

**A CASE REPORT: DRUG-INDUCED STEVENS-JOHNSON SYNDROME-TOXIC
EPIDERMAL NECROLYSIS OVERLAP****Rachana D. Rathavi^{*1}, Alpa P. Gor²**¹3rd Year Postgraduate Resident, Department of Pharmacology, Pramukhswami Medical College, Karamsad, Anand-388325, Gujarat, India.²Professor and Head, Department of Pharmacology, Pramukhswami Medical College, Karamsad, Anand-388325, Gujarat, India.***Corresponding Author: Dr. Rachana D. Rathavi**3rd Year Postgraduate Resident, Department of Pharmacology, Pramukhswami Medical College, Karamsad, Anand-388325, Gujarat, India.DOI: <https://doi.org/10.5281/zenodo.18430492>**How to cite this Article:** Rachana D. Rathavi^{*1}, Alpa P. Gor². (2026). A Case Report: Drug-Induced Stevens-Johnson Syndrome-Toxic Epidermal Necrolysis Overlap. World Journal of Pharmaceutical and Medical Research, 12(2), 253–256. This work is licensed under Creative Commons Attribution 4.0 International license.

Article Received on 27/12/2025

Article Revised on 17/01/2026

Article Published on 01/02/2026

ABSTRACT

Background: Itraconazole, a triazole antifungal, inhibits ergosterol synthesis in fungal cell membranes, with its active metabolite hydroxyitraconazole enhancing its efficacy. Cefadroxil, a first-generation cephalosporin, is commonly used for treating respiratory, urinary, skin, and soft tissue infections, owing to its good oral bioavailability and efficacy against Gram-positive and selected Gram-negative organisms. While both drugs are generally well-tolerated, rare but serious adverse skin reactions such as Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis (SJS-TEN) have been reported. **Case History:** A 37-year-old male who developed multiple fluid-filled and erythematous lesions across various body regions, associated with burning and pain. Symptoms emerged seven days after initiating itraconazole and cefadroxil for skin lesions prescribed by a private practitioner. Clinical findings suggested a drug-induced hypersensitivity reaction. Both drugs were discontinued, and the patient was hospitalized. A diagnosis of SJS-TEN overlap was established based on the extent and severity of skin involvement. Management included systemic corticosteroids, cyclosporine, and supportive topical care. The patient responded well to treatment and was discharged in stable condition. **Conclusion:** This case highlights the potential for itraconazole and cefadroxil to cause severe cutaneous adverse reactions, emphasizing the need for early recognition and immediate discontinuation of suspected agents. Awareness of such rare yet life-threatening events is crucial for clinicians to ensure prompt intervention, improving patient outcomes and medication safety.

KEYWORDS: Steven-Johnson syndrome (SJS), Toxic Epidermal Necrolysis (TEN), Itraconazole, Cefadroxil.**INTRODUCTION**

The cephalosporins are derived from the fungus *Cephalosporium acremonium*, and they were initially discovered in 1945 by Italian scientist Giuseppe Brotzu in Sardinia. They are distinguished by their bactericidal properties, exhibiting effectiveness against Gram-positive and Gram-negative bacteria. Among five generations of cephalosporins, Cefadroxil, classified as a first-generation cephalosporin, exhibits efficacy against both Gram-positive and Gram-negative bacteria. They are commonly prescribed for conditions such as bronchitis, tonsillitis, infections in the skin, soft tissues and joints. ^[1] Cefadroxil is typically regarded as safe and is usually well accepted. Common side effects of

cefadroxil are mild gastrointestinal disturbances and hypersensitivity reactions such as rash and urticaria. ^[2] Itraconazole is a triazole antifungal medication known for its broad-spectrum efficacy; it has a metabolite called hydroxyitraconazole that is active. Itraconazole functions as an inhibitor of ergosterol synthesis, a process that is critical for maintaining the structural integrity of fungal cell membranes. Although itraconazole is generally considered a safe medication, it is important to recognize that there are potential adverse side effects associated with its use. The most frequent side effects include gastrointestinal issues like nausea, mild diarrhoea, vomiting, and abdominal pain. Cardiotoxicity is a rare adverse effect. Another potential adverse effect is

hepatotoxicity, which is frequently reversible.^[3] The adverse drug reactions (ADRs) are submitted to the Pharmacovigilance Program of India (PvPI) could enhance scientific knowledge and increase healthcare professionals' awareness of possible harmful side effects. The Pharmacology Department at Pramukh Swami Medical College in Karamsad operates as one of the ADR Monitoring Centres (AMC).^[4] It gathers ADRs as well as case reports and series to inform the public about the uncommon side effects of such drugs.

