



EPIDEMIOLOGY OF DIABETIC FOOT AND MANAGEMENT OF FOOT PROBLEMS

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ABSTRACT This research study sought to identify approaches and techniques relevant to controlling foot-related diabetes and ascertain the challenges health care workers encounter during the treatment of the diabetic condition. Data were collected from 150 nurses using structured interviews that established broad-spectrum and antiseptics as effective in treating the condition.

KEYWORDS :

INTRODUCTION

People with long-term pressure are more susceptible to the disease being studied, which is a growing diabetic condition that contributes to poor blood flow or feet numbness. The disease can be caused by anaerobic pathogens like Clostridium and Peptostreptococcus or aerobic bacteria like Enterobacteriaceae. In addition, internal lining sores infected with aerobic variants heal faster than those infected by the anaerobic pathogens that have a longer healing time. Some attributes associated with poor healing of the diabetic condition include oxidative stress markers like G-S Peroxidase, G Peroxidase, Catalase, Superoxide Dismutase, thiobarbituric acid reactive substance, and lipid peroxidation (Apelqvist 385; Bakker et al. 225; Ballard et al. 486). However, the management of diabetic foot infection poses several challenges to health care workers due to the presence of risk factors like poor health care resources, poor cognition of leg-oriented care activities, and wearing inappropriate footwear that increases the burden of the infections.

OBJECTIVES

- The research study was founded on two goals that encompassed:
- I. To identify approaches and techniques appropriate for the control of the diabetic condition.
 - II. To ascertain the challenges encountered by health care workers during the treatment of patients infected with the diabetic condition.

LITERATURE REVIEW

Diabetic foot problems can be managed through the use of antibiotics and antiseptics. For instance, severe infections require antibiotics like broad-spectrum cephalosporin, piperacillin-tazobactam and ampicillin-sulbactam, and imipenem-cilastatin (Driver et al. 22; Nather et al. 5731; Tan et al. 236).

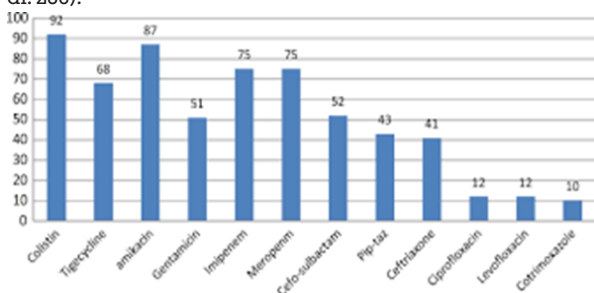


Figure 1: A graph showing various bacteria that cause

diabetic foot problems (Source: Boulton, The diabetic foot: grand overview, epidemiology, and pathogenesis 6)

Alternatively, severely infected patients can be hospitalized and treated with the broad-spectrum antibiotics vital in managing the various bacteria illustrated in figure 1. Moderately and mildly infected patients can undergo treatment with antibiotics like clindamycin, moxifloxacin, amoxicillin-clavulanic, or cephalexin (Turns, The diabetic foot: an overview of assessment and complications 25; Viswanathan 124). Antiseptics are also effective in the treatment of the diabetic condition by destroying or inhibiting the growth of the pathogenic microbial on the living tissue.

Conventional therapeutic interventions such as saline dressing were considered effective treatment and management of diabetic foot problems, but revolutionized strategies are changing the health care trends. An example is Cadexomer iodine, a sterile antimicrobial dressing that allows for a sustained and gradual release of iodine into the sore and maintains a prolonged antiseptic action (Turns, The diabetic foot: an overview for community nurses 423). This medical strategy differs from the traditional iodine dressing, where protein components consume the free iodine and eventually attenuate its effect.

MATERIALS AND METHODS

The study was conducted at KVG Medical College Hospital, where a sample size of 150 health practitioners was recruited for a structured interview. A questionnaire containing multiple-choice, rating scale, and open-ended questions was considered as essential in gathering primary data analyzed by coding to quantify the findings. The study was conducted according to the time frame in Table 1 and supported by quality secondary literature sources illustrated in Table 2 and obtained from various online databases like PubMed, ResearchGate, and ScienceDirect, among others.

Table 1: A grant chart showing the time frame

Activity	Months (2021)					
	J	F	M	A	M	J
Preliminary research	■					
Formulating research methodology		■				
Designing questionnaires		■				
Gathering of data			■	■		
Evaluation of the data				■	■	
Report compilation						■
Submission and dissemination of findings						■

Table 2: A table showing a sample of quality literature employed in qualitative analysis

Author and Publication Date	Relevance of Study	Objectives of the Research	Data Type
Frykberg (2002)	Availability of knowledge necessary in the management of the condition.	The article aimed at investigating the treatment and pathogenesis of ulcers related to diabetic foot .	Article
Kalish and Allen (2010)	Identification of relevant strategies for mitigating diabetic foot problems.	The journal aimed at analyzing the effective management of diabetic foot challenges.	Journal
Pendsey and Zulfiqarali (2007)	Implementation of an effective model for the reduction of infections related to diabetic foot.	The report aimed at identifying a step-by-step initiative for minimizing challenges related to diabetic foot that could be competently applied in developing countries.	Report

DISCUSSION

As demonstrated in figure 2, which shows increasing research on diabetic foot infections, this research study established that such knowledge was essential in effectively managing the condition. For example, chronic hyperglycemia is associated with declining tissue sensitivity to insulin and insufficient production of the hormone. These conditions contribute to an inadequate supply of insulin, and its low production could cause tissue breakdown that could result in diabetic foot-infected patients becoming morbid and undergoing amputation. Research by Tantisiriwat and Siriporn reveals that between 0.03% and 1.5% of diseased persons with tissue breakdown undergo an amputation (1097). Conversely, the researchers further report that 90% of diabetic people lack foot ulcers.

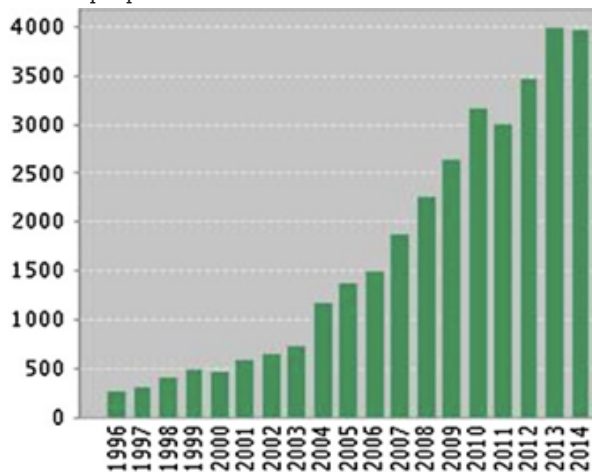


Figure 2: A graph showing increasing knowledge concerning diabetic foot problems (Source: Boulton, The diabetic foot: a global view 5)

CONCLUSION

From the results obtained from the 150 nurses, this research

study determined that diabetic foot problems could be managed through broad-spectrum antibiotics and antiseptics alongside the use of Cadexomer iodine. Furthermore, the findings suggested that challenges linked with the management of the condition include poor health care resources, poor cognition of leg-oriented care activities, and the wearing of inappropriate footwear that increases the burden of infections. All in all, diabetic foot infection could cause amputation of infected organs and morbidity, especially when the patients have an inadequate supply and a low production of insulin hormone.

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