International Summit on Science Technology and Humanity
ISETH 2024
ISSN: 2615-1588 (online)

Stevens Johnson Sindrome (SJS) in a Patient Presenting with Acute Pharyngitis

Sabira Husna Ristyana [1*], 'Ulayya Azzah Nadiroh[2], Iwan Setiawan Adji[1]

[1] Departement of Medicine, RSUD Karanganyar, Jl.Yos Sudarso Karanganyar, 495118, Central Java, Indonesia
[2] Faculty of Medicine, Universitas Muhammadiyah Surakarta, Surakarta, Indonesia
[3]Departement of ENT-HN, RSUD Karanganyar, Jl.Yos Sudarso Karanganyar, 495118, Central Java, Indonesia

Abstract

Purpose: The purpose of this report is to present a case of Stevens Johnson Syndrome (SJS) in a Patient with Acute Pharyngitis, analyzing its etiology, risk factors, clinical symptoms, diagnostic tests, and treatment. This report also highlights the importance of prevention and proper management to improve the prognosis of the patient.
Methodology: The methodology used in this report is a clinical case study. Data were collected through anamnesis, physical examination, and supporting examinations such as laboratorium. The patient's management was analyzed based on existing medical theories and appropriate treatment was provided according to the patient's condition.
Results: The patient was diagnosed with acute pharyngitis with a differential diagnosis of Steven Johnson syndrome, with complaints of sore throat since 5 days ago. Blood laboratory results; leukocyte count 10.75 thousand/ul, leukocyte differential count; neutrophils 78.7% (H), lymphocytes 12.9% (L), eosinophils 0.9%, NLR 6.10% (H). Patients received therapies such as neurobion injections, metamizole injections, and dexamethasone injections. The patient was consulted to a dermatovenerology because the patient was suspected of having Steven Johnson Syndrome. So it is true that the patient has Steven Johnson Syndrome. The therapy given by the dermatovenerology was a 10 mg dexamethasone injection, followed by 5 mg every hour. Other therapies were stopped. The patient had a history of taking medication for headaches which was identified as a significant risk factor for developing the condition.
Applications/Originality/Value: This report provides insights into the importance of early diagnosis and proper management in steven jhonson syndrome. sore throat most frequently recorded as a prodromal symptom for SJS, before the onset of skin rashes and oral cavity lesions. Painful skin rash when pressed and Nikolsky's sign are indicators to suspect Stevens-Johnson syndrome. Delayed management of SJS can be fatal, so misdiagnosis must be avoided. The findings can be useful for healthcare professionals to understand clinical signs and effective treatment approaches for similar cases. The study emphasizes the need for preventive measures. A thorough investigation of the drug usage history must be conducted to establish the diagnosis and determine the management plan. Management through multidisciplinary collaboration is highly expected for the patient's recovery.

Introduction Section

Stevens-Johnson syndrome (SJS) is an acute mucocutaneous syndrome with potential lethality, characterized by erythematous macules with central necrosis development, bullous lesions, followed by painful dermo-epidermal detachment (De Guido *et al.,* 2020). SJS is the less severe of a group of disorders that include toxic epidermal necrolysis (TEN), Stevens-Johnson syndrome (SJS), and Stevens-Johnson/toxic epidermal necrolysis (SJS/TEN). Erythema multiforme (EM) is generally considered a separate condition. The term "idiosyncratic drug reaction" refers to SJS/TEN. The illness is uncommon and erratic. The incidence of SJS/TEN ranges from 0.4 to 1.2 and 1.2 to 6 per million person-years, and it affects people of all ages, races, and genders (Imatoh and Saito, 2021). Before the rash appears, pharyngitis is frequently the first symptom to manifest, and in certain situations, it can be the sole symptom. As was the case with our patient, this illness is frequently misdiagnosed. This may occur as a result of symptoms that resemble a wide range of illnesses that we frequently see in primary care, including viral exanthem, conjunctivitis, adverse medication reactions, and upper respiratory tract infections. Additionally, it might be mistaken for less common illnesses including autoimmune blistering disorders and bullous pemphigoid (Dutt *et al.,* 2020). We found 51,040 (0.1%) hospitalizations for SJS/TEN out of 392,302,031 expected hospitalizations in the US between 2010 and 2020. Of those, 7818 (15.3%) had SJS-TEN overlap syndrome, 37,283 (74.0%) had SJS, and 7160 (14.0%) had TEN. The United States saw an average of 4640 hospitalizations

* Corresponding author: ulayyaazzah@gmail.com

with SJS/TEN year between 2010 and 2020 (Wasuwanich *et al.,* 2023). Japan reports 500-700 instances of TEN and 800-1000 cases of SJS per year (Hoshohata K *et al.,* 2019). Compared to our big population and hospital numbers, the incidence of SJS/TEN in Indonesia is poorly documented. This was examined at Dr. Saiful Anwar General Hospital in Malang, Indonesia. From 2012 to 2017, the study collected data on 75 SJS/TEN patients (63 SJS; 12 TEN), with an incidence rate of 12.5 cases annually (Ratnaning *et al.,* 2019).

