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Case report

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### Crocin (acetaminophen) induced toxic epidermal necrosis: A rare case report Bushrah Anjum .B<sup>1\*</sup>, Roshan Jameel.B<sup>2</sup>, Javeed Baig.M<sup>1</sup>, Sravanthi.D<sup>1</sup>, Asif .SK<sup>1</sup>, Ganesh Reddy.V<sup>1</sup>, Venkata Subbaiah.M<sup>3</sup>.

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#### ABSTRACT

Acetaminophen is a mostly preferable drug for the treatment of analgesic and antipyretic. The main mechanism of action is acts on hypothalamus to produce antipyretic effect and act peripherally to block pain impulse generation, also inhibits prostaglandins synthesis in central nerve system. Toxic epidermal Necrosis (TEN) commonly termed as idiosyncratic reactions to drug. It is a serious and life threatening adverse drug reaction. Here, we report a case of TEN in a patient who developed the lesion after oral administration of CROCINE ACTIVE (ACETAMINOPHEN). These drugs have rarely been concerned in this disorder. The suspected drug in this case was ‘Crocin Active (500mg)’. The patient was managed with antibiotics, corticosteroids and parenteral fluids and topical saframycin. Almost all various drugs induced dermatological disorders toxic epidermal necrosis and Steven Johnson syndrome is a key role in terms of mortality. Promptly recognition of that condition, withhold the drug and immediately send to hospital then provide appropriate treatment its play a vital role for reducing mortality

**Keywords:** Crocin active (acetaminophen), Adverse drugs reaction, Toxic epidermal necrosis, Sever and life threatening.

#### INTRODUCTION

Stevens-Johnson syndrome (SJS) and toxic epidermal necrosis (TEN) are measured to be different clinical entities within a range of adverse cutaneous drug reactions, increased severity based on their surface of skin detachment, if less than 10% body surface area of skin detachment i.e called SJS and an usual reported mortality of 1 to 5%.TEN characterized by more than 30% skin detachment and reported mortality 25to 35%<sup>[1]</sup>. Toxaemia, it is responsible for

identified the toxic levels in blood. TEN is a potentially life-threatening dermatologic disorder this can be observed by physical symptoms like extensive erythema, bullous and necrosis detachment of the epidermis and mucous membranes, resulting in exfoliation and potentially sepsis and/or death. Mucous membrane involvement can also be leads to development of complications like respiratory failure, gastrointestinal hemorrhage, genitourinary and ocular abnormalities<sup>[2]</sup>. General symptoms of TEN and SJS

cannot be differentiated it may Include discomfort upon swallowing, fever and stinging eyes. Characteristically, these symptoms continuously manifested by a few days. Early sites of cutaneous association are the presternal region of the face and the Trunk, palms and soles. Erythema and erosions Involvement in the buccal, ocular mucosa and/or genital occurs in more than 90% of patients, and in some cases the respiratory and gastrointestinal [3]. Acetaminophen is an N-acetyl -p-aminophenol. It inhibits the synthesis of prostaglandins by directly act on CNS, but lacks anti-inflammatory effects in periphery. It reduces fever through direct action on hypothalamic heat-regulating centre. Most common ADRs occurs due to the usage of acetaminophen are Hemolytic anemia; neutropenia, leukopenia, pancytopenia, thrombocytopenia, Jaundice, Hypoglycemia, allergic skin eruptions or fever. In that we are reporting ADR is toxic epidermal necrosis that is developed due to hyper sensitivity to particular drugs. Most common symptoms develop hyperpigmented skin all over the body, peeling of skin without pain [4].

### CASE REPORT

A 14 years old male patient was admitted in dermatology ward with chief complaints of hyper pigmentation, fluid filled lesions all over the body and no oral lesions but unable to open his mouth. Patients past medical history includes fever since 3 days not associated with chills and rigors, He was taken OTC medications (crocin active 500mg) for reliving above symptoms for 2 days. On

dermatological examination 3-10 centimetres of blisters all over the body, spontaneously peeling of the skin on applying light pressure and also erosions over the scrotal area, extending at peons scrotal junction with mild scaling. On general examination Patient was conscious and coherent, on physical examination blood pressure 100/60 mm of Hg, pulse rate 84 bpm, respiratory rate 14 cycles per minute. On laboratory examination Hb-10.8 mg/dl, WBCS - 8100 cells/mm<sup>3</sup>, Differential counts: Neutrophils 66%, Lymphocytes 2%, Eosinophils 0.8 %, Monocytes 1%, Basophils 0%, and platelets 1.5 lakhs/mm<sup>3</sup>, RBC's 1-2 million/mm<sup>3</sup>, pus cells 1-2 cells, epithelial cells 1-2 cells/hpf ,bacteria (+) and positive C - reactive protein of 169 mg/dl. Based on subjective and objective evaluation patient was diagnosed with toxic epidermal necrosis (TEN) ( if <30% of body affected i.e Stevens johnsons syndrome and 70% of body affected i.e called toxic epidermal necrosis) based on that dechallenged (stop) was done. Patient was admitted with acetaminophen induced toxic epidermal necrosis(fig: 1) treated with intravenous glucocorticoid ( Dexamethasone sodium) 80mg two times in a day, intravenous electrolytes like Ringer Lactate and Normal Saline two times in a day, oral Anti-ulcerative medications ( pantaprazole 40mg) Once in a Day, oral Antibiotic (cefexime 200mg) two times in a day, oral Anti-histaminic (chlor pheneramine malate 4mg) Once in day, Topically Anti-microbial ointment soframycin 0.1% w/v three times in a day. This case of reaction showed in figure-1





**Fig: 1 Crocin induced toxic epidermal necrosis**

**ADR ANALYSIS**

After collecting past and current medication history from the patient it was suspected that the patient had developed drug induced toxic epidermal necrosis. After analyzing the ADR profile of acetaminophen drug, it was observed that the drug (acetaminophen) produces toxic epidermal necrosis.

