Research Article

Carbamazepine Induced Toxic Epidermal Necrolysis – A Rare Case Report

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ABSTRACT

Toxic epidermal necrolysis (TEN), otherwise known as Lyell's syndrome is a rare dermatological disease which commonly is of drug-induced in etiology and includes drugs like antiepileptics, antiretroviral and antituberculosis drugs. Despite of its adverse effects like nausea, vomiting, haematological disorders, serious life threatening reactions like Toxic Epidermal Necrolysis (TEN), Stevens Johnson syndrome (SJS), can also occur. Here we are presenting a case report of carbamazepine induced TEN when prescribed for herpetic neuralgias in a 54 year old female patient. She developed fever and had swelling of face, both of upper limbs, excessive peeling of skin over face, trunk, back of trunk discharge from eyes after 2 days of treatment with carbamazepine. Dermatological consultation was taken and confirmed to be TEN secondary to drug induced.

Keywords: Carbamazepine, Drug hypersensitivity reaction, Toxic epidermal necrolysis, Herpetic neuralgia.

INTRODUCTION

Toxic Epidermal Necrolysis (TEN) , Stevens-Johnson syndrome (SJS) are rare drug reactions, severe cutaneous in nature and even fatal[1]. Drugs are most common cause in 77-95% of cases[2-3]. Antibacterial drugs associated with TEN are Sulfonamides, Chloramphenicol, Macrolides (eg, Erythromycin), Penicillins, Quinolones. Anticonvulsants are also associated with TEN which include Carbamazepine is an antiepileptic iminostilbene derivative that was initially used for epilepsy but has been used with increased frequency for different indications including chronic pain, trigeminal neuralgia, and herpetic neuralgias. Despite of its common adverse effects like nausea, vomiting, hematological disorders, serious life threatening reactions like Toxic Epidermal Necrolysis (TEN), Stevens Johnson syndrome (SJS) can also rarely occur.

Toxic epidermal necrolysis (TEN), is commonly indicated by widespread Erythema, Necrosis, and Bullous detachment of the epidermis and mucous membranes, leading to exfoliation and likely cause sepsis and/or death. TEN is an idiosyncratic condition, and its occurrence is not easy to fortell. The pathophysiology of TEN has not been explicated well; however, there are various theories which gained wide acceptance. TEN is presumed to be a cytotoxic immune reaction that is destroying keratinocytes that express an antigen, foreign to the body. TEN resembles hypersensitivity reaction, characterized by a delayed reaction to an initial exposure to antigen and an increasingly rapid reaction is observed with repeated exposure. Keratinocyte apoptosis—an organized series of biochemical reactions resulting in cell changes and widespread epidermolysis and blistering of TEN develops due to the cell death.

Management of toxic epidermal necrolysis (TEN) requires instant and careful recognition of the disorder and withdrawal of all potential causative agents. The main crutch of treatment is supportive care till the epithelium regenerates. Isolation, fluid and electrolyte balance, nutritional support, pain management, and protective dressings are the main supportive measures. Early transfer of patients to a burn or intensive care unit has been shown considerable reduction in the risk of infection, mortality rate, and length of hospitalization. The offending agent if identified has to be withdrawn immediate-ly. Administration of fluids and titration based on central venous pressure and urine output is important; on average, 3-4 L of fluids is needed in patients with 50% of the body surface area affected. The goals of pharmacotherapy in toxic epidermal necrolysis (TEN) are to reduce morbidity and to prevent complications. There is no specific treatment modality that has been proven effective, but agents such as crystalloids, antibiotics, antihistamines, anticoagulants, analgesics, and antiseptic agents are important and required for supportive care. Use of corticosteroids is still a controversial in the management of TEN.

Herein we discuss a case of 54 year lady with carbamazepine induced TEN when prescribed for treating herpetic neuralgias.

CASE HISTORY

54 year old lady apparently normal 1 month back when she started lesions on left side of the face, was taken to a nearby hospital and was diagnosed to have Herpes Zoster Infection. CT scan of brain was done which showed Post Forsa Arachnoid Cyst was started on treatment with T. Carbamazepine 300mg BD, and T. Arena G (Methyl cobalamin 500 mcg + Gabapentin 300 mg) for post

herpetic neuralgia. 2 days after the treatment patient started having fever and had swelling of face, both of upper limbs, excessive peeling of skin over face, trunk, back of trunk and discharge from eyes[4].

On Clinical Examination she was noticed to have Multiple erythematous papules over face, upper limb, neck, back and upper chest, Nikolski signs was present (+), Oral Erosion +, Eye Discharge+, lower limb spared at present. On Systemic Examination BP was found to be 120/80 mm Hg, PR-130/min, Higher mental functions(HMF) - Normal, Sensory system -Abnormal, No neck rigidity, Motor system showed decreased power in both upper and lower limbs, Respiratory system - Air Entry Bilaterally Equal (AEBE).

Dermatological consultation was taken and was confirmed to be TEN secondary to carbamazepine. Blood test results on admission revealed an increased Eosinophilic count 14.6% (normal level- 0 to 7%).

DISCUSSION

TEN is severe idiosyncratic reactions characterized by fever and mucocutaneous lesions leading to necrosis and sloughing of the epidermis. Postherpetic neuralgia is a complication of shingles, that is caused by the chicken pox (herpes zoster) virus. Postherpetic neuralgia usually affects the nerve fibers and skin which cause burning pain that lasts long even after the rash and blisters of shingles get dis-appeared. Anticonvulsants, Antidepressants, Opioid Analgesics and Steroids are the drug of choice for postherpetic neuralgias. Our study has demonstrated a similar finding as that of a case report published in Indian J Pharmacol. 2015 - Oxcarbazepine induced toxic epidermal necrolysis[5]. Naranjo Ad-verse Drug Reaction probability scale was used to score and quantify the degree of association be-tween carbamazepine and TEN and it was found to be 8. Challenge was not carried out due to the inherent risk involved, and the patient showed improvement after stopping the drug.

CONCLUSION

The carbamazepine is the most common drug responsible for causing SJS/TEN. The increased prescriptions containing carbamazepine for the pain relief, seizures and diabetic nephropathy may be the reason for the increased occurrence of SJS/TEN due to carbamazepine. Awareness about drugs causing serious drug reactions such as SJS/TEN will help physicians and clinical pharmacist to prevent such problems by judicious use of such drugs and manage the cases properly to reduce mortality and morbidity.

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