SJS has a high mortality rate, reaching 25%-70%, with the highest mortality rate found in the elderly. The mortality rate in children is lower than in the elderly, but half of the children affected by SJS suffer from long-term complications. Although rare, SJS is a form of emergency with a high mortality rate and incidence of disability (Witari, 2019). Patients with Stevens-Johnson syndrome or toxic epidermal necrolysis may visit an ENT specialist due to involvement of the respiratory and upper digestive tract mucosa. ENT complaints are often observed, such as otalgia, nasal obstruction, odynophagia, and odynophagia. Otolaryngological involvement occurred in 98% of patients evaluated by an ENT specialist during the acute phase, with 94% of these cases occurring in the oral cavity, lips, buccal mucosa, and gums. Significantly, because of the possibility of upper airway blockage, feelings of dyspnea or dysphonia are linked to severe ENT disease forms that are defined by supraglottic and laryngeal lesions (Neil *et al.,* 2021).

The readiness of ENT specialists in managing Stevens-Johnson Syndrome for patients presenting with complaints during the acute phase, and the identification and management of the severity of respiratory and upper gastrointestinal tract disturbances. Stevens-Johnson syndrome is among the few illnesses that require immediate medical attention. Early recognition and prompt and appropriate management can save lives. We report a 21-year-old female patient diagnosed with acute pharyngitis, who initially did not raise concerns for SJS, with oral mucosal peeling resembling thrush, but failed to improve with treatment.

Case description

A 21-year-old woman was referred to the ENT department from the emergency room with complaints of a sore throat. Throat pain has been felt for the past 5 days, mild pain is felt when drinking but becomes more severe when swallowing food. Pain also when opening the mouth. For the past 3 days, the body has felt hot. And one day before the examination, the patient complained of a rash on the skin, which felt itchy. It has been checked at the community health center but did not improve.

Blood pressure examination 114/76 mmHg, pulse 117x/minutes, body temperature 37.6°C. The lips appear dry, hyperemic, with minimal erosive lesions in the mouth, lips, and perioral area (figure 1a). Opening the mouth feels painful. Rashes are seen on the skin spread across the neck, chest, abdomen, and back (figure 1b), with no genital lesions and no target lesions on the palms and soles. Blood laboratory results; Hb 13.5g/dl, leukocyte count 10.75 thousand/ul, leukocyte differential count; neutrophils 78.7% (H), lymphocytes 12.9% (L), eosinophils 0.9%, NLR 6.10% (H).

The diagnosis is acute viral pharyngitis. The differential diagnosis includes with differential diagnosis, rash on the neck, chest, abdomen, back, and oral erosion. The patient is admitted to the hospital and given injections of neurobion, injections of metamizole, and injections of dexamethasone as part of the therapy.

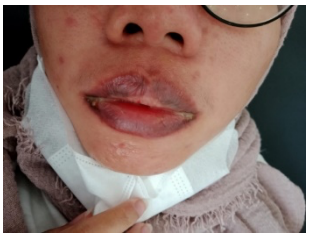

Figure 1a. Lesion on the lips and perioral area.

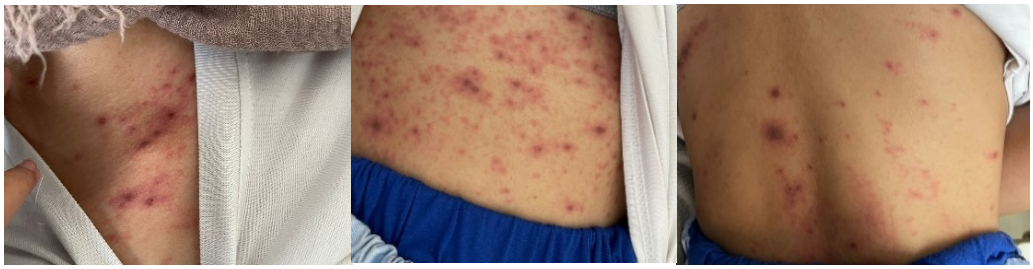

Figure 1b. Rash on the neck, chest, abdomen, and back

On the third day in the hospital, the patient's condition worsened, with erosive mucosal lesions and several pustular lesions in the mouth, lips, and perioral area (Figure 1c). The mouth can only open one finger's width. Skin lesions are blackened with skin peeling (Figure 1d). The patient's general condition appears weak, with reduced food and fluid intake. To determine the condition of the pharyngeal mucosa, we performed an examination with flexible endoscopy, which showed hyperemic mucosa without erosive or pustular lesions. Because of the suspicion of Stevens Johnson Syndrome, the patient was referred to a dermatovenerology. Consultation diagnosis: Stevens Johnson Syndrome then given therapy injection dexamethasone 10 mg, followed by 5 mg every hour. Other therapies are stopped.