CASE REPORT

A 37-year-old male patient came to the Dermatology Department at Shree Krishna Hospital on 22/03/2025 with chief complaints of multiple fluid filled lesions over abdomen, back, genitals, both buttocks and both lower limbs since last 2 days (from 20/03/2025) and multiple reddish elevated lesions over the neck, face, chest, back, abdomen, as well as on the upper and lower limbs with pain and burning sensation over lesions since last 7 days (from 15/03/2025). Patient gave history of taking Cap. Itraconazole 100 mg twice in a day and Tab. Cefadroxil

500 mg twice in a day for reddish elevated lesions which were prescribed from private practitioner before 7 days (On 15/03/2025). Dermatologist was suspecting a drug reaction due to the history of Itraconazole and Cefadroxil intake, so stopped these both drugs and the patient was admitted in dermatology ward. On examination patient's vitals were as follows: Temperature: 98.4 F, Pulse: 82/minute, Blood Pressure: 142/110 mmHg, Respiratory Rate: 18 /minute, SpO2 98% on Room Air, No signs of pallor, cyanosis, lymphadenopathy, icterus, oedema and clubbing present. Multiple clear fluid-filled vesicles to bullae of size approximately 1x2cm to 3x4 cm present over the abdomen, back, bilateral groins, buttocks and lower limbs. Numerous erythematous papules and plaques measuring around 1x1 cm to 3x4 cm exhibit central black crusting on the face, neck, abdomen, chest, back, bilateral groins, buttocks, and both upper and lower limbs. Few (5-6) erosions of size approximately 1x2 cm to 3x4 cm present over abdomen, back, bilateral groins, buttocks and lower limbs. [FIGURE 1: Skin lesions of SJS-TEN Overlap over abdomen, groin and lower limbs]



Figure 1: Skin lesions of SJS-TEN Overlap over abdomen, groin and lower limbs.

On genital examination few (1-2) erythematous plaques of size approximately 1x1 cm to 1x2 cm were present over the shaft of the penis and scrotum. Few (1-2) erosions of size approximately 1x1 cm to 1x2 cm on the shaft of penis and scrotum. The pseudo-Nikolsky sign was positive over the abdomen. Oral cavity, hair, and nails were normal. On admission Haemoglobin was 13.4 g/dl, Total leucocyte count was 9500/ μ L, Differential Leucocyte count (N/L/E/M/B) was 53/28/16/03/00. Platelet count was 261000/ μ L. Serum Glucose was 259 mg/dl, Serum Sodium levels were measured at 131 mEq/L, Serum Potassium levels were recorded at 4.0 mEq/L, and Serum Urea levels were found to be 28 mg/dl. Serum Bicarbonate was 32.8 mEq/L, Liver Function Test (Serum Bilirubin total, Direct Bilirubin, Indirect Bilirubin, Total Serum Protein, Albumin, Globulin, A/G Ratio, SGOT, and SGPT) remained within the normal range. CRP was 13.4 mg/L, HBA1c was 10.5. Lipid profile was S. Cholesterol-218 mg/dl, Triglyceride-649 mg/dl, HDL-42 mg/dl, LDL-87 mg/dl, VLDL-129.8 mg/dl, TC/HDL-5.19 and LDL/HDL-2.07.

According to the SCORTEN scoring system, with a score of 1, the estimated mortality risk is 3%. Histopathology of a punch biopsy done from a lesion over left flank showed near total epidermal necrosis and focal apoptotic keratinocyte with an inflammatory infiltrate of eosinophils and lymphocytes. The dermis showed perivascular inflammatory infiltrate comprising eosinophils and lymphocytes. Unremarkable sweat glands were seen. The results aligned with the clinical diagnosis of overlap between Stevens-Johnson syndrome and toxic epidermal necrolysis.

