

Case Study

**Drug Induced Stevens Johnson syndrome (SJS)**

Pinky Sharma, ShalluYadav, Ranjeet Kumar*

Department of Pharmacy Practice, NIMS Institute of Pharmacy, NIMS University, Jaipur, Rajasthan.

***Corresponding author:** Ranjeet Kumar. Associate Professor, Department of Pharmacy Practice, NIMS Institute of Pharmacy, NIMS University, Jaipur, Rajasthan.

ABSTRACT

Stevens Johnson syndrome (SJS), or toxic epidermal necrolysis (TEN) are rare cutaneous, severe condition, characterized by high fever, blisters on skin, facial swelling, and hyper pigmentation. This is a life-threatening drug induced hypersensitivity reaction marked by widespread inflammation of the epidermis ending in necrosis and eventual sloughing of the tissue. It is an acute, self-limited disease, presenting as severe mucosal erosions with widespread erythematous, cutaneous macules or atypical targets. Majority of the SJS cases are drug-induced despite its varied etiology. A 6 year old male child who reported us with chief complaints of skin rashes over the body with burning eyes and difficulty in swallowing associated with pain. The rashes appeared after consumption of tablet Paracetamol+Diclofenac and Cefixime orally by consulting a local clinic. This case reports that concerned drugs may cause severe hypersensitivity reaction which can even be hemorrhagic in nature. This can lead to fatal condition. For this reason a physician should be very careful while prescribing and should provide a drug reaction card mentioning the suspected drugs in the patient which the patient should carry with them for further follow up. The main loophole can be fulfilled by appointing a clinical pharmacist to intervene such issues in the near future and educate the mass regarding the adverse effects of the respective drugs prescribed to increase awareness and medication adherence.

INTRODUCTION

Stevens Johnson syndrome (SJS), or toxic epidermal necrolysis (TEN) are rare cutaneous, severe condition, characterized by high fever, blisters on skin, facial swelling, and hyper pigmentation.¹This is a life-threatening drug induced hypersensitivity reaction marked by widespread inflammation of the epidermis ending in necrosis and eventual sloughing of the tissue.²Historically, SJS was first described in 1922 by two American physicians named Stevens and Johnson. They described an acute mucocutaneous syndrome in two young boys characterized by severe purulent conjunctivitis, severe stomatitis with extensive

mucosal necrosis. TEN, also called Lyell's syndrome was first described by the Scottish dermatologist Alan Lyell in 1956. He reported four patients with an 'eruption resembling scalding of the skin objectively and subjectively', which he called toxic epidermal necrolysis or TEN.³SJS is a severe hypersensitivity reaction that can be precipitated by infection, vaccination, systemic diseases, physical agents, food and drugs.

SJS was classically related to a medication hypersensitivity reaction; however, infectious etiologies are increasingly recognized as inciting agents. The common pathogens are

Mycoplasmapneumoniae, Enterovirus, hepatitis B virus, *Yersinia enterocolitica*, Epstein–Barr virus, group A streptococcus, and *Mycobacterium tuberculosis*.⁴

SJS presents in three different forms which reflect the same condition: a mild form, called erythema multiforme (where <10% TBSA is affected), the main form (Overlapping Stevens-Johnson syndrome/toxic epidermal necrolysis-detachment of 10-30% of body surface area), and the severe form, called toxic epidermal necrolysis (TEN) more than 30% of the BSA.⁵

Several drugs are at “high” risk of inducing TEN/SJS including:⁶

1. Analgesics : Tramadol, cocaine
2. Anti-epileptics: Phenytoin, Carbamazepine, Valproic acid, Lamotrigine, Mirtazapine, Phenobarbital.
3. Anti-gout :Allopurinol
4. Anti-retroviral drugs :Niverapine, Indinavir.
5. NSAIDs: Meloxicam, Piroxicam, Tenoxicam, diclofenac, Indomethacin, Sulindac.
6. Antibiotics :
Cephalosporins :Cefaclor,cefapirin, cefixime, cefalexin, cefatrizine, cefpodoxime, ceftriaxone and cefuroxime.
Aminopencillins : amoxicillin and bacampicillin.
Macrolide : azithromycin, clarithromycin, roxithromycin, erythromycin and spiramycin.
Tetracyclins :Minicycline, doxycycline, and metacycline.
Quinolones: ciprofloxacin, levofloxacin, norfloxacin, ofloxacin and grepafloxacin.
Among NSAIDs, paracetamol was the most common cause of skin reaction in Indian study .In 2014, the Food and Drug Administration (FDA) neededthe

acetaminophen manufacturers to include the Stevens-Johnson syndrome as a risk warning in the package.⁷

CASE PRESENTATION

A 6 year old male child who was presented to paediatric department with chief complaints of skin rashes over the body with burning eyes and difficulty in swallowing associated with pain since 4 days before arrival to the department. His Father revealed that he had a history of fever with cough prior to rashes for which he taken Paracetamol+Diclofenac and Cefixime orally by consulting a local clinic. After taking the prescribed medications the patient had developed few symptoms that included: skin lesion all over face, blister over lips which were haemorrhagic in appearance, eyelashes and lips sticked. History of present illness revealed that the patient had eye redness and skinpurpura and macular rash over face,leg and palm.

