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Case Study Pharmacy

CASE REPORT ON CYPROHEPTADINE INDUCED SEIZURES

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ABSTRACT

Cyproheptadine is a first generation antihistamine which is used as histamine antagonists and also as an appetite stimulant. Antagonism of serotonin on the appetite centre of hypothalamus may account for Cyproheptadine's ability to stimulate appetite. A 28 year old female patient was admitted in general medicine department with chief complaints of sudden onset of involuntary movements of both upper limbs since last night, up rolling of eye, tightness of jaw for 10 minutes and also presented with 2-3 episodes of seizures. She was not a known case of Hypertension, Diabetes Mellitus, Asthma, Arthritis and was healthy so far. She was presented with loss of appetite 2 months back to a local Registered Medical Practitioner. Her past medication history includes Dexamethasone and Cyprohetadine for stimulating appetite since 2 months. Upon admission patient was conscious and coherent and responding to oral commands, on examination facial fluffiness was observed and physician diagnosed the condition as drug induced seizure. Prolonged usage of cyproheptadine leads to seizures as the patient had lean body mass and increase in fress drug concentration. Symptomatic treatment was given to the patient with antiepileptic drugs. So there is a need of evidence based medicine in the use of appetite stimulants.

Keywords: Drug induced seizures, Cyproheptadine, appetite stimulant.

INTRODUCTION

Histamine is found to take part in the inhibition of seizures via H1 histamine receptors. In past epileptic patients were frequently prescribed cyproheptadine, as an appetite stimulant for the treatment of anorexia associated with anti-epileptic drugs and for the management of 'serotonin syndrome' in depressed epileptic patients[1]. Cyproheptadine is a H1 and 5- HT1/2 receptor antagonists, impairing the anticonvulsant activity of antiepileptic drugs and reduces threshold, increases severity of seizures, when administered chronically[2]. It has been found to improve sleep, calmness and negative symptoms in chronic schizophrenics who do not respond to other therapies[4]. Adverse reactions to cyproheptadine may include sedation, confusion, hallucinations, convulsions, hypotension, palpitations, and tachycardia[5]. Dexamethasone is a potent synthetic member of the glucocorticoid class of steroid drugs[6]. It is used to treat many inflammatory and autoimmune conditions, such as rheumatoid arthritis and bronchospasm, idiopathic thrombocytopenic purpura and has also been used in treatment of adrenal insufficiency and Addison's disease[7]. We report here a rare case of cyproheptadine.

CASE REPORT

A 28year old female patient was admitted in MICU with complaints of sudden onset of involuntary movements of both upper limbs since last night @12AM, up rolling of eye, tightness of jaw for 10mins and also presented with 2-3 episodes of seizures. She was not a known case of Hypertension, type 2 diabetes mellitus, asthma, Arthritis or any other skin related complaints. She was presented with loss of appetite two months back to a local registered physician. Upon admission, the patient was conscious, coherent and responding to oral commands. Her present complaints include one episode of seizure last night, altered sensory, rigidity of hands during the episode. The patient

vitals were stable. On examination, facial fluffiness was observed. Other systemic examinations were normal. Serum creatinine, serum electrolytes and complete urine examination were normal. ECG revealed sinus rhythm and poor R wave progression.

The patient is diagnosed to have right frontal granuloma with calcification. The patient was suffering from loss of appetite 2 months back and she was advised to take Cyproheptadine and dexamethasone. Patient was observed to have lean mass with Underweight. Due to underweight and irrational dosage, there is increased free drug concentration in the body and may lead to adverse effects and toxicity. Chronic use of Cyproheptadine lead to symptoms of seizures. As the patient does not have history of seizures prior to the use of drug, Hence by evaluating the underlying causes it is then diagnosed as Cyproheptadine induced seizures.

Table 1: Other lab parameters

LAB PARAMETERS	OBSERVED VALUE	NORMAL VALUE
Haemoglobin	12.6g/dl	11-14g/dl
RBC	$4.3*10^6$cells/cumm	$4-6.5*10^6$cells/cumm
WBC	4200 cells/cumm	4000-11000cells/cumm
Neutrophils	71%	40-70%
Lymphocytes	**18.6%**	20-45%
Eosinophils	4.4%	1-6%
Monocytes	5%	2-10%
Serum Bilirubin total	0.51mg	0-1mg
SGOT	48 IU/L	UPTO 65 IU/L
SGPT	**51 IU/L**	UPTO 37 IU/L
ALP	78 IU/L	15-116
Total proteins	6.7 g/dl	6-8 g/dl
Albumin	3.6 g/dl	3.2-5.8 g/dl
Globulin	3.1 g/dl	2.2-4.8 g/dl

DISCUSSION

Cyproheptadine is a H1 receptor and 5- HT1/2 antagonist. It was widely used as an appetite stimulant, including for anorexia nervosa and cachexia, but in the long-term appeared to have little value in producing weight gain and such use is no longer generally recommended. There has been concern that Cyproheptadine was being promoted and used inappropriately as an appetite stimulant in some developing countries[7]. The study of serotonergic and histaminergic pathway shows that the decreased neurotransmission of serotonin and histamine in the brain reduces seizures threshold[2]. Since, Cyproheptadine interferes with these pathways via antagonizing subtypes of H1 and 5-HT1/2 receptors, impairing the anticonvulsant activity of some antiepileptic drugs and reduces threshold, increases severity of seizures and decreases the efficacy of clinically used antiepileptic drugs, especially when administered chronically[8]. Example of antiepileptic drugs who activities impaired by H1 receptor antagonist are Phenobarbital, Phenytoin, in maximal electroshock-induced convulsions in mice. Valproate was resistant to this hazardous effect of antihistaminic drugs[9].

Here in this case, the patient started taking tab. Cyproheptadine and tab. Dexamethasone for increasing her appetite. Later he developed sudden onset of involuntary movements of both upper limbs, up rolling of eye, tightness of jaw for 10 minutes and was presented with 2-3 episodes of seizures. He was started with an anti epileptic drugs inj. Levetiracetam, inj. Lorazepam and Cyproheptadine was stopped. To the best of our knowledge, there is just one case report in literature of Cyproheptadine abuse[10]. All other cause of seizure was ruled out. After stopping cyproheptadine, patient didn't sustain any further seizures. Later patent was discharged on same epileptic drugs.

CONCLUSION

Cyproheptadine can cause seizures in non epileptic and in epileptic patient. Cyproheptadine reduces threshold, increases severity of seizures and decreases the efficacy of clinically used anti-epileptic drugs.

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