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CASE REPORT

Nevirapine-Induced Stevens–Johnson Syndrome in an HIV-Infected Patient: A Case Report From Uganda

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Abstract: Nevirapine, a non-nucleoside reverse transcriptase inhibitor (NNRTI), is widely prescribed in antiretroviral therapy (ART) for HIV treatment. Although effective, it is associated with rare but severe adverse drug reactions, including Stevens–Johnson syndrome (SJS), a life-threatening mucocutaneous disorder. This case report describes a Middle age HIV-positive man who developed SJS following nevirapine initiation, highlighting the importance of timely recognition, management, and the need for clinician vigilance to prevent adverse outcomes in antiretroviral therapy.

Keywords: nevirapine, Stevens–Johnson syndrome, antiretroviral therapy, adverse drug reactions, Hiv

Introduction

Stevens–Johnson syndrome (SJS) is a rare but severe immune-mediated reaction primarily triggered by medications, including antiretroviral drugs, posing a significant challenge in HIV care. The syndrome is characterized by extensive epidermal detachment, mucosal involvement, and systemic symptoms that can result in substantial morbidity and mortality if not promptly identified and treated. Globally, SJS has an estimated incidence of 1–6 cases per million annually, with mortality rates ranging from 5% to 10%.[1] The condition is considered a medical emergency, especially in settings with limited access to intensive care.[1]

In sub-Saharan Africa, the high prevalence of HIV, compounded by disparities in healthcare infrastructure, significantly increases susceptibility to SJS and contributes to poorer outcomes.[2] Limited access to critical care facilities and delays in recognizing adverse drug reactions exacerbate mortality rates. Adverse drug reactions to antiretroviral therapy (ART) are a well-documented concern in this region. Nevirapine, widely used due to its affordability and effectiveness in ART regimens, is associated with an elevated risk of hypersensitivity reactions, including SJS, particularly in individuals with low CD4 counts.[2] In Uganda, where ART programs are extensive, adverse cutaneous drug reactions are a significant yet underreported issue. A Ugandan study reported a notable prevalence of severe cutaneous adverse reactions, including SJS, among ART recipients, underscoring the importance of vigilant monitoring and proactive management in HIV treatment programs.[3]

Drugs commonly implicated in SJS include antibiotics (eg, macrolides), nonsteroidal anti-inflammatory drugs (NSAIDs), and anticonvulsants like carbamazepine. Recent study by Abulatan IT et al[2] highlighted various drug etiologies, emphasizing the critical need for careful prescribing practices to mitigate risks. Although the global incidence of SJS is relatively low, its burden is disproportionately amplified in HIV-endemic regions like Uganda due to the widespread use of high-risk medications such as nevirapine.[2]

This report describes a case of nevirapine-induced SJS in an HIV-positive man, emphasizing the necessity for early recognition, prompt management, and vigilant monitoring to prevent severe ART-related adverse reactions.

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Case Presentation

A 58-year-old HIV-positive Ugandan, newly diagnosed with HIV, was initiated on antiretroviral therapy consisting of nevirapine, tenofovir, and lamivudine. His baseline CD4 count was 350 cells/μL, and he had no prior history of ART exposure or drug allergies. Within 48 hours of nevirapine initiation, the patient presented with a generalized erythematous maculopapular rash, primarily affecting the trunk and upper limbs, accompanied by pruritus. Over the next 24 hours, the rash progressed rapidly, evolving into painful, flaccid bullae and areas of skin detachment, involving approximately 10% of his total body surface area (Figure 1). Mucosal involvement was noted, including the oral cavity and ocular conjunctivae, leading to a provisional diagnosis of Stevens–Johnson syndrome.

