



**CORTICOSTEROID-INDUCED MANIA: A CASE DISCUSSION**

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**Case**

Ms X, a 32-year-old woman with no significant past psychiatric history, presented to an outpatient psychiatric clinic with acute mania. The patient had grandiosity, flight of ideas, impulsivity, racing thoughts, pressured speech, euphoric mood high energy, hasn't slept more than few hours in a week. Symptoms began 8 days prior to presentation, acutely after she was prescribed a beclomethasone inhaler 3 inhalations each nostril twice daily to treat her poorly controlled asthma. She was not on any other medications. No history of ADHD, recreational drug/alcohol use, thought or mood disorders, drug allergy, any health problems except recent history of asthma. No family h/o mood disorder. Patients father and mother has long standing hypertension which is well controlled by medication. All of her lab-examinations, including CBC, BMP were within normal limits. After consultation with her physician, the beclomethasone was discontinued and her manic symptoms resolved within the next 3 days. She did not require a mood stabilizer or psychiatric hospitalization.

**DISCUSSION**

Psychiatric symptoms develop in 5% to 18% of patients treated with corticosteroids. These effects most often are or psychosis, which emerge within days to weeks of starting steroids. Corticosteroids' psychiatric effects, cognitive, mood, anxiety, and psychotic symptoms were first described as steroid psychosis. The mechanism of the psychiatric side effects of corticosteroids has not been proved totally. Studies show that steroid-induced mania are more common in female gender and suggest that the dopamine concentration in the brain is increased by steroid usage.<sup>[1]</sup> Higher doses and systemic use tend to elicit more side effects, and these side effects can occur during any stage of treatment, including withdrawal. Psychiatric symptoms associated with corticosteroid therapy include mood swings, mania, hypomania, and depression. Mania and hypomania are more common than depression.

**Mania** is a state of abnormally elevated arousal, affect, and energy level, the heightened mood can be either euphoric or irritable.<sup>[2]</sup> flight of ideas which is jumping from one thought to another with out any regulation, pressure of speech, mental status changes, , confusion, hallucinations, and paranoia decreased need for sleep, and hyperactivity. Mania is a syndrome of multiple

causes. The literature suggests that mania is second to psychosis as the most common corticosteroid related mental status change. Although the vast majority of mania cases occur in the context of bipolar disorder it is even a key component of other psychiatric disorders, as schizoaffective disorder, and may also occur secondary to various general medical conditions, as multiple sclerosis, certain medications, asprednisone, cocaine or anabolic steroids. Beclomethasone is a synthetic, halogenated glucocorticoid with anti inflammatory and vasoconstrictive effects.<sup>[3]</sup> Its inhaled form is used for the treatment of asthma, allergic and nonallergic rhinitis, and viral croup. It accomplishes this by inhibiting leukocyte infiltration and suppressing the humoral immune response. Excretion of beclomethasone is mainly fecal and generally the drug is well tolerated. The association of adverse psychological side effects with the use of oral and systemic steroids has been well documented in both the adult and the pediatric populations usually inhaled corticosteroids like beclomethasone dipropionate and budesonide. In most cases symptoms occurred in the first week, and the most commonly reported symptoms are insomnia, aggressiveness, uninhibited behavior, mania, irritability, and increased energy. In most cases the symptoms resolved after discontinuation of the drug, switching to another drug or decreasing the dosage.<sup>[4]</sup>

The therapeutic efficacy of treatment with a dopamine antagonist in patients with corticosteroid-induced mania suggests that dopamine metabolism plays a significant role in production of psychiatric symptoms. Higher doses and systemic use tend to elicit more side effects, and these side effects can occur during any stage of treatment, including withdrawal. This case report suggests a temporal association between the use of inhaled corticosteroids and development of manic symptoms. The inhaled route has been used more widely and has generally been considered safe in the management of asthma in the pediatric population.

neuropsychiatric symptoms are reported after limited corticosteroid exposure, even from topical nasal preparations. The prognosis for acute corticosteroid related neuropsychiatric complications is usually excellent, because dosage reduction or discontinuation of therapy usually results in full recovery. Therapy for CNS side effects of corticosteroids remains directed toward controlling symptoms, primarily with dopamine antagonists such as butyrophenones, benzodiazepines such as clonazepam, and mood stabilizers such as lithium or anticonvulsants. When the manic behaviours have gone, long-term treatment then focuses on prophylactic treatment to try to stabilize the patient's mood, typically through a combination of pharmacotherapy and psychotherapy. The likelihood of having a relapse is very high for those who have experienced two or more episodes of mania or depression.

Imaging studies have shown that the left amygdala is more active in women who are manic and the orbitofrontal cortex is less active. Pachygyria may be associated with mania also during manic episodes decreased activity is found in the inferior frontal cortex. Manic episodes may be triggered by dopamine receptor agonists, and this combined with increased VMAT2 activity support the role of dopamine in mania. Decreased cerebrospinal fluid levels of the serotonin metabolite 5HIAA have been found in manic patients too, suggesting failure of serotonergic regulation and dopaminergic hyperactivity. Inhaled corticosteroid-induced mood symptoms are not an uncommon condition, therefore, the physician should routinely inquire about mood symptoms in patients taking any form of steroid. Studies prove Steroid induced mania is dose dependant.

#### REFERENCES

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