



Diabetic foot problems: a global challenge but eminently preventable

The late complications of diabetes are often silent until well advanced. Indeed, Type 2 diabetes may present with a neuropathic foot ulcer. The efficacy of screening and prevention has been confirmed in the UK in diabetic retinopathy: it is now essential to repeat this success in lower limb complications of diabetes, says **Andrew Boulton**, Professor of Medicine, University of Manchester

Early a quarter of a century ago, when I was Editor of *Diabetic Medicine*, I wrote an editorial on the annual review that all those with diabetes should undergo¹. At this time, the British Diabetic Association (now Diabetes UK) was advocating a national implementation of screening for late complications of diabetes. In recent years, the power of such screening and prevention has been confirmed in the UK with the establishment of a nationwide eye screening programme for all diabetic patients. Such success now needs to be repeated in the area of lower limb complications.

The International Diabetes Federation (IDF) focused on diabetic foot disease throughout 2005, and the *Lancet* dedicated an issue to reviews and reports on the diabetic foot to coincide with World Diabetes Day, on 14 November, which is the birthdate of Frederick Banting. In a review article in that issue, my colleagues and I reported on IDF statistics that 'every 30 seconds a leg is amputated as a consequence of diabetes

somewhere in the world'². Sadly, more than 10 years later, an amputation occurs every 20 seconds.

The answer to reducing amputations in people with diabetes in the UK is the widespread application of simple screening for high-risk patients, followed by appropriate preventive measures. As more than 80 per cent of all

amputations are preceded by foot ulcers, it is screening for those at risk of developing ulcers that is essential. Risk factors for foot ulcers are well known and have been confirmed in multiple prospective studies. Most important is to identify those patients with insensitive feet as a consequence of neuropathy. As up to 50 per cent of older people with Type 2 diabetes have risk factors for foot ulcers, such screening is essential.

It was Dr Paul Brand, a missionary and surgeon working with leprosy and, later, diabetes patients in South India in the 1950s, who described those with neuropathy as having lost the 'gift of pain'. We live in a symptom-driven society. Patients may present with a painful symptom, see their doctor, and receive a treatment that leads to resolution of the problem. Lack of painful symptoms is therefore often equated by patients with good health. Sadly, many doctors also forget that neuropathic patients have lost the 'gift of pain'. Thus, a high-risk diabetic foot cannot be diagnosed without a careful examination of the feet with shoes and socks removed³.

Foot screening is simple

Brand said that you do not need expensive equipment to diagnose an at-risk foot³. Thus, the annual foot review for diabetic patients can be performed with ease and minimal

BIOGRAPHY

ANDREW BOULTON

Professor Boulton is a graduate of Newcastle upon Tyne and subsequently trained in Sheffield and Miami, prior to accepting an appointment at Manchester University. He has authored more than 500 peer-reviewed manuscripts and book chapters, mainly on diabetic lower limb and renal complications.

Among his many awards, he has received the American Diabetes Association's (ADA) Roger Pecoraro Lectureship, the European Association for the Study of Diabetes (EASD) Camillo Golgi Prize and was the first recipient of the international award on diabetic foot research. He was the 2008 winner of the ADA's Harold Rifkin Award for distinguished international service in diabetes. Prof Boulton has ▶

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expense. Most important is the careful visual inspection of both feet with shoes and socks removed. The peripheral pulses should be palpated, and simple tools can be used to assess sensation.

It was Gerry Rayman's group in Ipswich that described and validated the simplest test of all – the Ipswich Touch Test⁴. If the patients cannot feel the touch by the examiner's finger on their toes, then they are at risk due to lack of sensation. This test requires no equipment at all!

Recent NICE guidance recommends that those patients found to have any risk factors for foot ulceration (eg neuropathy, peripheral vascular disease, foot deformity, past history of ulcer and so on) require education in foot self-care, regular podiatry and more frequent follow-up. Whereas no-one has proven that education alone reduces foot ulcer incidence, the Ipswich group⁵, and others, have confirmed that a multidisciplinary approach to footcare, which includes patient education, does lead to reductions in amputations among people with diabetes.

In this issue, the Q&A looks at how one podiatry team has used root cause analysis to improve footcare. This is followed by what lessons might be learned from the National Diabetes Foot Care Audit by William

Jeffcoate. It is clear, again, that late presentation (perhaps because of the loss of the 'gift of pain') leads to significantly poorer outcomes. As foot problems can be identified and prevented in hospital inpatients, the final footcare article, by Nikki Joule, is particularly apt. NICE guidance now recommends that everyone with diabetes should have their feet checked on admission to hospital.

Finally, the blog post by Scott Cawley, from the front line, reminds us of the importance of education in preventing foot problems in people with diabetes.

All these articles emphasise the need for early screening and prevention of problems, which has to be the way forward in reducing foot ulcers and amputations in diabetes.

also received the 2012 Georgetown Distinguished Achievement Award in diabetic limb salvage. He recently visited Nagoya, Japan where he gave a prize lecture on diabetic complications at the Japan Society of Diabetes.

Previously Editor of *Diabetic Medicine* and currently an Associate Editor of *Diabetes Care*, Prof Boulton was the founding Chairman of the Diabetic Foot Study Group and was formerly Chairman of Postgraduate Education and EASD Hon. Secretary/ Programme Chair. Until recently, he was EASD President and is currently President of the Worldwide Initiative for Diabetes Education. In 2017, Prof Boulton will deliver Diabetes UK's Banting Memorial Lecture at the charity's Professional Conference.

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“The annual foot review for diabetic patients can be performed with ease and minimal expense”

Putting feet first

Putting Feet First is Diabetes UK's campaign to put a stop to unnecessary amputations. The charity wants people with diabetes to know how to look after feet and then know what to expect from their health service. It wants local services to provide an integrated footcare pathway – the right treatment, in the right place, at the right time.

Six steps to better foot care!

1 Ensure that the full diabetes footcare pathway is being commissioned.

2 Use guidance and data to inform local footcare commissioning and performance.

3 Ensure all inpatients with diabetes receive foot checks and appropriate care.

4 Conduct a root cause analysis for all major amputations.

5 Ensure local participation in the National Diabetes Foot Care Audit.

6 Network and share learning with others.



www.diabetes.org.uk/shared-practice-footcare