

Lower limb complications



Heaven knows I'm miserable now

Matthew Young
Consultant Physician, Edinburgh Royal Infirmary, Edinburgh

The more I read about the psychological impact of diabetes foot ulceration, the more I appreciate how difficult it is for our patients to follow the advice we give them, and how demotivation and social factors frequently compromise outcomes. Whilst we typically cite infection and vascular disease as the causes of amputations, non-adherence is one of the primary reasons for delayed closure of ulceration, which is itself a risk factor for amputation.

The two lead articles in this quarter's lower limb complications section focus on these rarely discussed areas of diabetes foot care.

Fejfarová et al (their study summarised alongside) compared a selected list of psychological and social characteristics among 104 people with diabetes and diabetic foot ulcers, and 48 people with diabetes without ulceration. They found that participants with a history of ulceration had a more extensive list of adverse social factors compared to those without a history of ulceration, including lower levels of achieved education, greater prevalence of disability pensions and benefits, and greater levels of

perceived depression. However, objective scores of depression were similar between those with and without diabetes ulceration, except for people who had undergone a major amputation, in whom depression scores were higher.

“...until we pay as much attention to how our patients are ‘feeling’ and how they live their lives, there will be a limit to how much we can achieve with dressings and off-loading alone.”

The second article to study this topic in this issue of *Diabetes Digest* is by McDonald et al, and is summarised on the following page. The authors found that diabetes-related amputations altered body image, but depression and other adverse psychosocial health measures were related to other underlying comorbidities. However, people with a diabetes-related amputation were more likely to

have other diabetes complications, including renal, retinal and cardiac problems, which might account for the differences in depression scores reported by Fejfarová et al.

The problems of delayed healing and amputations continue to be a major issue for people with diabetic foot complications. However, until we pay as much attention to how our patients are “feeling” and how they live their lives, there will be a limit to how much we can achieve with dressings and offloading alone. ■

J Diabetes Res

The effect of diabetic foot on psychosocial outcomes and health

Readability ✓✓✓
Applicability to practice ✓✓✓
WOW! Factor ✓✓✓

1 The authors compared a selected list of psychological and social characteristics among people with diabetes with and without diabetic foot to examine the impact of diabetic foot on daily life and mental health.

2 In total, 104 people with and 48 people without diabetic foot completed the World Health Organization Quality of Life Assessment (WHOQOL-BREF), which consists of 24 items grouped into four domains (physical health, psychological health, social relationships and environment).

3 Those with diabetic foot had a significantly worse quality of life in the area of health and standard of living, as measured by the physical health domain, and scored a lower environmental domain than those without diabetic foot, which was negatively correlated with diabetes duration ($P=0.003$).

4 People with diabetic foot subjectively felt more depressed compared to people without diabetic foot ($P<0.05$); however, depression was objectively recorded in a high percentage in both study groups.

5 The authors conclude that people with diabetic foot had a predominantly worse standard of living. In contrast to the authors' expectations, people with diabetic foot appeared to have good stress tolerability and mental health (with the exception of individuals with previous major amputation) and did not reveal severe forms of depression or any associated consequences.

Fejfarová V, Jirkovská A, Dragomirecká E et al (2014) Does the diabetic foot have a significant impact on selected psychological or social characteristics of patients with diabetes mellitus? *J Diabetes Res* 2014: 371938

J Foot Ankle Surg

Publication patterns of diabetic foot literature

Readability ✓✓✓
 Applicability to practice ✓✓
 WOW! Factor ✓✓

- 1 A two-person panel evaluated scientific data with respect to diabetic foot disease published in 2012. A standard PubMed search was performed to assess the quantity and specific location of published reports.
- 2 A total of 3392 articles were returned. The panel decided whether each article was “relevant” to clinicians working in the field of diabetic foot disease using intentionally broad criteria.
- 3 In total, 1286 (37.91%) relevant articles published in 659 different journals were found.
- 4 Surprisingly to the authors, “general medicine/endocrinology” journals had the highest percentage of relevant articles on diabetic foot disease.
- 5 From 1988 to 2012, there has been a 6.94-fold increase in the number of returned abstracts within the authors’ search criteria.

