

Clinical Diagnosis, Management and Microbiological Profiling of Necrotizing Soft Tissue Infections – A Prospective Study of North India Region

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Abstract

Background: Necrotizing Soft Tissue Infections (NSTIs) are rapidly progressive, potentially fatal illnesses characterized by necrosis of soft tissue. The disease is highly lethal if left untreated. However, its early diagnosis and management can result in significant decrease in mortality, saving the life of patient and preventing limb loss ; but its diagnosis in early stage is difficult. Therefore, the present work describes a step-by-step protocol for early diagnosis of NSTIs and its application for successful management of NSTIs (type III) in the North Indian population.

Methods: This prospective study was conducted over a period of 1 year and 9 months (December 2017 to September, 2019) in a single tertiary center (Dayanand Medical College and Hospital, Ludhiana, Punjab, India) with 115 patients suffering from NSTIs. Demographic, symptomatic and clinical features were recorded. After initial resuscitation, debridement or amputation was done and collected samples were subjected to microbial profiling and drug sensitivity tests. Based on results, suitable pharmacological treatment was started to minimize the risk of mortality and fasten the recovery of patient.

Results: The present work showed that in the selected population, monomicrobial gram negative infections are more prominent, more so, among diabetic males. The most prominent pathogen was found to be *Escherichia coli* (40% of cases). Enrolled patients had NSTIs in stage 1 and had no blood infection which means they sought medical attention in the early stages of the disease and the clinician was able to detect it. Debridement or amputation resulted in a significant decrease in the mortality rate (10.4%) even when the selected population had lethal Type III NSTIs.

Conclusion: The presented approach can aid in early detection and management of NSTIs, thus, helping in saving patient's life and limb.

Key words: necrotizing soft tissue infections, mortality, early management, necrotizing fasciitis, debridement, microbial profiling