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Case-Based Review

Managing HIV in Burn Patients in Low to Middle-Income Countries

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Abstract

Burn injuries in people living with HIV (PLHIV) raise several unique challenges beyond the standard trauma-infection framework. Despite viral suppression with antiretroviral therapy, patients remain immunologically vulnerable in the context of extensive burns, which disrupts cutaneous and mucosal barriers and triggers systemic inflammation. We report a fatal case of a Sri Lankan HIV- positive patient with 60% burns, highlighting the challenges and strategies for virology-centered care.

Keywords:HIV,Burns,ART, Immunosuppression, LMIC

Background

HIV infection in severe burn patients provides a unique set of challenges in low to middle-income countries (LMIC). Burn trauma compromises cutaneous and mucosal barriers, inducing systemic inflammation and triggering cascades that promote viral reactivation. Sri Lanka has a very low prevalence of HIV, which is below 0.1% (NSACP, 2025). Guidelines from the STD/AIDS Control Programme (NSACP, 2022) elaborate on the ART continuity and opportunistic infection monitoring, but specific management in burn patients has not been explicitly mentioned.International literature suggests increased mortality, prolonged hospitalization, and high susceptibility to superinfections in HIV-positive burn patients. (Forrester et al, 2016). This case emphasizes the practical challenges faced by resource-constrained environments and highlights virology-centered scalable solutions to improve outcomes in burn patients with HIV.

Case Presentation

A 41-year-old, Sri Lankan male, with a history of methamphetamine abuse, HIV infection, and chronic psychiatric illness, was admitted to the Base Hospital, Homagama, with 60% TBSA self-inflicted thinner burns involving the neck, upper and lower limbs, genitalia, and face. Initial burn debridement was performed at the Base Hospital, Homagama.

On post-burn day 3, he left against medical advice and got admitted to the National Hospital of Sri Lanka. Following admission to the NHSL burns unit, he had continuous fever spikes, with elevated inflammatory markers (CRP 355 mg/L), and he was started on piperacillin-tazobactam. He was later escalated to meropenem, and following identification of *Acinetobacter baumannii* in both line and peripheral blood cultures, to IV colistin and oral metronidazole. He was also on olanzapine for his chronic psychiatric illness. His renal function remained stable. There was evidence of leukopenia and anemia (WBC 2.85 × 10^9/L, hemoglobin 9.5 g/dL), and coagulation parameters were slightly deranged (PT 19, INR 1.8, APTT 54.6 seconds). Electrolytes remained within the acceptable range. He was continued on a first-line antiretroviral therapy (ART) regimen comprising tenofovir disoproxil fumarate (TDF), lamivudine (3TC), and dolutegravir (DTG), consistent with national guidelines for HIV management in Sri Lanka, with a CD4 count <600 cells/mm^3, with continuous monitoring by the venereology team at NSCAP.

On post-burn day 9, the patient complained of dysphagia and hoarseness. Despite supportive care, his condition deteriorated. The patient died on post-burn day 12, due to sepsis and multi-organ failure, despite resuscitation attempts.

Discussion

This case highlights several key virological considerations. There are general management guidelines for HIV, developed by NSCAP, but there are no specific protocols for managing burn patients with HIV. Although delayed airway manifestations from inhalation injury can occur, his late onset of dysphagia and hoarseness raises concerns of viral esophagitis and laryngitis, particularly CMV or HSV. In such immunocompromised patients, opportunistic infections should be considered early (Agudelo Higuita et al, 2019). In infections requiring nephrotoxic antimicrobial agents, monitoring renal function is essential as per NSCAP recommendations. (NSACP OI Guidelines,2022).

In the Sri Lankan setting, the integration of virological expertise into burn care remains an area with untapped potential. Limited virology input at critical decision-making points and a lack of burn- specific virology protocols or standard operating procedures (SOPs) can hinder the proper management of virological conditions in burn patients.

Addressing these challenges requires multiple pragmatic solutions. Protocols for managing HIV in burn patients should be developed. Virological input, along with venereology consultation, must be incorporated from the point of admission. HIV-positive burn scenarios deserve inclusion in national guideline revisions. Implementing these strategies can significantly enhance the outcome of burn patients with HIV in LMIC settings.

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Authors' Contributions

The first author conceived the study and wrote the manuscript. All authors contributed to the literature review, clinical data analysis, and approved the final version.

Ethics and Consent

Consent from next-of-kin could not be secured; however, all identifying details have been removed.

Competing Interests

The authors declare no competing interests.

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