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BROMOCRIPTINE INDUCED HYPERHIDROSIS: A CASE REPORT

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ABSTRACT

Hyperhidrosis is a condition of excessive sweating beyond physical activity to maintain the body heat loss and has a great impact on daily routine life and quality of life. Upto 3% of the world population has hyperhidrosis.[1] It can be caused by infection, endocrine diseases, malignancies, neurological disorders, medication, alcohol withdrawal.[2] Bromocriptine is a semisynthetic ergot alkaloid derivative with potent dopaminergic activity. It also inhibits prolactin secretion and may be used to treat dysfunctions associated with hyperprolactinemia. Bromocriptine has also been indicated for the management of signs and symptoms of parkinsons, as well as the treatment of acromegaly.[3] In this case report, the author discusses a rare adverse drug reaction of bromocriptine - hyperhidrosis.

KEYWORDS: Bromocriptine, hyperhidrosis, dopaminergic.

INTRODUCTION

Bromocriptine is an ergot alkaloid which belongs to the class of dopamine D2 agonists. They have selective agonist activity on dopamine D2 receptors while partial agonist activity on D1 receptors. Depending upon the target, the activity of bromocriptine varies. They bind to striatal dopamine D2 receptors and enhance locomotion and also attenuate bradykinetic symptoms in parkinson's disease, but in pituitary prolactinoma, they act on D2 receptors of anterior pituitary lactotrophic cells and reduce the prolactin synthesis. Bromocriptine is metabolised by CYP3A4 enzyme in the liver and excreted in faeces via biliary excretion. Common side effects are nausea, vomiting, dizziness, hypotension, headache. Recently it is used in treatment of Type 2 diabetes mellitus but it is contraindicated in Type 1 diabetes

mellitus.[4] Different medication classes can have an impact on the human sweating response. Some of them have central actions at the spinal thermoregulatory centres or the hypothalamus, while others have peripheral actions at the sympathetic ganglia or the eccrine-neuroeffector junction. Cholinesterase inhibitors, selective serotonin reuptake inhibitors, opioids, and tricyclic antidepressants are just a few of the medications that can make a patient uncomfortable and self-conscious by making them sweat more than is necessary to maintain thermoregulation. Tricyclic antidepressants, antimuscarinic anticholinergic drugs, and carbonic anhydrase inhibitors are some of the medications that cause hypohidrosis, or insufficient sweating, which might increase the risk of heat exhaustion or heat stroke.[6] The mechanism behind bromocriptine induced hyperhidrosis is unknown.

CASE REPORT

A 33 year old female patient with intellectual disability was referred from another hospital and came to the ER of our hospital with complaints of altered sensorium for 1 week, tremors and generalised rigidity. Her relatives gave a history of taking psychiatric medications (Tab.Olanzapine and Tab.Clonazepam) for behavioural changes and restlessness. Later on Olanzapine dose was increased by her psychiatrist, following which she became drowsy and due to increased drowsiness, the drug was stopped. Later the next day, she had one episode of seizures and she was taken to her nearest hospital where she was instituted Tab Baclofen and Tab Alprazolam. The patient was referred to BCMCH for further management. The next morning the patient develops respiratory distress and desaturation. Patient was shifted to ICU suspecting aspiration pneumonia, probably due to NMS - drug induced. Hence the patient was started on bromocriptine 2.5mg TIS. The patient's general condition improved, however hyperhidrosis was noted. The rare possibility of bromocriptine being the culprit drug was noted and dosage was reduced to 2.5mg BD. The patient's symptoms of hyperhidrosis was reduced following reduction of drug bromocriptine. No other drug given to the patient has adverse effects of hyperhidrosis.

DISCUSSION

The overstimulation of cholinergic receptors on eccrine glands causes the disease of excessive sweating. Sweating more than the body needs for homeostatic temperature regulation is a defining feature of this illness.[4] As first treatments for hyperhidrosis, topical medicines such glycopyrronium tosylate and aluminium chloride are frequently employed.[5] The pathology behind bromocriptine-induced hyperhidrosis is unknown.

In this case our patient was given bromocriptine due to probable NMS. In the following 2 days the patient was found to have hyperhidrosis. In the absence of any other offending agent, it was found that bromocriptine is the culprit drug and reduced. After the reduction of dosage, the patient's sweating had reduced.

CONCLUSION

Bromocriptine induced hyperhidrosis is a rare adverse effect, but the widespread use of bromocriptine raises the possibility of encountering this adverse event in clinical practice. While the mechanism has not been explained, the resolution of hyperhidrosis after reduction of bromocriptine reported herein suggests that bromocriptine is the offending drug. The link between bromocriptine and hyperhidrosis needs to be proven by additional research.

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CONFLICTS OF INTEREST

There is no conflict of interest.

ABBREVIATIONS

D1- Dopamine 1.

D2- Dopamine 2.

ADR- Adverse drug reaction.

CYP3A4- Cytochrome P450 3A4TID- Three times a day.

BD- Two times a day.

NMS- Neuroleptic malignant syndromeICU - Intensive Care Unit.

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