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Case Report

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Toxic Epidermicnecrolysis Two Cases Presentation

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Abstract

Toxic epidermal necrolysis (TEN) is a type of severe skin reaction. Together with Stevens-Johnson syndrome (SJS) it forms a spectrum of disease, with TEN being more severe and commonly the risk of death in most of the cases it is very high. Early symptoms include fever and flu-like symptoms. A few days later or hours the skin begins to blister and peel forming painful raw areas. Mucous membranes, such as the mouth, are also typically involved. Complications include dehydration, sepsis, pneumonia, and multiple organ failure, and death.

Aim: *The aim of this prospective observational study was to describe the features of these two patients admitted by the Medical team in our tertiary hospital.*

Methods: *These two cases were admitted by the medical team of our hospital with TEN/SJS over the period of two years. Severity was graded according to the percentage of the skin involved. Co-morbidity diagnoses, clinical features, investigations and complications were noted.*

Results: *Case number one an HIV positive on Alluvia for 2 years, the probable cause was the pain killer that he was on due to back pain. On his last reviewed he was well and all the denuded areas healed.*

Second case a female patient history of diabetes mellitus and Neuropathy treated with Tegretol (Carbamazepine) sadly died in our hospital due to complications.

Conclusions: *The causes of TEN in these patients were due to anti-inflammatory and carbamazepine. More than 50% of the skin was involved, and severe sepsis was the complication that provokes the death of the second patient.*

Keywords: Skin, Toxic Epidermicnecrolysis, Necrolysis, Steven Johnson Syndrome, Drug Reaction Issue Section: Original Papers

Introduction

Toxic epidermal necrolysis (TEN) is a potentially life-threatening dermatologic disorder characterized by widespread erythema, necrosis, and bullous detachment of the epidermis and mucous membranes, resulting in exfoliation and possible sepsis and/or death (see the image below). Mucous membrane involvement can result in gastrointestinal haemorrhage, respiratory failure, ocular abnormalities, and genitourinary complications.

The cases we are going to talk about were admitted by the medical team of our tertiary hospital with the diagnosis of toxic necrolysis, unfortunately one of them died due to sepsis, the other we saw him in our clinic last month for a follow up consultation and he is very well. Toxic necrolysis is a severe dermatosis; the most common causes are antibiotics and antiepileptic therapy. Here in South Africa because of the VIH/aids and Tuberculosis, first cause is the anti-retroviral medication.

Case 1

A 32 year male patient, HIV + on alluvia for 2 years, came to hospital referred from the local clinic, complaining of a week history of blisters on the body and peeling of the skin, after he started with paracetamol and tramadol prescribed at the clinic due to back pain. On examination a wild spread almost generalized blistery rash and denuded areas on back and trunk, also hyper pigmented patches can be seen on trunk and limbs, oral mucosa with secretion and exulcerations. Patient was admitted in our ward and started with steroids, fluids and antibiotics. Dressings daily with sterile water and we used paraffin gauze and bandage, was isolated for 4 days and same treatment no blisters, peeling areas healing, was seen by dietician and continue with fluids, mouth improved and he could eat, also started on prednisone 60mg daily oral and continue with antibiotics. On the 10th day with healing areas no new blisters, we decided to move him to high care room; Day 13th was very well, we discharged him on 50mg of prednisone. And should continue with

the dressings at local the clinic. When we saw him, on examination the denuded areas were healed.

Case 2

43 year old male. RVD negative: Elisa. Type II DM: poorly controlled. On metformin and insulin. Followed up at the local clinic until September 2015. 1st referral to casualty with uncontrolled HGT. Seen monthly at OPD south for uncontrolled HGT. No bloods ever done in OPD south. Pt seen by Dietician x1. Pt subsequently developed peripheral neuropathy due to uncontrolled DM. Started on amitriptyline and pyridoxine. In November 2015, Doctor in OPD south notes that Amitriptyline is not working and changes it to tegretol. Patient forgot tegretol at Pharmacy. Tegretol prescribed in December again and issued to pt. Last script on the 7th Jan 2016. Patient presented again in casualty on the 19th Jan 2016 referred by local clinic at 19h 00. Referral notes: oral sores, difficulty swallowing, itchy rash all over body, respiratory distress and swollen lips. Pt treated the previous week with same problem and no response. Assessed as an allergic reaction, treated with phernagan and referred. Pt triaged in casualty at 19h 40. Similar history noted by triage sister. Pt seen by doctor at 20h 40. Assessed as maculopapulo rash and fever of unknown cause.

