Open Access Journal
RESEARCHERID
THOMSON REUTERS
International Journal of Medical Research and Pharmaceutical Sciences
Volume 4 (Issue 9): September 2017 ISSN: 2394-9414
DOI-10.5281/zenodo.886071 Impact Factor- 3.109

PHENYTOIN INDUCED TOXIC EPIDERMAL NECROLYSIS: A CASE REPORT

S. M. Biradar[*1], Pathi Indu[2], Pournamy[3], Manjunatha Rao G[4], Anand P. Ambali[5], Vijaykumar Warad[6] & N .V. Kalyane[7]
[1,2,3,4&7]Department of Pharm.D Programme, SSM College of Pharmacy & Research Centre, Vijaypur-586103, Karnataka, India.
[5&6]Department of General Medicine Shri B M. Patil Medical College Hospital and Research CentreVijaypur-586103, Karnataka, India

Keywords: *Phenytoin toxicity; Toxic epidermal necrolysis; Life threatening.*

Abstract
The drug induced Toxic epidermal necrolysis (TEN) is an acute emergency and is potentially life threatening if not treated promptly. It is obvious that patients with TEN demand much more meticulous and aggressive therapy for better outcome. Adverse drug reactions (ADRs) are one of the most leading causes of death among hospitalized patients; these may vary from mild rashes to severe reactions such as Stevens-Johnson syndrome (SJS) and Toxic epidermal necrolysis. Though the Phenytoin is an anti-epileptic drug, there is increased risk of TEN and other skin related problems. Thus utmost care should be taken while handling with the Phenytoin.

Introduction

Epilepsy is a common neurological disorder that affects people worldwide. It is relatively common condition characterized by a tendency for recurrent seizures, which is due to the disturbance of spread of electrical discharge of the cortical neurons.[1] Phenytoin (5,5-diphenylhydantoin) is one of the most effective and widely prescribed drug for the treatment of epilepsy, which was found to cause Toxic epidermal necrolysis (TEN) more frequently[2]. Despite the inherited risk of dose related toxicity attributed to its zero-order pharmacokinetics, Phenytoin is still considered a first line drug therapy for some types of seizures.[3]

Adverse drug reactions (ADRs) are one of the most leading causes of death among hospitalized patients and occur in between 0.3 to 7 per cent of all hospital admissions.[4] these may vary from mild rashes to severe reactions such as Stevens-Johnson syndrome (SJS) and Toxic epidermal necrolysis etc. Mostly Anti-Epileptic Drugs are associated with increased risk of adverse reactions. [4] In 70% of the patients receiving Anti-Epileptic Drugs (AEDs), the seizures are well controlled but however simultaneous occurrence of ADRs are the most challenging feature associated with the treatment. In case of 15% of people receiving AEDs, cutaneous reactions, such as maculopapular or erythematous pruritic rash, may appear within four weeks of initiating therapy with AEDs.[3]

Toxic epidermal necrolysis also known as Lyell's syndrome can be defined as rapidly developing extensive erythema, necrosis, and detachment of the epidermis and mucous membranes that result in severe and fatal systemic complications such as sepsis, if left untreated. TEN is commonly considered a drug induced reaction rather than a skin disease.[5] Thus, therapeutic monitoring of a patient's Phenytoin serum level is crucial to assure the safety and efficacy of Phenytoin therapy.[5]

Open Access Journal
RESEARCHERID
THOMSON REUTERS
International Journal of Medical Research and Pharmaceutical Sciences
Volume 4 (Issue 9): September 2017 ISSN: 2394-9414
DOI-10.5281/zenodo.886071 Impact Factor- 3.109

Case Study

Patient's Medication History: A 25-year old male patient was admitted to a Shri B M. Patil Medical College Hospital and Research Centre with chief complaints of skin lesion over the face, trunk and extremities since from one week. He had a past medical history of Alcoholic Hepatitis for which he was consulted local hospital where he had multiple episode of seizure for which he was started on Phenytoin. The patient was apparently normal for two weeks after initiation of the Phenytoin therapy; there on he developed red colored skin lesion associated with pain, over face **(Fig. 01)** and trunk insidious in onset. This gradually progressed to involve the extremities **(Fig. 02)** and genitalia. The lesion was become fluid filled and ruptured spontaneously to leave behind raw areas. The patient was then brought to dermatology ward of the hospital when the above symptoms were accompanied with other chief complaints of high grade fever, continuous in nature associated with chills and rigor. The patient appeared to be conscious, coherent, cooperative, moderately built and nourished. He confirmed the use of alcohol and tobacco for two years. The patient sticks to vegetarian diet with a reduced appetite and sleep.

General Physical Examination: On cutaneous examination multiple purpuric, dushy red patches along with erosions and crusting were found over the face, trunk, scalp and extremities. Bullae were present over both the legs. Erosion of buccal mucosa and hemorrhagic crust over the lips were also seen. Increased eye discharge, pedal edema and longitudinal ridges over finger and toe nails were also observed.

Laboratory finding: On admission, the patient was conscious, and his blood pressure was 120/80 mmHg, pulse rate of 80/min and his abdomen was soft and non-distended with no tenderness or hepatic splenomegaly. No focal deficits were seen on neurological examination. His lab investigations were: White blood cell 5,840cells/cmm, red blood cell 4.36x106/mm3, hemoglobin 13 g/dl, erythrocyt sedimentation rate, 15mm/1st in hour, platelets count 4.7lakh/cmm, serum creatinine 0.6 mg/dl, blood urea 18 mg/dl, bilirubin (total 0.5 mg/dl, direct 0.3 mg/dl, and indirect 0.2 mg/dl).

Diagnosis: Toxic Epidermal Necrolysis (TEN) Secondary to Phenytoin.

Table 01. Treatment Chart

Brand Name	Generic Name	Dose (mg)	Frequency	Indication	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7
Tab Psorid	Cyclosporine	100	1-0-0	Immune suppressant	✓	✓	✓	✓	-	-	-
Inj. Levipil	Levetiracetam	500	1-0-1	Seizures	✓	✓	✓	✓	✓	✓	✓
Tab Dolo	Paracetamol	650	1-0-1	Fever	✓	✓	✓	✓	-	-	-
Ont. Flomo	Moxifloxacin	0.5% w/w	1-0-1	Bacterial Eye infection	✓	✓	✓	✓	✓	✓	✓
Inj. Advent	Amoxicillin	1200	1-0-1	Antibiotic	✓	✓	✓	✓	-	-	-
Tab Anxit	Alprazolam	0.25	0-0-1	Anxiety	-	-	-	✓	-	-	-
Inj. Tazomac	Pipercillin/ Tazobactam	4500	1-0-1	Antibiotic	-	-	-	-	✓	-	-
Inj. Rantac	Ranitidine	50	1-0-0	H_2 Antagonist	-	-	-	-	✓	✓	✓
Tab Zocon	Flucanazole	50	3-0-0	Anti-Fungal	-	-	-	-	✓	✓	✓