

Diabetic Foot: Are Existing Clinical Practice Guidelines Evidence-Informed?

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Abstract

The objective of this editorial was to provide an overview of role of existing clinical practice guidelines on diabetic foot- its diagnosis and management from an evidence-informed perspective. Various organizations and focused research groups such as The Diabetes Committee of the American Orthopaedic Foot and Ankle Society, International Working Group on the Diabetic Foot, American College of Foot and Ankle Orthopaedics and Medicine, American College of Foot and Ankle Surgeons, Tucson Expert Consensus Conference and Infectious Disease Society of America had published a total of eight clinical practice guidelines. Whilst the existing guidelines were focused both on assessment and treatment, a multidisciplinary biopsychosocial perspective is however lacking in spite of the ensuing evidence-informed paradigm shift.

Keywords: Practice guidelines; Diabetic foot syndrome; Evidence-informed practice; Critical appraisal

Introduction

Diabetic foot syndrome is a clinical state recognized in individuals with diabetes mellitus, which is characterized by infections, ulcers, arthropathy and peripheral vascular disease [1]. "Is there an evidence base for diabetic foot care?" [2] Yes, the evidence base for evaluation and management of diabetic foot is increasing in number, with many systematic reviews available on its classification [3], imaging [4], scoring systems [5], risk factors [6], and also on prevention, diagnosis and treatment [7] using patient education [8], electrophysical modalities [9], orthotic insoles [10], total contact casts [11], hyperbaric oxygen therapy [12], antibiotic therapy [13,14], topical agents such as honey [15] and silver-based wound dressings [16], platelet-rich plasma gel [17], Negative pressure wound therapy [18,19], vacuum assisted closure therapy [20], surgical debridement [21], endovascular methods [22], skin replacement therapies [23], biomarkers [24] and so on.

The volumes of literature on diabetic foot in terms of systematic reviews warrant the necessity for clinical practice guidelines both for assessment and treatment along an evidence-based protocol [25]. Evidence-based/ evidence-informed approach to diabetic foot care thus emphasizes a comprehensive multidisciplinary management utilizing an interprofessional teamwork along a holistic biopsychosocial model [26]. Such evidence would not only reflect current practice but also provide better research evidence to practice [27]. The objective of this editorial was to provide an overview of role of existing clinical practice guidelines on diagnosis and management of diabetic foot from an evidence-informed perspective.

Methodology

A non-systematic approach to literature search was performed through PubMed using following search methods. "Diabetic foot" was searched in Title with search filters activated for guideline or practice guideline to obtain relevant records published in English language with their content available in abstracts.

Data extraction and synthesis

The obtained guidelines were evaluated and summarized both for their source and content.

Main findings

There were a total of seven guidelines which were indexed as eight records under article type 'practice guideline' or 'guideline' for diabetic foot in PubMed database.

Guideline#1: In 1999, the Diabetes Committee of the American Orthopaedic Foot and Ankle Society has developed guidelines for implementing prophylactic diabetic foot care. The guidelines comprised of following information: screening for patients who are at risk for developing diabetic foot complications, patient education, basic treatment guidelines, referral guidelines, and resources [28].

Guideline#2: In 1999 the International Consensus was published by a group of independent experts named as the International Working Group on the Diabetic Foot [29].

Guideline#3: In 2000, the American College of Foot and Ankle Surgeons and American College of Foot and Ankle Orthopaedics and Medicine had jointly presented a Clinical Practice Guideline for three diabetic foot disorders (diabetic foot ulcers, diabetic foot infections and diabetic Charcot neuropathic osteoarthropathy). This guideline emphasized the implementation of a multidisciplinary team approach to patient management [30].

Guideline#4: is a duplicate record for guideline#3 [31].

Guideline#5: In 2005, the Diabetes Committee of the American Orthopaedic Foot and Ankle Society has developed guidelines for the implementation of prophylactic foot care which includes a

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comprehensive evaluation- screening examination for peripheral neuropathy, skin integrity, ulcers or wounds, deformity, vascular insufficiency, and footwear; individualized foot-specific patient education; and, a multi-faceted treatment comprising of patient education, orthoses, footwear, and a timetable for ongoing skin and nail care. This guideline also emphasized the implementation of a multidisciplinary team approach to patient management [32].

Guideline#6: In 2004, a multidisciplinary expert panel convened at the Tucson Expert Consensus Conference (TECC) to determine appropriate use of negative pressure wound therapy as delivered by a Vacuum Assisted Closure device (V.A.C. Therapy, KCI, San Antonio, Texas) in the treatment of diabetic foot wounds. The Miami consensus panel discussed the following 12 key issues regarding V.A.C. Therapy: dosage and duration of therapy, wound debridement, outpatient evaluation, revascularization, incision, drainage, and debridement, active soft tissue infection, osteomyelitis, noncompliance, combination therapy, small wounds management, successful outcome, and combined effective offloading and VAC Therapy [33].

Guideline#7: In 2006, revision of the year 2000 guideline (#3,4) was done with updated evidence from recent research. This guideline focused on assessment and treatment of Foot ulcerations, infections, Charcot neuroarthropathy, and peripheral arterial disease in diabetic foot [34].

Guideline#8: In 2012, Infectious Diseases Society of America provided the guideline for diagnosis and treatment of Diabetic Foot Infections (DFI). The DFI were classified into mild (superficial and limited in size and depth), moderate (deeper or more extensive), or severe (accompanied by systemic signs or metabolic perturbations). Evaluation often comprises of organism-specific testing and tissue culture, and imaging. Most DFIs require some surgical intervention, ranging from minor (debridement) to major (resection, amputation). This guideline also emphasized the implementation of a multidisciplinary team approach to patient management [35].

Various institutions, committees, organizations and focused research groups such as The Diabetes Committee of the American Orthopaedic Foot and Ankle Society, International Working Group on the Diabetic Foot, American College of Foot and Ankle Orthopaedics and Medicine, American College of Foot and Ankle Surgeons, Tucson Expert Consensus Conference and Infectious Disease Society of America had published a total of seven clinical practice guidelines.

Conclusion

There is a dearth need to summarize the existing guidelines [36] on diabetic foot and revise them with updated evidence for medical, surgical and allied therapeutic interventions, in order to develop global consensus guideline along an evidence-informed multidisciplinary biopsychosocial approach [37].

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