A review of medication use was conducted before hospital admission. This patient had previously consumed megabal (a brand name for mecobalamin), santramol (a brand name for paracetamol and tramadol), and bamgetol (a brand name for carbamazepin), prescribed by their family doctor for complaints of headaches.

After following the treatment instructions from the specialist dermatovenerology, the systemic symptoms improved. On the 6th day of treatment, the patient improved and was allowed to go home.

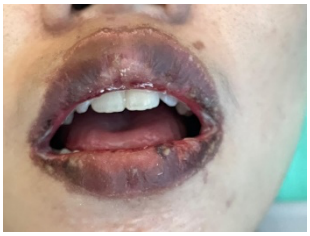

Figure 1c. Erosive lesions and several pustular lesions in the mouth, lips, and perioral area.

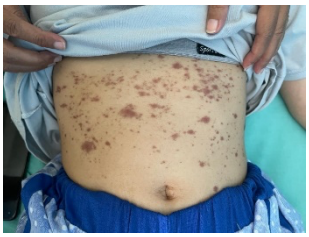

Figure 1d. Skin lesion with blackening and peeling

Discussion

Pharyngitis is defined as inflammation of the pharynx, which can be a general inflammation of the entire pharynx or localized to specific areas in the pharynx. Patients present with complaints of fever, sore throat, and hyperemia of the lips, oral mucosa, and pharynx. Amanda et al., acute pharyngitis is most commonly characterized by fever and hyperemic pharynx as clinical signs (Amanda et al., 2018). Symptoms of sore throat are among the most common presentations for outpatient consultations in primary care (Jayaram and Marnane, 2018). Pharyngitis is frequently identified as a prodromal sign of SJS; in one instance, it was the sole symptom prior to the more typical skin involvement.

Initial symptoms, sore throat, malaise, without fever. According to Middleton D.B., in adults with viral pharyngitis, fever and cough are usually absent. On the third day of the illness, a fever above 39°C appears, accompanied by malaise and sore throat, which occur one day before the skin manifestations. About 63% – 65% of SJS/TEN cases present with a history of fever (Neill et al., 2021).

On the fourth day of the illness, a skin rash appeared, spreading to the neck, chest, abdomen, and back. No rash was found on the soles of the feet and palms of the hands.

The oral mucosa, lips, and perioral area are dry, hyperemic, with minimal erosive lesions, and the presence of lesions in the genital mucosa is denied. The skin rash appears as slightly raised areas, dark papules surrounded by areas of dark edema and an outer zone of erythema, indicating erythema multiforme (Russell et al., 2020). De Guido C et al., stated that skin and mucosal manifestations appear approximately one week after the onset of sore throat

symptoms. Neill BC, involvement of the skin and mucosal surfaces is a hallmark of SJS/TEN. When there is genital involvement (vulva ulceration and scrotal or glans penis desquamation), ocular involvement (conjunctival injection, eyelid skin desquamation, and corneal ulceration), or oral involvement (ulceration and mucosal erosion), special attention should be given to SJS/TEN. It happens in 71 to 94 percent of cases. The skin rash appearance shows erythema multiforme, although its distribution does not extend to the hands and feet, more indicating a rash distribution in Stevens-Johnson Syndrome. The rash in SJS appears flat, macular with indistinct borders that can develop into vesicles and bullae followed by skin peeling. pain on palpation and erythema spreading (Russell et al., 2020). The Nikolsky sign almost always appears in Stevens–Johnson syndrome (SJS). The Nikolsky sign is a diagnostic tool that appears when the epidermis separates from the dermis after applying pressure to the edge of a blister. This causes the blister to widen and the skin to appear like wet cigarette paper.

Blood laboratory results; leukocyte count 10.75 thousand/ul, leukocyte differential count; neutrophils 78.7% (H), lymphocytes 12.9% (L). Anthony R. et al. state that in roughly 50% of instances of viral pharyngitis, the total white blood cell count may be somewhat high at first, then drop to less than 5000 cells after 4–7 days of illness. When attempting to distinguish between bacterial and viral causes of pharyngitis, the white blood cell count is of little use (Wolford et al., 2023). Leukopenia is a moderately common complication risk in SJS/TEN, detected in 13% of patients upon hospital admission. Leukopenia can be caused by an immune reaction to bone marrow antigens. Although the cause is unknown, leukopenia can hinder wound healing and may leave patients at higher risk of infection and poor outcomes, suchas the occurrence of bacteremia and pneumonia, as well as extended hospitaladmissions (Wang et al., 2022). In SJS, an abnormal immune response to drugs or infections typically results in the generation of inflammatory mediators and significant keratinocyte cell loss. Leukocytes are involved in this immunological response, especially neutrophils and T cells. When patients experience significant inflammation or subsequent infections, their body's reaction is often reflected in an increase in leukocytes.

