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CASE STUDY

OXCARBAZEPINE-INDUCED TOXIC EPIDERMAL NECROLYSIS: A CASE REPORT

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ABSTRACT

A 66 year old lady admitted to medical college hospital presented with complaints of skin rashes and itching. Past history of the patient revealed that she was on tablet digoxin and sodium valproate. Tablet oxcarbazepine was added by a physician one week back for better control of seizure. Rashes spread on face, eyelid, lip, mouth, neck, limbs, abdomen; in 2/3 parts of her body. Subsequently rashes changed to vesicle and ulcer. Patient recovered after stopping oxcarbazepine. Investigation reports revealed leucocytosis, elevated C - reactive protein and full thickness necrosis of epidermis, confirming the diagnosis of toxic epidermal necrolysis (TEN). She was treated mainly by corticosteroids, antihistamines and antimicrobials and improved. Time taken for resolution of the lesion was 38 days. Re-challenge with the offending drug was not done in the interest of patient and due to ethical constraints.

Key Words: Oxcarbazepine, Toxic epidermal necrolysis, Leucocytosis.

INTRODUCTION

Oxcarbazepine is an anticholinergic, anticonvulsant and mood stabilizing drug, used primarily in the treatment of epilepsy. It is also used to treat anxiety, bipolar mood disorders,¹ and benign motor tics. It is a prodrug which is activated to eslicarbazepine in the liver. It is a structural derivative of carbamazepine, with a ketone in place of the carbon-carbon double bond on the dibenzazepine ring. This difference helps reduce the impact on the liver of metabolizing the drug, and also prevents the serious forms of anemia or agranulocytosis occasionally associated with carbamazepine. It is thought to have the same mechanism of action as carbamazepine - sodium channel inhibition and is generally used to treat the same conditions. It has been approved for monotherapy or adjunct therapy for partial seizures in adults and as adjunctive therapy for partial seizures in children age 4 to 16 years.² Its efficacy is similar to carbamazepine but allergic reactions and enzyme induction is low with oxcarbazepine.³ These properties support the adjunctive use of oxcarbazepine in the treatment of resistant patients.

The incidence of adverse effects reported with oxcarbazepine ranged from 46-68%.^{3, 4} The most common adverse effects are drowsiness, fatigue and dizziness. Other effects with lower incidence include headache, diplopia, ataxia, nystagmus, nausea, vomiting, epigastric discomfort and diarrhea. Elderly patients and those on high daily doses of oxcarbazepine (25-30 mg/day) may suffer from hyponatremia (in 23% cases).⁵ It causes an increase in the plasma concentrations of phenytoin and valproic acid by 20-30%.^{6, 7}

Carbamazepine is the most common cause of Stevens-Johnson syndrome (SJS). Recently, oxcarbazepine has also been shown to induce SJS, although extremely rarely. It is generally considered safe in comparison to carbamazepine.

In this study, we report a rare case of oxcarbazepine-induced toxic epidermal necrolysis of a 66 years old lady

who was suffering from uncontrolled epilepsy due to chronic rheumatic heart disease (RHD) with cardiovascular accident (CVA).

METHODS AND RESULTS (CASE REPORT)

A 66 years old lady who had past history of rheumatic heart disease with cardiovascular accident was admitted in dermatology department of a tertiary care hospital for the treatment of rashes and itching. For the last one year patient was on tablet sodium valproate 200 mg three times daily and tab digoxin (Lanoxin 0.25 mg) once daily for above mentioned problem.

One week before patient had an episode of convulsion and oxcarbazepine (tablet oxetol 150 mg) twice daily was added by a physician. Two to three days after intake of this drug some rashes appeared on her upper limbs. Patient consulted a local physician for this problem and she was referred to higher center for further investigation and management.

In higher center offensive drug was stopped and conservative management started. Rashes appeared on her face, trunk and extremities. The patient was observed for progression of rashes and new erosions. It was itchy in nature. Due to rapid progression of the oral erosions and full-thickness necrotic lesions on the palms, the patient was provisionally diagnosed as a case of evolving Stevens - Johnson syndrome (SJS) or toxic epidermal necrolysis (TEN) and managed accordingly.

Subsequently in one to two days rashes increased in severity. Ulceration appeared in oral region. It also appeared on face, eyelid and at upper and lower lip. She had problem in intake of food because her mouth was blistered and eroded. There was swelling over the eyelid. Some rashes changed to vesicle. Lesions spread all over the body. Vesiculation spread to legs with exfoliation. Ulceration at neck region was very dense. 63% of the body surface area was engaged. Complete hemogram, blood

sugar, routine examination of urine, culture sensitivity of the skin tissue and histopathology of the skin was done. Laboratory investigations showed leucocytosis and elevated C-reactive protein. Patient's skin biopsy revealed full-thickness necrosis of the epidermis, confirming the diagnosis of TEN.

She was treated mainly with corticosteroids, antihistamines and antimicrobials. Patient improved in a week. She was later discharged with necessary advice. Time taken in complete resolution of the lesion was 38 days.

DISCUSSION

Toxic epidermal necrolysis is a rare, life-threatening dermatological condition that is usually induced by a reaction to medications.⁸ The clinical features with which the patient presented were similar to those seen in a typical case of toxic epidermal necrolysis.⁹ Conditions like staphylococcal scalded skin syndrome, herpes simplex, blistering skin diseases, mucocutaneous diseases and vasculitis were excluded clinically. Further rechallenge with oral oxcarbazepine was not done in the interest of the patient and due to ethical reasons. The appearance of toxic epidermal necrolysis in this patient who had taken oral oxcarbazepine could not be explained by any other concurrent diseases or drug or chemical intake. A dechallenge with oxcarbazepine improved the condition. This reaction is dose unrelated and can be labeled as type B class of adverse effect.¹⁰ It can also be considered as probably/ likely as per causality assessment.¹¹

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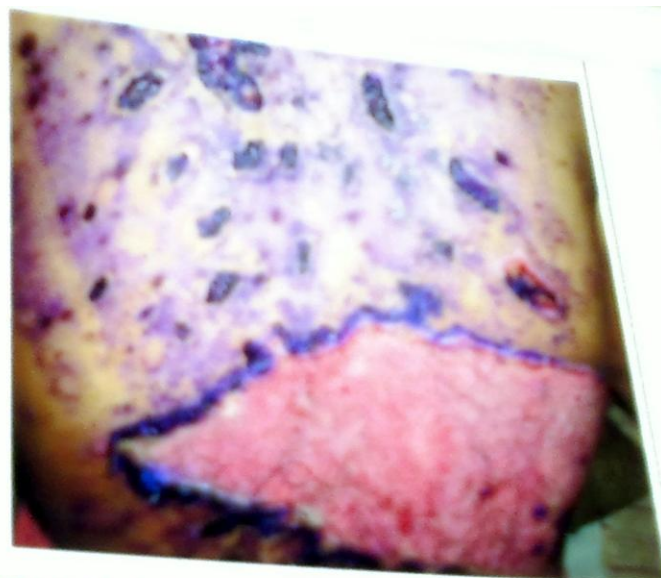


Figure 1: Patient photograph one week after intake of tablet oxcarbazepine

CONCLUSION:

We therefore concluded that this was a case of oxcarbazepine-induced toxic epidermal necrolysis. With this case report we aim to create awareness about rare but potentially fatal drug reaction like toxic epidermal necrolysis that can occur with oxcarbazepine and so the use of this drug should be carefully monitored.