We have further analysed to establish the relationship between the drug and the observed ADRs, through causality assessment by using scales like Naranjo’s scale, WHO scale and Karch and lasagne scale (Table-1). Modified hart wig and Siegel severity assessment scale and Schumock and Thornton preventability scale and predictability scales [5]. (Table-2)

**Table-1: ADRs Assessment Scales**

| Suspected drug and reaction                    | Naranjo’s scale | WHO scale | Karch and lasagne scale |
|------------------------------------------------|-----------------|-----------|-------------------------|
| Crocin Active induced toxic epidermal necrosis | Probable        | probable  | Probable                |

**Table -2: Analysis of ADRs**

| ADR scale  | Severity scale<br>(Modified hart wig and siegel scale ) | predictability scales | Preventability scale<br>(Schumock and thornton) |
|------------|---------------------------------------------------------|-----------------------|-------------------------------------------------|
| Assessment | Sever (Level-4)                                         | Predictable (Type B)  | Section B (probably preventable)                |

**MANAGEMENT OF ADR**

Generally, management of ADR includes withdrawal/suspension, dose reduction of suspected drug and administration of supportive therapy. Hear the suspected drug was withdrawn from the prescription.

Crocin active is a most commonly prescribing brand of acetaminophen; it is an N-acetyl –p-aminophenol. It inhibits the synthesis of prostaglandins by directly act on CNS. Its onset of action 1hr, half-life 1.25-3 hrs, metabolised in liver through the glucuronic /sulfuronic conjugation. Common ADRs are angioedema, disorientation, dizziness, pruritic maculopapular resh, Steven Johnson syndrome, toxic epidermal necrosis etc. This is a rare case of drug – induced TEN and it was an enthusiastic presentation,

**DISCUSSION**

which occurred after the drug was administered, TEN was diagnosed based on typical clinical features and the history. The reaction was appeared short time usually 1-3 days. A 14yrs male patient admitted in dermatology department for the complaints of Hyper pigmentation, fluid filled lesions all over the body and no oral lesions but unable to open his mouth. Patients past medical history includes fever since 3 days not associated with chills and rigors, He was taken OTC medications (Crocine active 500mg) for reliving above symptoms for 2 days. On laboratory examination WBCS -8100 cells/mm<sup>3</sup> is slightly increased pus cells 1-2 cells, epithelial cells 1-2 cells/hpf ,bacteria (+) and positive C - reactive protein of 169 mg/dl were observed . It is a rare and serious adverse drug reaction was collected and published. The mortality rate varies from 20% to 45%. Previously concerned studies and case reports are published different types of drug induced (drugs like antibiotics, NSAIDs, antifungal class of drugs) TEN [6,7].

## CONCLUSION

The risk of developing toxic epidermal necrosis adverse a reaction associated with acetaminophen is a

## REFERANCES

- [1]. Lars E French; Toxic epidermal necrolysis and stevens johnson syndrome: our current understanding. *allergology international*, 2006; 55:9-16.
- [2]. Jean clauder R, Judeth P, Kelly et al; medication use and the risk of stevens-johnson syndrome or toxic epidermal necrolysis . *New Engl Jou of Med*, 1995 ;333 : 1600-1607.
- [3]. Alan D Widgerow; Toxic epidermal necrolysis - management issues and treatment options. *Int J Burn Trauma*, 2011; 1(1):42-50.
- [4]. Accessed from: [www.medscape.com](http://www.medscape.com) on 27/11/15.
- [5]. Accessed from: [https://books.google.co.in/books/about/A\\_Text\\_Book\\_of\\_Clinical\\_Pharmacy\\_Practic.html?id=FGDQZaqk9IYC](https://books.google.co.in/books/about/A_Text_Book_of_Clinical_Pharmacy_Practic.html?id=FGDQZaqk9IYC).
- [6]. N.ajay kumar, M.SHANTHI, Navajothi; toxic epidermal necrolysis due to aceclofenac. *int j pharm bio sci*, 2013; 4(1): 430 – 433.
- [7]. Dr. C. k. Yeung. Toxic epidermal necrolysis and stevens-johnson syndrome. *Review articles*, 2002; 10(2): 57-61.

serious and life threatening ADR, so it should be closely monitored during therapy. As it is a serious ADR it should be provided with an alternative therapy or else it may lead to life threatening. The association of TEN due to usage of crocin active, so. Physician responsible to closely monitor the patient condition, hold the drug and better to provide symptomatic therapy. Since our explanation and based on only case report the conventional usage of drug is further emphasized on the need of test drug administration even for common drugs.

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## CONFLICT OF INTERESTS

The authors have declared that they have no conflict of interest.

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