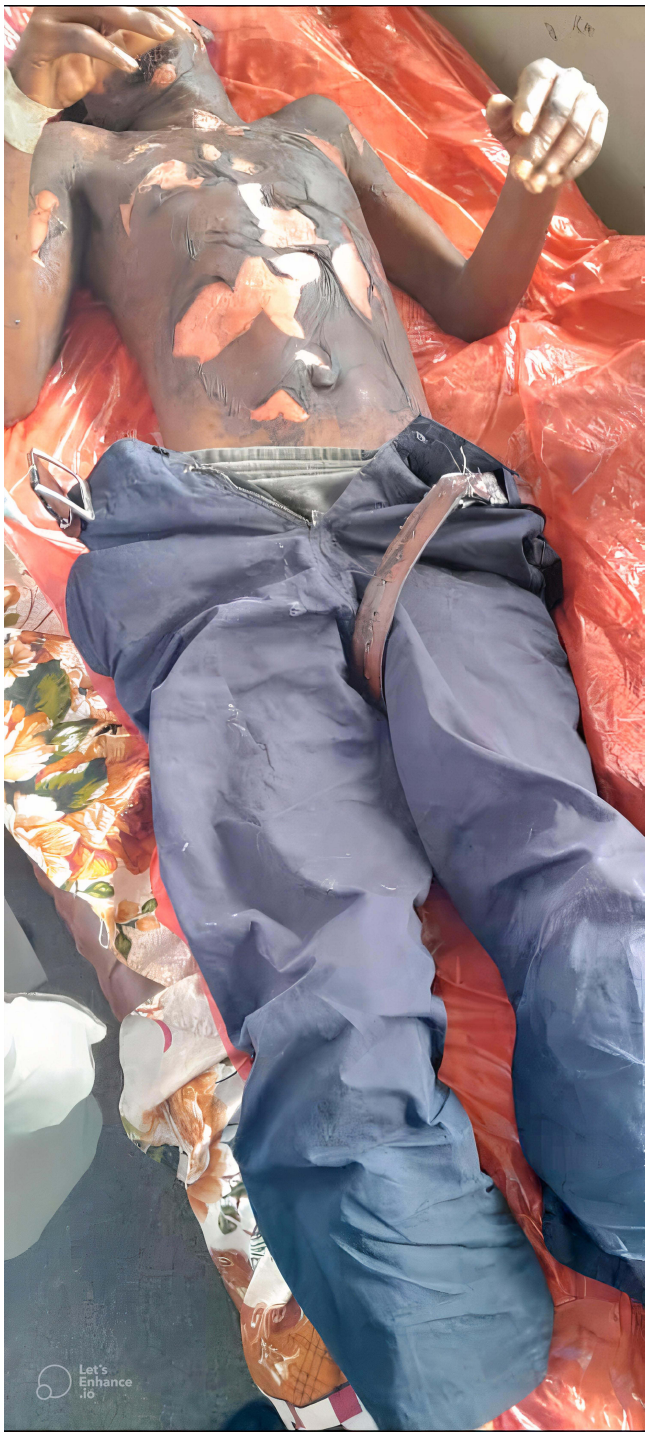

Figure 1 Showing a generalized erythematous maculopapular rash, primarily affecting the trunk and upper limbs, accompanied by pruritus.

Diagnosis

The diagnosis of Stevens–Johnson syndrome was made based on clinical presentation, including extensive skin involvement with epidermal detachment and mucosal erosion in a patient recently initiated on nevirapine, which is a known trigger (1, 5). Diagnostic criteria for SJS typically include drug exposure within 1–3 weeks, mucocutaneous lesions covering <10% body surface area, and mucosal involvement. Although a skin biopsy could provide definitive confirmation, the diagnosis was based on clinical presentation, which is often sufficient in resource-limited settings.

Management

Upon diagnosis, nevirapine was immediately discontinued. The patient was managed with an aggressive treatment approach that included intravenous dexamethasone at 8 mg every six hours, intravenous fluids, prophylactic antibiotics, anti-allergic medications, and local care for skin lesions. The decision to use corticosteroids was based on the severity of symptoms and the lack of alternative treatments like intravenous immunoglobulin (IVIG), though their use in SJS remains debated due to inconsistent evidence on efficacy and potential risks of secondary infections.

