

Ibuprofen Unveiled: A Middle-Aged Odyssey through Stevens-Johnson Syndrome

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Clinical key message

Ibuprofen, a common NSAID, may unravel unexpected dangers like Stevens-Johnson Syndrome. This case underscores the urgency of recognizing adverse drug reactions, urging vigilance in both healthcare and public spheres for safer medication practices. **Introduction:** Ibuprofen, a widely used nonsteroidal anti-inflammatory drug (NSAID), has long been a stalwart in the realm of pain relief and inflammation management. However, behind its commonplace presence in medicine cabinets, there lies a potential peril that, though rare, demands our attention and understanding. This narrative unfolds as a middle-aged individual embarks on an unexpected journey through the harrowing landscape of Stevens-Johnson Syndrome (SJS) – a severe and, at times, life-threatening skin disorder (1,2). As the story begins, it beckons us to consider the seemingly innocuous act of reaching for an over-the-counter pain reliever. In this case, ibuprofen serves as

the unwitting protagonist, a common choice for those grappling with the discomforts of everyday ailments (3). The unsuspecting middle-aged protagonist, seeking respite from a routine headache or muscular ache, unwittingly triggers a chain of events that will unfold into a rare and alarming medical ordeal (4). Stevens-Johnson Syndrome, characterized by the abrupt onset of a painful rash and blistering, often involves the mucous membranes, including the eyes, nose, and mouth. It can be triggered by various medications, and ibuprofen, despite its ubiquity and perceived safety, is not exempt from this list (5). The narrative explores the unfolding symptoms, the perplexing escalation from mild discomfort to severe skin involvement, and the subsequent medical odyssey that ensues (5). This exploration delves into the broader implications of drug safety, shedding light on the delicate balance between the benefits and risks of widely used medications. It underscores the importance of vigilance, both on the part of healthcare providers and the public, in recognizing potential adverse reactions (6). Through this journey, we navigate the intricacies of drug-induced skin disorders and the critical role of prompt medical intervention in steering the narrative towards recovery (7). "Ibuprofen Unveiled" invites readers to contemplate the uncharted territories that can emerge from seemingly routine decisions and prompts a reconsideration of our relationship with common medications that weave seamlessly into the fabric of our daily lives. **Keywords** Acute medicine, Dermatology, Immunology, Critical care medicine, pharmacology and pharmacy.

Case presentation

A middle-aged female presented to the emergency room with a sudden onset of severe facial swelling, red painful eyes with discharge, crusting and erosion of lips, and a generalized non-blanching purpuric rash, predominantly on the chest, upper, and lower limbs. Upon thorough history-taking, it was revealed that she had taken ibuprofen for flu-like symptoms three days prior. She had no past medical history of chronic diseases and was not taking any medications. She is a non-smoker and non-drinker. During examination, the patient, an average-built female, appeared in distress but was fully conscious, oriented to time, place, and person. Cardiac, respiratory, and neurological examinations were unremarkable. Her vital signs were as follows: BP 133/88 mmHg, RR 22, SpO2 95%, HR 88 bpm, and a temperature of 38.4°C. Head, neck, and eye examination revealed conjunctivitis with discharge, coalescing deep red erythematous targeted macules with central blister formation on the face, and swelling, erosion, and yellowish discharge of the lips (cheilitis) as depicted in figure 1.



figure 1.conjunctivitis with discharge. Coalescing red erythematous macules with central blister formation in the face. Chelitis and yellowish discharge. Musculoskeletal examination showed a non-blanching purpuric rash with target lesions on the chest, as well as both upper and lower limbs, illustrated in figure 2.. Figure 2.Non blenching purpuric rash with target lesions in lower and upper limbs. Blood samples were collected for a complete blood count, renal and liver function tests, and serum electrolytes (see table 1).

Test	Results	Units	Normal value
Hb	11.2	g/dl	12-14
Wbc	15.9	10^{10} /l	4-10
Plt	155	10^{10} /l	150-400
B. Urea	56	mg/dl	15-40
S. Creatinine	1.3	mg/dl	0.6-1.2
ALT	50	U/L	10-130
AST	15	U/L	10-34
T. Bilirubin	0.4	mg/dl	0-0.8
S. Albumin	3.2	g/dl	2.4-4
PT	10.2	Seconds	9.5-12.5
INR	1.4		1-2

Sodium	139	mmol/l	135-145
Potassium	3.8	mmol/dl	3.5-5
Chloride	101	mmol/dl	96-106

