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AN ANALYSIS OF DRUG INDUCED TOXIC EPIDERMAL NECROLYSIS IN A TERTIARY CARE HOSPITAL OF ASSAM

Pharma

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KEYWORDS

TEN, drug induced TEN, Amoxicillin, high risk drugs

INTRODUCTION:

Toxic epidermal necrolysis (TEN) is a potentially life-threatening condition characterised by extensive exfoliation of the epidermis and mucous membrane which may eventually result in sepsis and death.[1]

TEN is a disease with uniform clinical characteristics and possess a potentially fatal outcome. TEN involves more than 30% of epidermal detachment, whereas Steven-Johnson syndrome (SJS) involves less than 10% epidermal detachment and dermal detachment between 10%–29% is diagnosed as SJS/TEN overlap.[2]

TEN can be caused by medications, infections, vaccines or may even be idiopathic. The most common cause amongst them is drugs. Medications that have been known to cause TEN includes antibiotics (sulfonamides, chloramphenicol, penicillin and quinolones), antiepileptics (barbiturate, carbamazepine, phenytoin, valproate, and lamotrigine), non-steroidal anti-inflammatory drugs (NSAID), especially oxybutazone and piroxicam, antiviral drugs (oseltamivir and abacavir) and allopurinol.[1]

According to the 2008 Euro-SCAR study, the drugs with high risk of TEN are lamotrigine, carbamazepine, phenytoin, nevirapine, phenobarbital, sulfonamide, allopurinol and oxicam.[1]

The correlation between drug intake and TEN is recognised usually when the disease develops within 1-3 weeks of drug intake.[3] The diagnosis of TEN is done based on clinical symptoms and histological features which initially include areas of erythematous macules on the skin. Mucosal and ocular involvement develops shortly before or simultaneously with skin signs in almost all cases.[4]

Ocular involvement can range from acute conjunctivitis, eyelid edema and erythema to more severe form like corneal ulceration.

After the acute stage, the common clinical symptoms include persistent epithelial defects, ulceration and perforation which develop into corneal cicatricial changes such as neovascularization, opacification, keratinization, and symblepharon. Even when the acute stage impairments subside, permanent visual impairment or blindness remains and conjunctival inflammation becomes chronic.[5]

Major metabolic disturbances including sepsis, multi organ failure and gastrointestinal haemorrhage might occur in advanced cases which is the cause for high mortality rate associated with TEN (30% of cases).[4]

Aim Of The Study:

To analyse cases of drug induced Toxic Epidermal Necrolysis in a tertiary care hospital of Assam

MATERIALS AND METHODOLOGY:

- Place of study: Department of Dermatology, Assam Medical College
- Hospital based, retrospective
- Duration of study: 3 months
- Case series study based on medical record of patients with TEN over last 1 year
- The clinical symptoms were used as diagnostic criteria to identify the cases with TEN

Exclusion criteria:

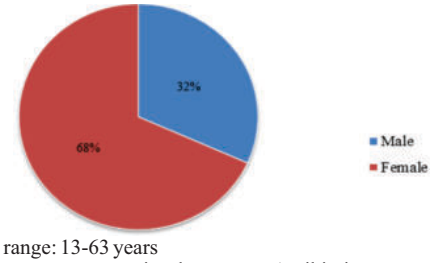
1. All the patients who came over more than a year ago
2. All the patients who had no previous significant history of drug use

- The data were analysed for the demographic profile, offending drugs, clinical characteristics, morphology of the ocular and skin lesions and laboratory profile.

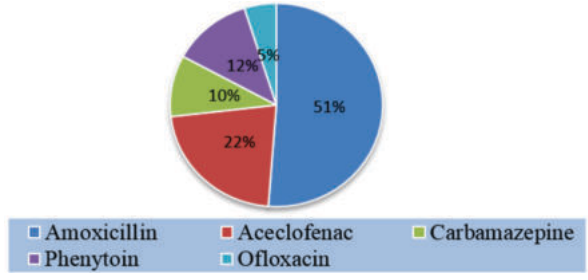
RESULTS:

- Total number of patients with TEN: 52
- Number of patients with significant previous history of drug use: 41
- Number of Males: 13

Number of Females: 28

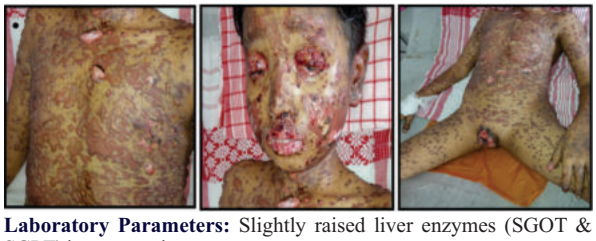


- Age range: 13-63 years
- Most common causative drug group: Antibiotics
- Most common drug amongst all: Amoxicillin



Morphological pattern of the disease:

- All the patients had sheet like erosion in more than 30% body surface. All the patients had mucosal as well as involvement of the eye.



Laboratory Parameters: Slightly raised liver enzymes (SGOT & SGPT) in some patients.

DISCUSSION:

In our study, it was seen that 41 out of 52 patients with Toxic Epidermal Necrolysis were diagnosed with drug induced TEN in the last one year. Out of 41, 28 were females and 13 were males and the age ranged from 13-63 years of age. Among the cases of drug induced TEN, the most common drug group was found to be Antibiotics. The most commonly involved drug was Amoxicillin (51%), aceclofenac (22%), phenytoin

(12%), carbamazepine (10%) and ofloxacin (5%). The diagnosis of drug induced TEN in this study was based on history of drug exposure with typical clinical manifestation of erythema, blistering and detachment of skin. The reactions were not confirmed by dechallenge or rechallenge testing.

Treatment of TEN is based mainly on supportive therapy. Early diagnosis and withdrawal of the causative agent is the key to management which improves the outcome of the disease.

In our study, Amoxicillin was found to be the most common drug causing drug induced TEN. The reasons for this could be easy availability of the drug as many times in the rural areas, the drug is easily available as over the counter drug. The other reason could be higher prescription of the drug by the doctors in the area.

CONCLUSION:

- There are many groups of drugs that can cause TEN. The mortality rates are also very high in these patients. Even for the drugs having the highest relative risk of SJS/TEN, the actual incidence/absolute risk still remains very low (1/1000-1/100,000).[6]
- One of the reasons for the lower rate of incidence in India could be due to the under reporting of the cases. All the suspected cases should be notified to the regulatory agencies and proper education should be given about the same to all the healthcare workers.
- However, there are no rationales for restrictions of these high risk drugs. Hence, awareness on proper use of these drugs by the physicians as well as proper monitoring of the patients while using these life threatening drugs will help in preventing the occurrence of the disease.

ABBREVIATIONS:

- TEN- Toxic epidermal Necrolysis
- SJS- Stevens Johnson Syndrome
- SGOT- Serum Glutamic Oxaloacetate Transaminase
- SGPT- Serum Glutamic Pyruvic Transaminase

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