

“Toxic Epidermal Necrolysis (TEN)” - A Probable Adverse Reaction of Erythromycin, Quinine and/or Ondansetron- Case Report

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Abstract

Toxic epidermal necrolysis (TEN) is characterized by confluence of blisters with positive Nikolsky sign and involvement of more than 30% of body surface area. We reported a case of a 17 year old male who developed TEN after commencing erythromycin 500 mg, quinine 300 mg and ondansetron 8 mg for sore throat, fever and vomiting. Diagnosis of TEN was confirmed by biopsy. Laboratory results showed leucopenia, thrombocytopenia and elevated liver enzymes. Offending drugs were stopped after the admission and supportive treatment and ventilator support provided, but patient died because of severity of reaction. Total cost of management was Rs.16,358/-. This case highlights that TEN is a life-threatening condition associated with a high incidence of mortality and economic burden to a patient.

Keywords: Toxic epidermal necrolysis, Erythromycin, Quinine, Ondansetron

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Introduction

Toxic epidermal necrolysis (TEN), also known as Lyell's syndrome, is a life-threatening immune mediated dermatological condition in which reaction to certain drugs may be the cause for 95 % cases.^[1] Other etiological factors include infections, radiation therapy and underlying malignancy. It is characterized by confluence of blisters leading to positive Nikolsky sign and involvement of more than 30% of body surface area.^[2] We report herewith a rare case of TEN probably

caused by erythromycin, quinine and / or ondansetron.

Case Report

A 17 years old male patient was admitted in critical care unit after consultation in dermatology outpatient department (OPD) in Sir Takhatsinhji General Hospital, Bhavnagar, Gujarat, India with history of skin lesions for 2 days and shortness of breath for 1 day. On detailed history, patient was having sore throat, fever, vomiting before 3 days for which he had taken drugs erythromycin, quinine, ondansetron after consultation with local

doctor nearby. After taking 2 tablets of ondansetron 4 mg, 1 tablet of erythromycin 500 mg and quinine 300 mg, next day morning patient developed reddish skin lesions on face, chest, abdomen and extremities associated with puffiness on face and lips, lesions over oral and genital mucosa. He was non alcoholic, non smoker but having habit of tobacco chewing. Past history of drug reaction could not be elicited.

On local examination, there are multiple erythematous, flaccid, clear fluid filled vesicles and bullae of varying sizes along with multiple erythematous macula with central pigmentation over the face, chest, abdomen, extremities. Conjunctiva and cornea were congested. Multiple erosions of varying sizes were noted on oral cavity and genitals. Nikolsky sign was positive. Total body surface area involvement (BSA) was of 73%. Diagnosis of drug induced TEN was made clinically.

On the day of admission investigation revealed: Hb-13.0 gm% (12 – 18 gm%), total leucocyte count- 1300 cells/ cmm (4400 – 11000 cells/ cmm), platelet count- 45,000 lacs / cmm (1.5 -4.5 lacs /cmm), serum creatinine- 1.7 mg% (0.7 -1.7 mg%), random blood sugar- 388 mg% (up to 140 mg %). Peripheral smear was

negative for malarial parasites. On day 2, skin biopsy was performed and finding was suggestive of TEN. H.I.V status was non reactive and on urine and blood culture, no organisms were isolated. On day 3, liver enzymes were elevated: SGPT- 319 U/L (up to 45 U/L) and SGOT- 433 U/L (up to 35 U/L). On day 5, swab was send from the skin lesion for culture. *Staphylococcus aureus* and *pseudomonas* was isolated.

After admission, all drugs taken by patient before the appearance of lesions were discontinued. Nursing care of skin, eye and oral cavity were done. Fluid and electrolytes balance was maintained through intravenous fluids. Patient was treated with Inj. Cefoperazone plus Salbactam (1 gm + 1 gm/ day) for 8 days and Inj. Metronidazole (500mg 8 hourly) for 8 days along with Inj. Dexamethasone (4mg/ day) for 5 days. On day 3, patient was kept on ventilator. There was no improvement in skin lesions and patient's general condition was deteriorated. Patient was died on 9th day of admission due to septicemia and respiratory failure.

A casualty analysis is done by using the Naranjo's algorithm and ADR to be a 'probable' adverse reaction^[3]. SCORTEN score for this patient was 03 (BSA > 10%, RBS > 250mg%, heart rate > 120/ minute).

Discussion

Erythromycin is a macrolide group of antibiotic and used as a first choice drug for whooping cough, atypical pneumonia caused by *Mycoplasma pneumonia* and *Legionnaire's pneumonia* and also useful in upper respiratory tract infection. Few cases of fixed drug eruption⁴ and Stevens Johnson syndrome has been reported with its use.⁵⁻⁸

Quinine is an antimalarial drug which is used in chloroquine resistant falciparum malaria or cerebral malaria. It is a levorotatory alkaloid containing a quinoline group attached through a secondary alcohol linkage to a quinuclidine ring. It is known to produce various adverse effects, skin rashes and some allergic reactions. Cutaneous reaction in the form of DRESS syndrome⁹, fixed drug eruption¹⁰, cutaneous vasculitis¹¹ and photosensitive dermatitis¹² has been reported with the use of quinine.

Ondansetron is an antiemetic drug which is used in postoperative, radiotherapy and chemotherapy induced vomiting. The wide availability has promoted the off label use of this drug, such as in the treatment of antimalarial-induced vomiting, gastritis and other emetogenic conditions. Multifocal

fixed drug eruption has been reported with ondansetron.¹³

To our knowledge, there have been three previous case descriptions of SJS with erythromycin.⁵⁻⁸ Quinine is frequently associated with dermatologic toxicity but, no case of toxic epidermal necrolysis has been reported with its use. No case description has been found for association of ondansetron with SJS or TEN. Because of polypharmacy in this patient, single drug responsible for TEN cannot be find out. In this case, all the offending drugs were stopped after the admission, but patient did not improve because of severity of reaction. Total cost of management for this patient was Rs. 16,358 which includes cost of drugs Rs. 8388, cost of consumables Rs. 780 and cost of investigations Rs.7190.

Aim of this case report is to create awareness about rare but potentially life threatening drug reaction like TEN that may occur due to either of these drugs: erythromycin, quinine or ondansetron. This case highlights that TEN is a life-threatening condition associated with a high incidence of mortality with increase economic burden.

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