Vitals: T=37.7, P= 152, ICT= Neg Bloods: normal (U+E, CMP, FBC). HBA1C=6.9%, CRP=58, ESR=33

Seen at 12h 00 by dermatology. Admitted to the ward. Pt only gets to the ward at 18h 00 on 20/01/16 Tegretol part of script. CWR: diagnosis reviewed again as TEN. Pt is moved to isolation and treatment remains unchanged. Surgery consult done for dressing of skin. On subsequent days it is noted by multiple doctors that pt is not getting adequate hydration and skin is left uncovered and entire skin is peeling off. Formal complaint is laid with sister in charge. Still urine is noted to be coke coloured and pt is severely dehydrated. Early on 30th Jan 2016 doctor on call gets called to ward pt condition has worsened. Pt in septic shock with respiratory distress. Pt resuscitated and started on adrenalin infusion. Handed over to on call team in the morning. MO sees pt and plan is made. Pt re assessed at 13h 30 in the afternoon and declared dead. Septicemia with septic shock (immediate). TEN due to tegretol.

The most common cause is certain medications such as lamotrigine, carbamazepine, allopurinol, sulfonamide antibiotics, and nevirapine [1]. Other causes can include infections such as Mycoplasma pneumoniae and cytomegalovirus or the cause may remain unknown [2, 3]. Risk factors include HIV/AIDS and systemic lupus erythematosus [1]. Diagnosis is based on a skin biopsy and involvement of more than 30% of the skin [2]. TEN is a type of severe cutaneous adverse reactions (SCARs), together with SJS, a SJS/TEN, and drug reaction with eosinophilia and systemic symptoms [4]. It is called SJS when less than 10% of the skin is involved and an intermediate form with 10 to 30% involvement [2]. Erythema multiform (EM) is generally considered a separate condition [5]. Bastuji-Garin et al. developed and validated a TEN-specific severity-of illness score (SCORTEN) more than a decade ago. The SCORTEN, which should be calculated on day 1 and 3, have been shown to be remarkably accurate in predicting mortality in patients from Europe and North America.

It Has 3 Categories

SJS: epidermal detachment of less than 10% of the skin, with erythema and dusky macules.

SJS/TEN: epidermal detachment of 10-30% of the skin with widespread red macules.

TEN: epidermal detachment of the skin in more than 30% of the body, with dusky red macules and blisters, and mucosae involvement.

Treatment typically takes place in hospital such as in a burn unit or intensive care unit [2, 6]. Efforts include stopping the cause, pain medication, and antihistamines [2, 3]. Antibiotics, intravenous immunoglobulins, and corticosteroids may also be used [2, 3]. Treatments do not typically change the course of the underlying disease [2]. Together with SJS it affects 1 to 2 persons per million per year [1]. It is more common in females than males [2]. Typical onset is over the age of 40 [2]. Skin usually regrows over two to three weeks; however, recovery can take months and most are left with chronic problems [2, 3].

The diagnosis of TEN is based on both clinical and histologic findings. Early TEN can resemble non-specific drug reactions, so clinicians should maintain a high index of suspicion for TEN. The presence of oral, ocular, and/or genital mucositis is helpful diagnostically, as these findings are present in nearly all patients with TEN. The Nikolsky sign (a separation of the papillary dermis from the basal layer upon gentle lateral pressure) and the Asboe-Hansen sign (a lateral extension of bullae with pressure) are also helpful diagnostic signs found in patients with TEN [6].

Given the significant morbidity and mortality from TEN, as well as improvement in outcome from prompt treatment, there is significant interest in the discovery of serum biomarkers for early diagnosis of TEN. Serum granulysin and serum high-mobility group protein B1 (HMGB1) are among a few of the markers being investigated which have shown promise in early research [6].

In conclusions, the causes of TEN in our study were due to anti-inflammatory and carbamazepine, associated with antiretroviral medication. Both cases presented more than 30% of the skin involved and severe sepsis was the complication that caused the death of one of the patient [7-17].

