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Case Report

Case Report on Phenytoin-Induced Toxic Epidermal Necrolysis

Nishoja David[1], Prasad N. Bali[2]*, AHM Vishwanath Swamy[3]

1. Pharm. D Intern Department of Pharmacy Practice KLE College of Pharmacy, Vidyanagar Hubballi. A Constitute Unit of K.L.E Academy of Higher Education and Research, Belagavi, Karnataka, INDIA

2. Assistant Professor Pharm.D, Department of Pharmacy Practice KLE College of Pharmacy, Vidyanagar Hubballi. A Constitute Unit of K.L.E Academy of Higher Education and Research, Belagavi, Karnataka, INDIA

3. Principal, KLE College of Pharmacy, Vidyanagar Hubballi. A Constitute Unit of K.L.E Academy of Higher Education and Research, Belagavi, Karnataka, INDIA

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Abstract

Toxic epidermal necrolysis is a cutaneous drug reaction which is a severe adverse effect that predominantly involves the skin and mucous membrane. Phenytoin is an anti-epileptic medication that belongs to the hydantoin class. Here we are going to present a case of 50-year-old male patient with phenytoin induced toxic epidermal necrolysis. The outcome of this study was to determine the severity of the adverse reaction and its management to improve the patient condition.

Keywords: Toxic epidermal necrolysis, phenytoin, erythromatous, adverse drug reaction, body surface area.

*Address for Correspondence:

Dr. Prasad N. Bali, Assistant Professor Pharm.D, Department of Pharmacy Practice KLE College of Pharmacy, Vidyanagar Hubballi. A Constitute Unit of K.L.E Academy of Higher Education and Research, Belagavi, Karnataka, INDIA

INTRODUCTION

Toxic epidermal necrolysis is a cutaneous drug reaction which is a severe adverse effect that predominantly involves the skin and mucous membrane. It is also named as Lyell's syndrome. It is a rare and life-threatening condition which is distinguished by mucocutaneous tenderness and typically hemorrhagic erosions, erythema and more or less severe detachment of epidermis presenting as blisters and area of denuded skin. It encompasses 30% of the body surface area. Medication such as cotrimaxazole, sulfadoxine, pyrethamine, carabamazepine, phenytoin, Phenobarbital and NSAIDS are the leading cause of toxic epidermal necrolysis [1].

Phenytoin is an anti-epileptic medication that belongs to the hydantoin class. It is not CNS depressant and it causes modest drowsiness at therapeutic doses, but this does not increases with dose. Excitement is produced by rather toxic dose. It restricts the spread of seizure activity [2].

CASE REPORT

A 50 -year-old male patient was admitted to the department of general medicine in KIMS Hospital Hubballi who presented with the complaints of facial puffiness, impaired sensorium and fever over the past fifteen days with no history of poison consumption. He had a history of hypertension, diabetes mellitus for the past ten years and is on regular prescription as well as seizure disorder from one month and is on prescription Phenytoin (100 mg) thrice a day. The patient is chronic alcoholic from one month and had a history of cerebellar atrophy. [Patient is drowsy and poor responsive to oral commands]

Initial examination revealed temperature of 102 F^0, BP 160/110 mmHg, GRBS 228 mg/dl, pulse102 beats/min and respiratory rate 20cpm. Laboratory investigations such as complete blood count were normal and serum electrolytes. In renal function test blood urea 51 mg/dl and liver function test bilirubin total 2.9mg/dl.

On local examination redness of the face and rashes over the body was present and symptoms started on 29-11-2021 night which was progressive in nature.

In the view of the above complaints the patient was referred to dermatology department for further examination. The dermatologist on examination confirmed as multiple well defined erythromatous, maculopapular rashes with periorbital edema and facial puffiness. He was diagnosed as toxic epidermal necrolysis drug reaction secondary to phenytoin.

As the patient was chronic alcoholic he was referred to the psychiatry department for further examination. When the psychiatrist started counseling, the patient gave irrevelent answers, due to this inconvenience, the counselor requested

information from bystanders. Hence the patient's wife revealed that he is irritable, has irrevelent speech, disturbed sleep and also does not recognize his family members. Psychologist diagnosed that patient has alcoholic dependence syndrome and was advised, lorazepam (2 mg) slow intravenous and thiamine (300mg) in 100ml normal saline IV twice a day, electrolytes and amino acids 500mg once a day.

Initial treatment for the toxic epidermal necrolysis started with the prophylactic antibiotics, corticosteroids, nutritional supplements, wound care and intravenous infusion fluids.. Meropenem (1g) thrice a day, levofloxacin (500mg) twice a day, metronidazole (100ml) thrice a day, moxifloxacin eye drops twice a day, dexamethasone (2cc) twice a day, chlorpheniramine maleate (10mg) once a day at night, levetiracetam (500mg) twice a day it is given for the seizures, immunoglobulin (0.5 g/kg/day), biphasic isophane insulin (12 unit) twice a day, metformin (500mg) thrice a day, amlodipine (5 mg) once a day, intravenous fat emulsion with medium and long chain triglycerides (500mg) once a day , ascorbic acid (500mg) thrice a day. Liquid paraffin and framycetin for the local application.

The causative agent i.e. tablets phenytoin was discontinued from the treatment and supportive management was considered. The patient condition started to resolve after the systematic treatment. While discharging the patient condition was better and was advised for the follow up after two weeks in the OPD department.

DISCUSSION

TEN is a rare severe mucocutaneous drug reaction which is also known as Lyell's syndrome. It is a part of spectrum of dermatological condition involving three variants as per the body surface area. If BSA less than 10% its SJS ,10-30% BSA it is considered as SJS–TEN overlap syndrome and more than 30% BSA is indicated as TEN. TEN is a rare with an incidence rate of 0.4-1.2 per million individuals.

In this study the toxic epidermal necrolysis was analyzed by using the WHO-UM causality scale and Naranjo scale. According to the WHO-UM causality scale the patient falls under the probable/likely category and total score of the Naranjo scale algorithm was three which is categorized as possible reaction. The offending drug was dechallenged, as rechallenge was risky for the patient condition [3]. In the treatment the tablet phenytoin was replaced with the tablet levetiracetam (500mg) twice a day.

In this case the patient is treated with the IVIg (0.5g/kg/day). IVIg inhibit the progression of the TEN. The IVIg contains anti-Fas anti-bodies which is able to inhibit the Fas-mediated keratinocyte apoptosis in-vitro [4] and improve the patient condition

CONCLUSION

The severity of the toxic epidermal necrolysis in our study was done by using WHO-UM scale and Naranjo scale. SCORTEN score and EUROSCAR score should also be considered for the study.

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CONFLICTS OF INTEREST

There are no conflicts of interest

ABBREVIATION

TEN	Toxic epidermal necrolysis
SJS	Stevens- Johnson syndrome
BSA	Body surface area
IVIg	intravenous immunoglobulin

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