The antiretroviral therapy (ART) regimen of stavudine (30 mg), lamivudine (150 mg), and nevirapine (200 mg) was immediately discontinued. Within 4 to 5 days, the patient showed significant clinical improvement, though hepatic enzyme levels remained elevated for approximately one week.

Nevirapine was not reintroduced due to the risk of recurrence. After 15 days, following complete resolution of symptoms and near normalization of hepatic enzymes, the patient was started on a modified highly active antiretroviral therapy (HAART) regimen that included efavirenz as a substitute for nevirapine. During subsequent follow-ups, no recurrence of the rash or hepatic function impairment was observed, indicating a successful adjustment of the ART regimen and effective management of the adverse reaction. After 14 days of supportive care, the patient showed significant re-epithelialization and clinical improvement, with no evidence of secondary infection.

Discussion

This case highlights the rapid onset and severity of nevirapine-induced Stevens–Johnson syndrome, with symptoms developing within 48 hours of drug initiation. Rapid identification and cessation of the offending drug, along with intensive supportive care, were critical in achieving a favorable outcome for the patient. Comparatively, similar cases have documented varying onset times and outcomes depending on the timing of drug discontinuation and the availability of intensive care resources.[1,4]

In sub-Saharan Africa, ART-induced SJS remains a considerable challenge, especially with medications like nevirapine that are widely prescribed due to their cost-effectiveness. Studies have shown that the risk of SJS among nevirapine users is higher in HIV-positive individuals, particularly among those with lower CD4 counts and when therapy is initiated without dose escalation.[3] The rapid onset observed in this case may reflect an immunological predisposition or hypersensitivity reaction exacerbated by nevirapine, which has a well-documented association with cutaneous adverse reactions in the literature.[5,6]

The primary management approach for SJS is the prompt cessation of the suspected medication, combined with supportive care, as systemic treatments like corticosteroids or intravenous immunoglobulin (IVIG) have shown inconsistent benefits in clinical outcomes.[7] Literature supports that early drug discontinuation significantly improves prognosis, underscoring the importance of clinician vigilance and timely intervention. A study by Naik2022 found that immediate withdrawal of the causative agent improved survival rates in SJS/TEN patients, emphasizing that early intervention is crucial in these cases.[8] Proactive strategies, including genetic screening for HLA-B5801 and HLA-B1502, could mitigate the risk of SJS. However, these tests are not routinely available in resource-limited settings, necessitating alternative approaches like close patient monitoring during ART initiation.[9]

For HIV-positive patients in resource-limited settings, the need for close monitoring of ART initiation, particularly with high-risk drugs such as nevirapine, cannot be overstated. Additionally, comprehensive patient education about the

risks of adverse drug reactions and the importance of early reporting of symptoms may improve outcomes by facilitating faster intervention.[9]

Conclusion

Nevirapine-induced SJS in HIV patients poses a significant treatment challenge, requiring early recognition and immediate management to reduce morbidity and mortality. This case underscores the critical role of clinician awareness and prompt drug discontinuation in managing drug-induced SJS, particularly in resource-limited settings like Uganda. Increased monitoring and patient education on drug-related risks may further enhance patient outcomes and reduce the incidence of severe cutaneous adverse reactions.

This case underscores the need for systemic improvements, including policy reforms to enhance pharmacovigilance systems and strengthen adverse drug reaction reporting frameworks in resource-limited settings. Healthcare infrastructure improvements, such as increased funding for pharmacovigilance and training programs for clinicians, are critical to addressing ART-related SJS.

Ethical Approval

Ethical approval to report this case was obtained from the Ethics Committee at Itojo General Hospital (Approval Number: IGH-EC-2024-011).

Consent For Publication

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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Disclosure

The authors declare no conflicts of interest associated with this study.

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