Nolan CK, Spiess KE, Meyr AJ (2014) Where art thou diabetic foot disease literature? A bibliometric inquiry into publication patterns. *J Foot Ankle Surg* 17 May [Epub ahead of print]

J Diabetes Res

Visualising biofilms in foot wounds

Readability ✓✓✓
 Applicability to practice ✓✓✓
 WOW! Factor ✓✓

- 1 Biofilms are found in diabetic wounds but their presence is increasingly being recognised as a potential barrier to healing; they have been shown to be less susceptible to antimicrobial agents than planktonic bacteria.

Diabetes Care

Recurrent plantar foot ulcer risk factors

Readability ✓✓✓
 Applicability to practice ✓✓✓
 WOW! Factor ✓✓✓

- 1 The study aim was to identify risk factors for ulcer recurrence and to establish targets for ulcer prevention.
- 2 In total, 171 people with diabetes and neuropathy with a recently healed plantar foot ulcer and custom-made footwear were followed for 18 months or until ulceration.
- 3 Seventy-one people had a recurrent ulcer. The presence of minor lesions was the most significant independent predictor for recurrent ulceration (odds ratio, 9.05 [95% confidence interval, 2.98–27.57]).
- 4 Of the 41 ulcer recurrences that were suggested to be the result of unrecognised repetitive trauma, the strongest independent predictor for recurrent ulceration was still the presence of minor lesions.
- 5 Use of adequate offloading footwear was a strong predictor against ulcer recurrence from unrecognised repetitive trauma.

Waaajman R, de Haart M, Arts ML et al (2014) Risk factors for plantar foot ulcer recurrence in neuropathic diabetic patients. *Diabetes Care* 37: 1697–705

- 2 In this investigation, the presence of structured microbial assemblages in chronic diabetic foot wounds was demonstrated using several visualisation methods.
- 3 All 26 samples investigated harboured bioburdens in excess of 5 log₁₀ colony-forming units (CFU)/g.
- 4 Results in this pilot study indicate that bacterial microcolonies and putative biofilm matrix can be visualised in chronic wounds using fluorescence microscopy and ESEM, and also the simple Gram stain.

Oates A, Bowling FL, Boulton AJ et al (2014) The visualization of biofilms in chronic diabetic foot wounds using routine diagnostic microscopy methods. *J Diabetes Res* 2014: 153586

Diabetic Medicine

Psychosocial impact of diabetes-related amputation

Readability ✓✓✓
 Applicability to practice ✓✓✓
 WOW! Factor ✓✓✓

- 1 Among people with diabetes, diabetes-related amputations are associated with poorer physical functioning, worse psychosocial outcomes and greater body image disturbances. However, it is unclear whether these psychological outcomes are solely a result of the amputation or because of the additional medical comorbidities that are often present among people who have had an amputation.
- 2 Results from demographic and medical questionnaires of individuals with diabetes with ($n=50$) or without an amputation ($n=240$) were used to examine the isolated psychosocial impact of diabetes-related amputation.
- 3 Univariate analyses showed that depression, physical quality of life and body image disturbance were all poorer in the amputation group. In multivariate analyses, which controlled for important demographic and medical variables, these differences remained significant for body image disturbance ($P=0.005$), but not for depression or physical quality of life.
- 4 This suggests that diabetes-related amputation has a significant impact on body image disturbance, but not for other psychosocial outcomes. Clinicians should remember to assess and address all potential medical contributors of psychosocial outcomes, rather than assuming that people will always have worse psychosocial outcomes following amputation.

McDonald S, Sharpe L, Blaszczyński A (2014) The psychosocial impact associated with diabetes-related amputation. *Diabet Med* 26 Apr [Epub ahead of print]

“Diabetes-related amputation has a significant impact on body image disturbance, but not on other psychosocial outcomes.”