

Exploring Nimorazole-Induced Toxic Epidermal Necrolysis: A Case Presentation

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Abstract

Keywords:

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Toxic epidermal necrolysis is a dermatological emergency. Mostly caused by Sulfonamides or NSAIDs. Nimorazole associated toxic epidermal necrolysis is rare. We present here an unusual case of toxic epidermal necrolysis caused by Nimorazole

Introduction

Toxic epidermal necrolysis (TEN) is a rare but serious dermatological emergency characterised by diffuse exfoliation of the skin and mucous membranes due to immune mediated destruction of the epidermis which can lead to sepsis, respiratory distress & death. There is no sexual or racial predilection. It is fairly rare with an annual incidence of 1.2 cases per million.

Nimorazole is a 5-nitroimidazole derivative. It is an antimicrobial agent like metronidazole and there is paucity of reports of nimorazole associated toxic epidermal necrolysis in the literature.

Case report

A 52 year old man known case of chronic liver disease presented to the emergency department with rashes all over body & mild fever. Patient denied any known drug allergy. On careful history taking it was understood that patient had diarrhoea before, for which he took Nimorazole tablets 500mg twice daily. Rashes appeared after 48 hours of starting nimorazole therapy.

On examination, pulse rate 104/min, BP was 126/80mmhg. Systemic examination was normal. The lesion started as painful erythematous macules, progressed into blisters followed by diffuse exfoliation of the skin involving hands, back, abdomen. Erosions were present over oral mucosa, lips, and genitalia. Pseudo-Nikolsky sign was positive. >30 % body surface area was affected.

CBC showed TLC of 8900 with ESR 80. LFT showed bilirubin 3.5 with slight raise in liver enzymes. KFT and chest X-ray was normal.

The patient was admitted to medicine ward. Nimorazole was stopped immediately. The patient was managed with intravenous fluids, prophylactic antibiotics & systemic steroids. Proper wound care was taken with topical antibiotics & dressing was done. He was monitored continuously for hemodynamic stability & electrolyte imbalance.

Figure: 1



Multiple erythematous erosions over the lower lip with hemorrhagic crusts

Figure: 2



Dusky brownish black epidermal desquamation with few purpuric bullous epidermal skin lesion over right arm & forearm

Figure:3



Erythematous skin full thickness epidermal desquamation over the trunk

Discussion

We made a diagnosis of TEN in our case based on history of drug exposure with a typical clinical manifestation of erythema, blistering and detachment of skin involving >30% of BSA with characteristic pseudo-Nikolsky sign.

Differential diagnosis of multiple blisters with diffuse exfoliation of skin includes Staphylococcal Scarlet Skin Syndrome (SSSS), Toxic Shock Syndrome (TSS) & pemphigus.

Toxic epidermal necrolysis also known as Lyell's syndrome was first described by Lyell in 1956. The word toxic alludes to the constitutional symptoms while necrolysis refers to the necrosis and detachment of the full thickness of the epidermis. Drug induced TEN accounts for up to 80–95% of cases of TEN. The most common offending agents are sulfonamides, NSAIDs, butazones and hydrantoin. Nitroimidazole group of drugs are less commonly associated.

TEN is thought to stem from an immunological process involving cytotoxic T cells, natural killer cells and the production of a cytotoxic protein called granulysin which is aimed at the destruction of the keratinocyte skin resulting in diffuse separation of epidermis from dermis. Complications include hypovolemic shock, acute tubular necrosis, gastrointestinal haemorrhage, bronchopneumonia and disseminated intravascular coagulation.

References

1. Qadir S, Raza N, Qadir F. Drug induced toxic epidermal necrolysis: two case reports. *Cases Journal*. 2009;2(1):7765.
2. Bologna J, Jorizzo J, Schaffer J. *Dermatology*. [Philadelphia]: Elsevier Saunders; 2012.
3. Gerull R, Nelle M, Schaible T. Toxic epidermal necrolysis and Stevens Johnson syndrome: a review. *Crit Care Med* 2011;39:1521–32.
4. Hoetzenecker W, Mehra T, Saulite I, et al. Toxic epidermal necrolysis. *F1000Research*. 2016;5:F1000 Faculty Rev-951.
5. Estrella-Alonso A, Aramburu JA, González-Ruiz MY, Cachafeiro L, Sánchez MS, Lorente JA. Toxic epidermal necrolysis: a paradigm of critical illness. *Revista Brasileira de Terapia Intensiva*. 2017;29(4):499-508