Table 1. Blood tests showing anaemia, leucocytosis and mild renal impairment. A comprehensive review of history and examination raised a high suspicion of Steven Johnson syndrome. The patient was subsequently admitted to the Intensive Care Unit for strict management under aseptic conditions. Treatment included intravenous fluids, prophylactic antibiotics, lubricating eye drops, and dexamethasone 8mg IV once daily. After seven days of admission, the patient's condition improved, and she was discharged for regular follow-up with a dermatologist and immunologist. Facial and mucocutaneous rash and ulcers decreased, as observed in figure 3.



figure3. Decrease in size and colour of facial rash with minimal ulcers. Normal lips appearance

Discussion: Ibuprofen, a widely used nonsteroidal anti-inflammatory drug (NSAID), is generally considered safe for pain relief and inflammation. However, in rare cases, its use has been associated with severe adverse reactions,

including Stevens-Johnson Syndrome (SJS), a potentially life-threatening skin condition (8). SJS is characterized by a severe and painful rash that can lead to the detachment of the outer layer of the skin (9). While it is more commonly linked to certain infections and other medications, including some antibiotics and anticonvulsants, cases of SJS associated with ibuprofen use have been reported. Middle-aged individuals, who might assume they are beyond the susceptibility to severe drug reactions often associated with younger populations, can find themselves facing unexpected challenges (5,7). The onset of SJS is typically abrupt, starting with flu-like symptoms and a rash that progresses rapidly. The severity of SJS requires immediate medical attention (9). The link between ibuprofen and SJS is not fully understood, and the reaction seems to be idiosyncratic, occurring in only a small percentage of individuals. Genetic factors may play a role in predisposing certain people to such severe reactions. Given the widespread use of ibuprofen for various conditions, including arthritis and pain management, understanding the potential risks is crucial. Patients, especially those in middle age, should be aware of the signs and symptoms of severe adverse reactions and seek medical attention if they experience unusual skin rashes, blistering, or mucosal involvement (10). Healthcare providers must weigh the benefits of ibuprofen against the potential risks, particularly in individuals with a history of adverse reactions or known risk factors. Communication between patients and healthcare professionals is vital to ensure informed decision-making regarding medication choices (10).

Conclusion:

While ibuprofen is generally safe, the rare occurrence of severe reactions such as SJS serves as a reminder that no medication is entirely without risk. Middle-aged individuals, like any other age group, should be vigilant about their health, be aware of potential side effects, and consult with healthcare professionals if they experience unexpected symptoms during ibuprofen use.

References:

- Pieper, Stefan. Fluoroquinolone-Associated Disability (FQAD)-Pathogenesis, Diagnostics, Therapy and Diagnostic Criteria: Side-effects of Fluoroquinolones. Springer Nature, 2021.
- Fazeli, Seyed Amirhossein, et al. "Bullous fixed drug eruption following ibuprofen ingestion." *Journal of research in pharmacy practice* 7.1 (2018): 51.
1. Mawson, Anthony R., Ike Eriator, and Sridhar Karre. "Stevens-Johnson syndrome and toxic epidermal necrolysis (SJS/TEN): could retinoids play a causative role?." *Medical Science Monitor: International Medical Journal of Experimental and Clinical Research* 21 (2015): 133.
 2. Mancano, Michael A. "ISMP Adverse Drug Reactions: Propofol-Related Infusion Syndrome (PRIS) 1, 2; Ivermectin-Induced Stevens-Johnson Syndrome; Stevens-Johnson Syndrome/Toxic Epidermal Necrolysis From Fexofenadine; Memantine-Related Drug Eruption." *Hospital Pharmacy* 53.4 (2018): 220-222.
 3. Rainsford, K. D. "Ibuprofen: pharmacology, efficacy and safety." *Inflammopharmacology* 17 (2009): 275-342.
 4. Vassileva, Snezhina. "Drug-Induced Pemphigoid:: Bullous and Cicatricial." *Clinics in dermatology* 16.3 (1998): 379-387.
- Anderson, Hannah J., and Jason B. Lee. "A review of fixed drug eruption with a special focus on generalized bullous fixed drug eruption." *Medicina* 57.9 (2021): 925.
- Larrieu-Jimenez, Patricia, et al. "Diffuse Rash Followed by Erosions on the Lips and Mouth." *The Journal for Nurse Practitioners* 19.10 (2023): 104802.

Muchnick, Bruce G. "Identify the ocular side effects of systemic medications: dozens of mainstream systemic drugs produce a broad range of ocular side effects. Here is a review of numerous systemic medications and the associated side effects you should be aware of." *Review of Optometry* 145.1 (2008): 60-70.

Kantardjiev, Vessel, Elena Stoikova, and Valentina Broshtilova. "Drug-induced rowell syndrome in a male patient." *Scripta Scientifica Medica* 50.4 (2018): 39-42.