

Global epidemiology of diabetic foot ulceration: a systematic review and meta-analysis

Abstract†

Diabetic foot is a severe public health issue, yet rare studies investigated its global epidemiology. Here we performed a systematic review and meta-analysis through searching PubMed, EMBASE, ISI Web of science, and Cochrane database. We found that that global diabetic foot ulcer prevalence was 6.3% (95%CI: 5.4–7.3%), which was higher in males (4.5%, 95%CI: 3.7–5.2%) than in females (3.5%, 95%CI: 2.8–4.2%), and higher in type 2 diabetic patients (6.4%, 95%CI: 4.6–8.1%) than in type 1 diabetics (5.5%, 95%CI: 3.2–7.7%). North America had the highest prevalence (13.0%, 95%CI: 10.0–15.9%), Oceania had the lowest (3.0%, 95% CI: 0.9–5.0%), and the prevalence in Asia, Europe, and Africa were 5.5% (95%CI: 4.6–6.4%), 5.1% (95%CI: 4.1–6.0%), and 7.2% (95%CI: 5.1–9.3%), respectively. Australia has the lowest (1.5%, 95%CI: 0.7–2.4%) and Belgium has the highest prevalence (16.6%, 95%CI: 10.7–22.4%), followed by Canada (14.8%, 95%CI: 9.4–20.1%) and USA (13.0%, 95%CI: 8.3–17.7%). The patients with diabetic foot ulcer were older, had a lower body mass index, longer diabetic duration, and had more hypertension, diabetic retinopathy, and smoking history than patients without diabetic foot ulceration. Our results provide suggestions for policy makers in deciding preventing strategy of diabetic foot ulceration in the future

*Phototherapy in Diabetic Foot Ulcers: A Promising Strategy for Effective Wound Healing

Abstract

Despite the advancement in wound care, the effective therapy of chronic diabetic ulcers continues to be a challenge. Wound healing is a highly controlled process, which involves a sequence of complex overlapping steps. This healing pathway comprises of hemostasis, inflammation, proliferative, and remodeling phases. Recent evidence suggests that phytomedicines can prevent or repair different kinds of destructive cellular damage, including chronic wounds. Several phytochemicals such as polyphenols, alkaloids, flavonoids, terpenoids, and glycosides have pleiotropic effects, including stimulation of fibroblast proliferation, the main step in wound healing. Besides, the mechanism involves induction of collagen synthesis, migration, and reepithelization and their antimicrobial, antioxidant, anti-inflammatory, and immunomodulatory actions. Similarly, the use of phytochemicals alone or as an adjuvant with standard therapy has demonstrated promising results in managing complications in the diabetic foot. For instance, the extract of *Carica papaya* has been shown antioxidant, antimicrobial, and anti-inflammatory, and immunomodulatory effects, which, together with proteolytic enzymatic activity, contributes to its wound healing property. It is generally believed that phytotherapy has no or minimal toxicity than synthetic therapeutic agents, favoring its use in diabetic foot ulcer management. The current review highlights the selected phytochemicals and their sources; and potential application in diabetic foot ulcer management

Key teaching points and nutritional relevance

Currently, phytochemicals have been shown wide potential in disease. Management including alleviating clinical manifestations, preventing degenerative disease, and curing illness

