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STEVEN JOHNSON SYNDROME INDUCED BY CARBAMAZEPINE TREATMENT IN AN EPILEPTIC PATIENT – A CASE REPORT

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Abstract

Objectives: *Carbamazepine is most commonly used for the treatment of seizure disorders, neuropathic pain and bipolar disorders. It is associated with adverse effects such as nausea, vomiting, drowsiness, dizziness, head ache, impairement in motor coordination, aplastic anaemia, agranucytosis. Rarely life threatening cutaneous reaction such as stevens-johnson syndrome (SJS) or toxic epidermal necrolysis (TEN) due to carbamazepine therapy are more common in people with human leukocyte antigen allele HLA-B*1502.* ***Methodology:*** *We report a case of SJS due to carbamazepine therapy in a patient with epilepsy.* ***Results:*** *A 36 years old female patient from rural area was admitted in the dermatology ward in a tertiary care hospital with a chief complaints of fever, blisters, skin peeling, red eyes, painful skin, burning sensation, erythema of lips, throat pain and difficulty of swallowing for 4 days. She had a past medication history of early two month clinical course of carbamazepine for seizures.* ***Conclusion:*** *We high lightening the importance of early diagnosis of this cutaneous adverse reaction may help in adjusting the further therapy so as to avoid the complications.*

Key words: *Carbamazepine, epilepsy, steven jonhson syndrome, cutaneous adverse drug reaction*

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INTRODUCTION:

Stevens Johnson Syndrome is a rare but serious cutaneous adverse drug reaction [1]. It is believed as a type IV hypersensitivity reaction in which drug or metabolite stimulate cytotoxic T cells and helper T cells to initiate autoimmune reactions [2]. Previous reports suggested that SJS is more common in people with human leukocyte antigen allele (HLA-B*1502) [3]. SJS are usually caused by certain medications such as lamotrigine, carbamazepine, sodium valproate, phenytoin, allopurinol, sulfonamides and nevirapine [4,5]. Aromatic anticonvulsants commonly cause SJS [6,7]. Among which carbamazepine is frequently associated in adverse drug cutaneous reactions [8,9].

Carbamazepine is frequently using in the management of epilepsy, trigeminal neuralgia, bipolar disorder [10]. It is associated with adverse effects such as nausea, vomiting, drowsiness, dizziness, head ache, impairement in motor coordination, aplastic anaemia, agranucytosis [11]. But it is also induces life threatening SJS which is characterized by fever, sore throat, blisters over the mouth, lips, skin peeling, red eyes, painful skin, burning sensation [12]. It is quite difficult to prevent SJS because drug adverse reactions occur in an unpredictable manner but early diagnosis can change the course of this disease. We hereby present a case of SJS to carbamazepine therapy in an epileptic patient.

CASE REPORT:

A 36 years old female patient from rural area of Putalapttu village, Chittor district, Andhra Pradesh was admitted in the dermatology ward in a tertiary care hospital, Sri Venkateswara Institute of Medical Sciences, Tirupati with a chief complaints of fever, blisters, skin peeling, red eyes, painful skin, burning sensation, erythema of lips, throat pain and difficulty of swallowing for 4 days. She was a post operative case of subclavian artery by the right cervical ribs due to the presence of dry gangrene in the tip of index finger of right hand. She had a past medication history of early two month clinical course of carbamazepine for seizures. On physical examination, it was observed that prodrome of cutaneous lesions consists erythematous macules that rapidly develop central necrosis to form vesicles, bullae over oral cavity (erythema on tongue and lips), upper airways.

Laboratory investigations revealed that the patient had elevated levels of erythrocyte sedimentation rate (34 mm/hr) which indicates the inflammatory condition (due to increased protein level during acute phase of inflammation) and decreased levels of serum albumin (2.7 gm/dl) in which edema was developed. Leucocyte count (18,000 cells/mcL) also increases which indicates the sign of inflammatory response. Decreased serum albumin (48%) increases the duration of drugs in free form in the plasma due to which adverse drug reactions occur. There was decrease in platelet count (120,000/mcL) which resulted in thrombocytopenia. We found renal function was normal.

DISCUSSION:

Carbamazepine, being an aromatic drug among the anticonvulsants is the major precipitant of SJS. The etiology of SJS is still unclear. But some pathological mechanism includes are activation of helper and cytotoxic T-cells which induce immune reaction and apoptosis in epidermis, leading to the development of SJS [13,14]. Many researchers reported that SJS by carbamazepine is especially occurs in the carriers of the human leucocyte antigen i.e., HLA B*1502 gene [15]. Early recognition of the adverse drug cutaneous reaction and immediate stopping of the drug are the main stay of the treatment.

The patient was a known case of epilepsy and under carbamazepine therapy with the dose of 100 mg twice daily since two months before hospitalization. She reported to hospital with the clinical features of fever, blisters, skin peeling, red eyes, painful skin, burning sensation, erythema of lips, throat pain, difficulty of swallowing for 4 days and hematologic involvement with thrombocytopenia. The hemorrhagic erosive lesions are present on mucosal surface of blisters. SJS/ toxic epidermal necrolysis (TEN) overlap is characterized by widespread atypical target lesions and maculae. The erosions or blisters involve 10-30% of the body surface. In TEN syndrome, the body surface is covered with erosions or blisters in more than 30% and widespread target lesions and maculae are present. The immunopathological differences between autoimmunological blister disease and SJS syndrome concern deposits of immunoglobulins and complement. In pemphigus, deposits are located in intercellular spaces of epidermis and dermal junction, but in mucosal vessels in SJS. The deposits consist of IgG and C3 in autoimmunological blister disease whereas IgM and C3 in SJS [13].

In our case, the patient was immediately admitted to the hospital after the clinical features. Advised the patient to stop carbamazepine. She was prescribed with topical and systemic corticosteroids after histological and clinical diagnosis. There is considerable debate whether to treat SJS with IV steroids because they may increase the risk of superinfection and delay healing [16]. Some studies revealed good therapeutic effect after treatment of SJS with systemic steroids along with intravenous immunoglobulin therapy [17]. On the other hand, some studies reported that early treatment

with high doses of systemic steroids ensured a rapid recovery, mainly in SJS patients where the skin destruction was not too extensive and could be reversed by anti-inflammatory effects of steroids [18]. IV steroids are probably not beneficial in toxic epidermal necrolysis, which is a more severe cutaneous manifestation of SJS [19]. There are only a few reports on the use of IVIG in severe cutaneous adverse reactions.

CONCLUSION:

Carbamazepine is a drug administered not only to the patients suffering from epilepsy, but also for pain management. So its use is increasing day-by-day. It is very difficult to predict the risk of SJS or TEN appearance. But early diagnosis can help in therapy adjustment and avoid the complications.

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