Acknowledgements

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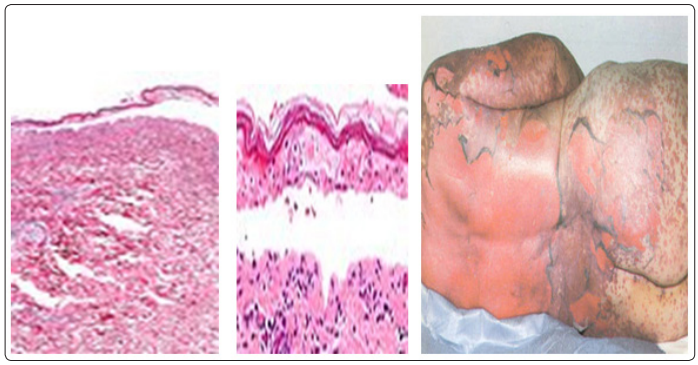
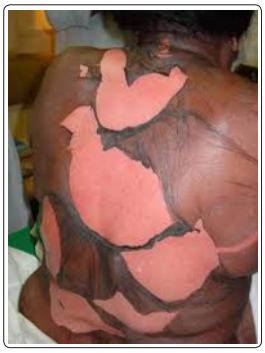
Gallery





References

1. Rapini Ronald P, Bolognia Jean L, Jorizzo Joseph L (2007) Dermatology: 2-Volume Set. St. Louis: Mosby.
2. Elizabeth Noble Ergen, Lauren C Hughey (2017) Stevens-Johnson syndrome/toxic epidermal necrolysis. JAMA Dermatol 153: 1344.
3. Adler NR, Aung AK, Ergen EN, Trubiano J, Goh MS, et al. (2017) "Recent advances in the understanding of severe cutaneous adverse reactions". The British Journal of Dermatology 177: 1234-1247.
4. Schwartz RA, McDonough PH, Lee BW (2013) "Toxic epidermal necrolysis: Part I. Introduction, history, classification, clinical features, systemic manifestations, etiology, and immunopathogenesis". Journal of the American Academy of Dermatology 69: 173.e1-173.e13.
5. Schwartz RA, McDonough PH, Lee BW (2013) "Toxic epidermal necrolysis: Part II. Prognosis, sequelae, diagnosis, differential diagnosis, prevention, and treatment". Journal of the American Academy of Dermatology. 69: 187.e1-187.e16.
6. Jordan MH, Lewis MS, Jeng JG, Rees JM (1991) "Treatment of toxic epidermal necrolysis by burn units: another market or another threat?" The Journal of burn care & rehabilitation 12: 579-581.
7. Roujeau JC, Stern RS (1994) "Severe adverse cutaneous reactions to drugs". The New England Journal of Medicine 331: 1272-1285.
8. Morales ME, Purdue GF, Verity SM, Arnoldo BD, Blomquist PH (2010) "Ophthalmic Manifestations of Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis and Relation to SCORTEN". American journal of ophthalmology 150: 505-510.e1.
9. Garra GP (2007) "Toxic Epidermal Necrolysis Archived 2007-12-27 at the Wayback Machine".
10. Maverakis Emanual, Wang Elizabeth A, Shinkai Kanade, Mahasirimongkol Surakameth, Margolis David J, et al. (2017) "Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis Standard Reporting and Evaluation Guidelines: Results of a National Institutes of Health Working Group". JAMA Dermatology 153: 587-592.
11. Hung SI, Chung WH, Jee SH, Chen WC, Chang YT, et al. (2006) "Genetic susceptibility to carbamazepine-induced cutaneous adverse drug reactions". Pharmacogenetics and genomics 16: 297-306.
12. McCormack M, Alfirevic A, Bourgeois S, Farrell JJ, Kasperavičiūtė D, et al. (2011) "HLA-A*3101 and carbamazepine-induced hypersensitivity reactions in Europeans". The New England Journal of Medicine 364: 1134-1143.
13. Tohkin M, Kaniwa N, Saito Y, Sugiyama E, Kurose K, et al. (2013) "A whole-genome association study of major determinants for allopurinol-related Stevens-Johnson syndrome and toxic epidermal necrolysis in Japanese patients". The pharmacogenomics journal 13: 60-69.
14. Zajicek R, Pintar D, Broz L, Suca H, Königova R (2012) "Toxic epidermal necrolysis and Stevens-Johnson syndrome at the Prague Burn Centre 1998-2008". Journal of the European Academy of Dermatology and Venereology: JEADV 26: 639-643.
15. Rajaratnam R, Mann C, Balasubramaniam P, Marsden JR, Taibjee SM, et al. (2010) "Toxic epidermal necrolysis: retrospective analysis of 21 consecutive cases managed at a tertiary centre". Clin Exp Dermatol 35: 853-862.
16. Majumdar Samit, Mockenhaupt Maja, Roujeau Jean-Claude, Townshend Askari P (2002) "Interventions for toxic epidermal necrolysis". Cochrane Database of Systematic Reviews. 4: CD001435.
17. Quinn AM, Brown K, Bonish BK, Curry J, Gordon KB, et al. (2005) "Uncovering histological criteria with prognostic significance in toxic epidermal necrolysis". Arch Dermatol 141: 683-687.