The majority of pharyngitis cases are brought on by infectious pathogens. Viruses are isolated in about 40-60% of cases and pathogenic bacteria in about 5-30% of cases. Papulovesicular skin lesions, either exanthem or enanthem, are frequently seen in conjunction with viral pharyngitis. Based on the above considerations, the diagnosis is acute viral pharyngitis with differential diagnosis, rash on the neck, chest, abdomen, back, and oral erosion.

On the third day of the patient's treatment, there was no improvement; the condition worsened, with increasing pain in the lips, mouth, and throat, although the body was no longer feverish. The patient appears weak, with reduced food and fluid intake. The mouth is only open one finger's width, with erosive lesions on the oral mucosa, lips, and perioral area, as well as several pustular lesionsSkin peeling causes the skin lesions to blacken, appear flat, and have vague borders. The condition raises suspicion of Stevens-Johnson syndrome. Consult a dermatovenerology, and perform an "awake nasolaryngoscopy," evaluating the pharyngeal and laryngeal mucosa, with results showing hyperemic mucosa. Bequignon et al., supraglottic and laryngeal lesions show the severity of Stevens-Johnson syndrome, with a risk of upper airway obstruction (Vittetoe, et al., 2021). Consultation results, diagnosis of Stevens Johnson Syndrome in the patient. Management was adjusted, and the pharmacological therapy was dexamethasone injection 10 mg, followed by 5 mg after 8 hours, as well as a review of the drug history. The administration of high-dose corticosteroids such as prednisolone 1–2 mg/kg/day for 3-5 days and dexamethasone 8-16 mg/day, which can be increased by 4 mg/day on the following day, is recommended for SJS patients (Russel et al., 2020). Pharmacological therapy that can be given to SJS patients includes immunosuppressants, but this therapy can increase the risk of infection. Other pharmacological therapies that can be used in the management of SJS besides steroids are cyclosporine, IV Ig, plasmapheresis, and thalidomide (Guido et al., 2020).

The patient took megabal (a brand name for mecobalamin), santramol (a brand name for paracetamol and tramadol), and bamgetol (a brand name for carbamazepine) five days prior to the sore throat, according to the drug use investigation. The neurologist prescribed these medications because the patient had been complaining of migraine headaches. TEN is intricately tied to carbamazepine, one of the most often prescribed medicines that can trigger hypersensitivity responses (Dutt et al., 2020). There was a skin rash about eight days after using carbamazepine. Bastaji et al. observed that the beginning of TEN occurred less than three weeks after carbamazepine was administered. According to Pamnani et al., skin problems started to appear two weeks after starting carbamazepine.

Immediate identification and initiation of treatment are crucial and can save the lives of SJS/TEN patients; therefore, the reported case can be particularly useful for doctors who have not yet encountered this condition, as well as its acute signs and symptoms.The early phase of Stevens-Johnson syndrome is often misdiagnosed, as happened

with our patient. This can occur because the symptoms are similar to various conditions commonly encountered in primary healthcare services.

Conclusion

Patients with Stevens-Johnson syndrome often consult an ENT specialist, with sore throat most frequently recorded as a prodromal symptom for SJS, before the onset of skin rashes and oral cavity lesions. Delayed management of SJS can be fatal, so misdiagnosis must be avoided. Skin involvement (rash) and mucosal surface involvement (lesions) are characteristic of SJS. Special consideration for SJS/TEN should be given if there is oral involvement (ulserasi dan erosi mukosa). Painful skin rash when pressed and Nikolsky's sign are indicators to suspect Stevens-Johnson syndrome. A thorough investigation of the drug usage history must be conducted to establish the diagnosis and determine the management plan. Management through multidisciplinary collaboration is highly expected for the patient's recovery.

Conflict of Interest

No organization or entity with a financial interest (such as honoraria, educational grants, participation in speaker bureaus, memberships, employment, consultancies, stock ownership or other equity interests, expert testimony, or patent licensing arrangements) or non-financial interest (such as personal or professional relationships, affiliations, knowledge, or beliefs in the subject matter or materials discussed in this manuscript) has any affiliations or involvement with the authors.

Consent Form

The researcher requested verbal consent from the patient. The researcher explained to the patient that the patient's experiences would be written up for the research, and the patient agreed to this.

Acknowledgement

We convey our deepest thanks to Dr.dr.H.Iwan Setiawan Adji, Sp. ENT-KL and dr.Sunaryo, Sp.KK who has provided very meaningful guidance, advice and resources in this publication process.

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