

Skin and Soft Tissue Infections in the Pacific Islands: A Literature Review

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ABSTRACT

Skin and Soft Tissue Infections (SSTIs) are a major public health issue worldwide, and represent a significant proportion of the surgical caseload in Samoa in the Pacific Islands. In order to develop evidence-based health policies aimed at reducing the incidence and severity of SSTIs presentation for surgical intervention, a systematic literature review was conducted using the PubMed and ScienceDirect databases. The main search strategy used the terms and keywords "Pacific Islands", "Skin and Soft Tissue Infection", "Etiology", "Epidemiology", "Management", and their relevant synonyms. Inclusion criteria: the study population were Pacific Islanders residing in the Pacific Islands, and the study investigated SSTIs presentation, etiology, epidemiology, treatment, and/or management for the study population. There was no limit on the date of publication. Only one journal article was found that met inclusion criteria. Data are urgently needed on SSTIs in the Pacific Islands to develop evidence-based clinical and public health policies.

INTRODUCTION

Skin and Soft Tissue Infections (SSTIs) are among the most common bacterial infections worldwide, and may be defined as infections of the skin, subcutaneous tissue, fascia and/or muscle [1]. There is great variation in SSTIs etiology and presentation, and the clinical course may range from benign cellulitis to life-threatening necrotizing fasciitis [1,2]. There are also disparities in global SSTI epidemiology, with higher prevalence rates in low and middle-income nations, especially among countries with tropical climates [1,3,4]. SSTIs are a major public health burden worldwide that must urgently be addressed. SSTIs represent a significant proportion of the surgical caseload at the national referral Tupua Tamasese Meaole Hospital in Samoa, a Polynesian nation of the Pacific Islands. The surgical team currently consists of three surgeons and four anesthetists, and there is a dedicated operating table daily to SSTIs cases. The overwhelming majority of SSTIs surgical interventions are for adults living with Type 2 Diabetes Mellitus [5,6]. The aim of the present study was to perform a literature review of SSTIs in the Pacific Islands. The results of the study should (1) enable the development of evidence-based public health policies aimed at reducing the prevalence of SSTIs in Samoa, (2) enable evidence-based guidelines for improved medical management of SSTIs, and (3) ultimately lead to a reduced number of SSTIs cases requiring surgical intervention. The results of the literature review should also prove useful to our Pacific Island neighbors where similar surgical caseloads for diabetic limb amputations are reported [7].

METHODS

A systematic literature review was conducted using the PubMed and ScienceDirect databases. The main search strategy used the terms and keywords "Pacific Islands", "Skin and Soft Tissue Infection", and their relevant synonyms (i.e., "Skin and Soft Structure Infection"): "Pacific Islands"[MeSH Terms] OR ("Pacific"[All Fields] AND "Islands"[All Fields]) OR "Pacific Islands"[All Fields]; "Skin and Soft Tissue Infection"[MeSH Terms] OR ("Skin"[All Fields] AND "Infection"[All Fields]) OR ("Soft Tissue"[All Fields] AND "Infection"[All Fields]) OR "Skin and Soft Tissue Infection"[All Fields]. Following this search strategy, titles and abstracts were read and reviewed, and, when appropriate, included for further study. The selected articles were read completely, and their references were hand-searched. The following inclusion criteria were used to assess article suitability for this review: (1) the study population were Pacific Islanders residing in the Pacific Islands, and (2) the study investigated SSTIs presentation/etiology/epidemiology/treatment/management for the study population. There was no limit on the date of

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publication.

RESULTS

The literature review found only one journal article meeting the inclusion criteria. Published in 2020, this paper summarized the presentation and management of 748 cases of SSTI hospital admissions in Fiji [8]. The most common cause of SSTIs in the study population was abscess (N=398, 53.2%), followed by cellulitis (N=101, 14.2%), surgical wound infection (N=86, 11.5%) and wound infection (N=71, 9.5%). Surgical intervention was performed for 63.9% of SSTI cases, including 87. % Of necrotizing fasciitis cases. Superficial skin swabs (N=520) yielded positive cultures for 409 samples, and the most common pathogen was *Staphylococcus aureus* (n=239, 46%), including 11 cases (4.6%) of methicillin-resistant *S. aureus* (MRSA).

DISCUSSION

Publications regarding SSTIs among people living in the Pacific Island nations are virtually non-existent. Data are urgently needed to guide evidence-based health policy formulation and implementation. However, the lack of data from the Pacific Islands should not deter clinicians and policy-makers from addressing SSTIs, and indeed preliminary efforts should prove a useful foundation for the monitoring and evaluation of future interventions. Based on the literature from other low and middle-income nations with a tropical climate, we recommend the following for Samoa:

Increased public awareness of SSTIs

Collaboration with health promotion officers is advocated to increase public awareness of SSTIs. World Sepsis Day (13 September) is an annual event which presents an opportunity to highlight SSTIs as a major public health issue, as well as provide public health education on risk-factors for SSTIs, and advice on timely attendance for medical care. Similarly, World Antibiotics Awareness Week (18-24 November) offers a platform to provide refresher training to all health professionals on best practice to minimize the development of antibiotic resistance, especially MRSA in the clinical/hospital setting.

Increased awareness of SSTIs among at-risk patients

People at greater risk of developing SSTIs include older adults, immunocompromised individuals, and people living with Type 2 diabetes [9,10]. As stated above, the vast majority of patients in Samoa attending the operating theatre for surgical intervention of SSTIs are older adults with diabetes, and the most common surgeries are debridement, re-debridement, and lower limb and toe amputations. Anecdotally, late presentation for hospital care is often due to preference for traditional healing practices. This is a challenge across all areas of healthcare, and discussions are underway on possible solutions that align both traditional and biomedical care health services.

Retrospective Review of SSTIs surgical caseload

A retrospective review of the sepsis surgical caseload at the national hospital of Samoa is recommended to document the number and clinical/surgical presentations of individuals with SSTIs. This should provide evidence to guide public health and clinical policies aimed at reducing SSTIs in Samoa. It should also provide baseline data for monitoring and evaluation of interventions at a future date. One of the goals is to reduce the sepsis surgical caseload: an improved understanding of the patients requiring surgery should lead to improved management of risk-factors, and therefore a reduction of disease progression to advanced critical stages requiring surgical intervention. Given that histopathology is requested for all sepsis surgery cases, a study of the causal pathogens should further support the development of appropriate evidence-based treatment and strategies to combat this avoidable condition.

CONCLUSION/RECOMMENDATIONS

Data are urgently needed on SSTIs in the Pacific Islands to develop evidence-based clinical and public health policies. The lack of data should not deter the implementation of health education activities regarding SSTIs and sepsis in the public health and clinical spaces. A retrospective review of the surgical SSTIs caseload should provide preliminary information on tackling this important public health issue.

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