The dermatologist suspected a potential drug reaction. Given the patient's detailed medical history involving the administration of Itraconazole, an antifungal medication, and Cefadroxil, a type of antibiotic, the decision was made to discontinue both drugs. Subsequently, the patient was admitted for specialized care to the dermatology ward on the 22nd of March, 2025, for further evaluation and treatment of their condition. The dermatologist identified the condition as a Stevens-

Johnson Syndrome and Toxic Epidermal Necrolysis overlap (SJS-TEN overlap). During hospital stay, he was treated with injection Dexamethasone 2 cc IV and continued with subsequent tapering dose for a total of 13 days, Inj. Pheniramine and other symptomatic treatments were given. The patient was prescribed Cap. Cyclosporin 100 mg twice daily for 7 days. Tablet Linezolid 600 mg tablets two times in a day for a week. Topical Betamethasone cream, Zad-G (Sulphadiazine and zinc sulphate) cream, Terbinafine cream, Ciclopirox olamine cream, Soframycin cream, Mupirocin ointment, Vaseline petroleum jelly, Gentian violet lotion, Paraffin gauze dressing and Liquid Paraffin were applied locally twice times a day on lesions. For a newly diagnosed diabetic and an altered lipid profile patient was managed accordingly. Patient improved symptomatically. Skin lesions healed significantly, burning sensation reduced. Repeat investigations were improved and the patient was discharged with stable hemodynamic on 03/04/2025.

CAUSALITY ASSESSMENT

WHO Assessment Scale^[5]: POSSIBLE

The event has an acceptable temporal correlation with the administration of the drug. Cefadroxil is known to cause Stevens-Johnson syndrome (SJS).

Another given drug, Itraconazole, can also cause SJS.

The response to the withdrawal of the medication was clinically justified.

Based on the patient's medication history, the details of the presenting illness, and the relevant laboratory parameters, the adverse drug reaction (ADR) can be directly attributed to the administration of tablet cefadroxil and capsule itraconazole.

Naranjo's algorithm^[6]: Total score was 4 (1-4 being Possible).

Hartwig and Siegel ADR severity assessment scale^[7]: Severe ADR (ADR level 7).

DISCUSSION

Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are serious cutaneous adverse reactions (SCAR) are mainly caused by medications. These conditions are marked by significant tissue damage and separation of the outer skin layer, leading to significant clinical complications. SJS is characterized by a prominent macular rash and painful blistering. It also presents with fever, purulent conjunctivitis, and stomatitis, highlighting the urgent need for medical intervention. TEN, which is also referred to as Lyell's syndrome, is a severe and potentially hazardous condition. While Stevens-Johnson Syndrome (SJS) has a mortality rate of 5% to 10%, TEN's mortality rate can be as high as 30% to 40%. Bastuji-Garin et al. established criteria for diagnosing Stevens-Johnson Syndrome and Toxic Epidermal Necrolysis, classifying patients into

three categories based on skin detachment. SJS affects less than 10% of the total body surface area (TBSA), while SJS-TEN overlap comprises 10% to 30% of the TBSA, and TEN is defined by involvement of more than 30% of the TBSA.^[8,9] An average of 25 to 35 deaths is reported from rapid keratinocyte cell death through apoptosis, which separates the epidermis from the dermis. This morphological characteristic is shared by both SJS and TEN.^[10] In 2020, the one case of SJS-TEN overlap induced by Itraconazole was reported in a 16-year-old girl who was prescribed oral itraconazole for onychomycosis. On the third day of therapy, she developed numerous erythematous to purpuric macules that aggregated to form patches, distributed across the facial region, upper limbs, chest, abdomen and back.^[11]

In 2024, one case of TEN induced by cefadroxil was reported in an eighteen-year-old female patient who was prescribed cefadroxil for throat pain and abdominal pain. After having taken one tablet of it, numerous purpuras and petechiae appeared on both upper limbs and lower limbs, the abdomen, chest, trunk, neck, and face. Several flaccid bullae were observed on both forearms and the trunk. Additionally, a few lesions were noted on the hard palate in the oral cavity.^[12]

CONCLUSION

We report a case of SJS-TEN overlaps associated with itraconazole and cefadroxil, underscoring that even widely used antifungal and antibiotic agents can rarely precipitate life-threatening cutaneous adverse drug reactions. Early identification, discontinuation of suspected agents, and aggressive supportive care remain the cornerstones of management and likely contributed to this patient's favourable outcome. Clinicians should maintain a high index of suspicion for SJS/TEN when mucocutaneous symptoms appear after drug exposure and avoid re-exposure to the implicated agents. Documentation and submission of such events to adverse-drug-reaction monitoring centres will help refine risk profiles and guide safer prescribing.

CONFLICT OF INTEREST

No conflict of interest.

ETHICS STATEMENTS

Institutional Ethics Committee's approval was obtained for publication.

ACKNOWLEDGEMENTS

We extend our heartfelt gratitude to the Dermatology department at Pramukhswami Medical College and Shree Krishna Hospital in Karamsad, which deserves recognition for bringing this case to our department's attention.

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