calm and composed during interactions. The patient came for three follow up consultations, and was not seen again after that.

III. DISCUSSION

Corticosteroids are molecules used in several medical specialties. However, their beneficial effects come with a price in the form of side effects. These can include depressive, anxious, psychotic, and sleep-related symptoms. The prevalence of corticosteroid-induced psychiatric disorders varies widely, ranging from 1.5% to 57%. This variability underscores the importance of monitoring and managing psychiatric side effects in patients undergoing corticosteroid therapy [2].

Corticosteroid-induced psychiatric disorder is the emergence of symptoms within eight weeks after the introduction or increase of corticosteroids followed by the resolution of symptoms after corticosteroid reduction without the addition of an immunosuppressive agent [3].

Rome and Braceland outlined [4], four levels of psychiatric response to corticosteroid treatment:

- Level 1: Feeling of psychological well-being with improved concentration and clarity of thought.
- Level 2: Insomnia, increased motor activity. These two levels affect around 60% of patients.
- Level 3: Severe anxiety and mood swings, affecting 25 to 30% of patients.
- Level 4: Involving 5% of patients, characterized by significant mood fluctuations and delusional manifestations.

Suicidal Risk:

From the data of a cohort study of 372,696 patients undergoing corticosteroid therapy over 18 years, Fardet *et al.*, observed a risk 7 times higher of suicidal behaviors in comparison to the general population [5].

Risk Factors:

1. The Dose:

The dose of corticosteroid therapy an important risk factor (dose-dependent effects) [1]. The Boston Collaborative Drug Surveillance Program reported a positive correlation between corticosteroid doses and the incidence of psychiatric disorders: for doses less than 40 mg/day of prednisone the incidence was 1.3%, while for doses greater than 80 mg/day, the incidence was 18.4% [5, 6].

2. History of a Psychiatric Disorder None Related to Corticosteroid Use

Authors, who advocate for the use of corticosteroids even in cases where patients have a history of psychiatric disorders, do so with low dosages, underscoring the dose-effect relationship [3-7].

3. History of a Psychiatric Disorder Related to Corticosteroid Use

If a corticosteroid-induced disorder has previously occurred there is an increased chance of developing a new episode of a psychiatric disorder. As stressed by Fardet *et al*., corticosteroids should be restarted in these circumstances cautiously and at a lower dosage [3-8].

4. Sex:

Ling and al. report that the majority of patients with corticosteroid-induced disorders are female [9]. The research conducted by Fardet and al indicates that men may are more likely to experience manic episodes and women are be more likely to experience depressive episodes [3-8].

5. Underlying Somatic Pathologies:

Pathologies such as systemic lupus erythematosus (SLE) induce lesions in the central nervous system which makes it difficult to determine whether the psychiatric disorders are caused by the pathology or by the pharmacological treatment [3]. The risk of corticosteroid-induced psychiatric disorders may rise in certain systemic pathologies where the blood-brain barrier (BBB) is compromised [3].

Treatment:

An important aspect of treatment is the gradual dosage reduction or cessation of corticosteroids. If this is not possible, because of the severity of the underlying condition or the possibility of developing secondary adrenal insufficiency, the addition of a psychotropic medication might be required [2].

The effectiveness of olanzapine in manic and mixed episodes has been proven [10]. Furthermore response to other antipsychotics like quetiapine and risperidone as well as psychotropics like clonazepam, gabapentin, carbamazepine or valproic acid have also been reported [10].

IV. CONCLUSION

Corticosteroid induced psychiatric disorders are frequent and are dose dependent Thus it is recommended to prescribe corticosteroids at their lowest effective dosages. Additionally, therapeutic education for patients prescribed corticosteroids is essential to inform them about potential side effects, signs to watch for, and actions to take if psychiatric symptoms emerge. This can contribute to safer and more effective management of their treatment.

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