Intra oral examination of the patient revealed that the patient had ulceration in his buccal cavity. Laboratory investigations were drawn which was normal. The patient was subjected to just haematological examination as the purpura was acute and was causing discomfort. Based on the subjective and the objective evidences, the patient was diagnosed to have Steven Johnson’s Syndrome.

PHARMACIST INTERVENTION

We hope that this case report create awareness to the health care professionals that concerned drugs will cause SJS.

- Drug allergy should be documented in the patient's case sheet and the discharge ticket very legibly, preferably in red ink.
- The patient or his/her attendant should be given written information about drug(s) to avoid.

- They should be issued a drug reaction card mentioning the suspected drug(s) and encouraged to carry this card in their pocket all the time and show it to the clinician every time they fall ill.
- The patient should also be advised to seek appropriate consultations for the management of complications resulting from SJS/TEN, particularly ophthalmological complications.
- Strict avoidance of offending/suspected/related drug(s) is absolutely necessary. A drug card should be issued to facilitate this.



DISCUSSION

SJS is a delayed hypersensitivity inflammatory adverse drug reaction which is mainly caused by drugs like sulfonamides and antibiotics. The recent studies have reported SJS is also caused by drugs like NSAIDs, anti-convulsants and anti-retroviral drugs.¹ From these case it was found that Paracetamol+Diclofenac and Cefixime is also found to cause Stevens Johnson Syndrome. Shetty *et al.* reported a 45-year-old female patient that after dental operation and diclofenac usage as analgesic drugs developed SJS. Also, Lin TK *et al.* reported a 78-year-old man who admitted due to a widespread skin eruption after taking NSAIDs drugs (diclofenac, naproxen). In the last case, Wiwanitkit V presented a diclofenac-related skin rash in a 52 years old female patient.⁸

Conclusion

This case reports that concerned drugs may cause severe hypersensitivity reaction which can even be hemorrhagic in nature. This can lead to fatal condition. For this reason a physician should be very careful while prescribing and should provide a drug reaction card mentioning the suspected drugs in the patient which the patient should carry with them for further follow up. The main loophole can be fulfilled by appointing a clinical pharmacist to intervene such issues in the near future and educate the mass regarding the adverse effects of the respective drugs prescribed to increase awareness and medication adherence.

CONSENT

Written consent has been provided by the patient for the publication of this case report and any accompanying image.

Conflicts of Interest:

The authors declare that they have no conflicts of interest.

REFERENCES

1. Chandra J, Mathew J, Kurian D, Kiran K, Mathew B, Ashok Kumar TR. A case report on ofloxacin induced Steven - Johnson syndrome (SJS). *Int J Pharm Sci Rev Res.* 2015;33(2):187-188. doi:10.14419/ijsw.v3il.3432
2. Vasu A, Rao D, Khan I, et al. IJBCP International Journal of Basic & Clinical Pharmacology Case Report A case series of cefixime induced Steven ' s Johnson Syndrome. 2018;7(8):1648-1653.

3. Muci M, Kuneshka N. Stevens-Johnson syndrome: Case report. *Paediatr Croat.* 2013;57(3):268-270. doi:10.5933/jkapd.2017.44.4.455
4. Sah R, Neupane S, Khadka S, et al. A Case Study of Stevens–Johnson Syndrome-Toxic Epidermal Necrolysis (SJS-TEN) Overlap in Mycoplasma pneumoniae -Associated Tracheobronchitis . *Case Rep Infect Dis.* 2019;2019:1-5. doi:10.1155/2019/5471765
5. Lihite RJ, Lahkar M, Borah A, Hazarika D, Singh S. A study on drug induced stevens-johnson syndrome (SJS), toxic epidermal necrolysis (TEN) and SJS-TEN overlap in a tertiary care hospital of Northeast India. *J Young Pharm.* 2016;8(2):149-153. doi:10.5530/jyp.2016.2.18
6. Sartaj S, Swamy A, Sartaj S, Syndrome SS. Study of Stevens - Johnson syndrome. *Int J Adv Sci Res Eng.* 2018;4(1):118-128. doi:10.7324/ijasre.2018.32597
7. Lebrun-Vignes B, Guy C, Jean-Pastor MJ, Gras-Champel V, Zenut M. Is acetaminophen associated with a risk of Stevens–Johnson syndrome and toxic epidermal necrolysis? Analysis of the French Pharmacovigilance Database. *Br J Clin Pharmacol.* 2018;84(2):331-338. doi:10.1111/bcp.13445
8. Babamahmoodi F, Eslami G. Diclofenac-Induced Stevens-Johnson Syndrome : A Case Report. 2012;11(1):33-35.

Received: 19Feb, 2021, Decision for Acceptance: 26 Mar, 2021

Cite this article

Pinky Sharma, ShaluYadav, Ranjeet Kumar. Drug Induced Stevens Johnson syndrome (SJS), Indian Journal of Healthcare, Medical & Pharmacy Practice. 2021; 2(2):20-23.