

Things are finally looking up for the foot in diabetes

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Disease of the foot in diabetes can be truly awful, leading to festering, non-healing wounds that linger for many months, causing immense suffering and blighting the lives of both patients and their families (Boulton et al, 2005). The very idea of conditions such as 'gangrene' and 'amputation', or even the mention of their names, causes as much fear in the public mind as cancer; being linked to the threat of irreversible mutilation, and loss of independent living before an early death. Indeed, this fear is not without grounds, because the evidence is accumulating that five-year survival of any patient presenting with a foot ulcer (of any type, neuropathic or ischaemic) is only 50%, and this is far worse than the majority of cancers (Robbins et al, 2008). There are two main reasons for the outcome being so poor. First, is the complexity of the disease process and, second, the poor standards of care often demonstrated by healthcare professionals.

There is no denying that the process of diabetic foot ulceration is complex, with the easily understood contribution of peripheral arterial disease (PAD) (affecting both the large and small vessels), neuropathy (with lack of sensation encouraging continued trauma to the affected area), and secondary infection, which much increases the extent of local tissue destruction. Less easily understood are the multiple changes to metabolism and chemical signalling which occur at the cellular

level — and about which we have only the dimmest insight. This combination of complexity and poor understanding, as well as the sometimes unpleasant appearance of the wounds, makes the subject unattractive to most doctors and nurses and, being unattractive, it gets neglected.

The diabetic foot has been neglected both at the clinical level and the level of scientific research: it would probably not be too far off the mark to suggest that for every hundred pounds spent on research into breast cancer, the investment in the diabetic foot has been less than one penny — and yet the incidence of the two conditions in the UK is almost identical, while the mortality associated with foot disease is very much higher (Jeffcoate et al, 2006; Robbins et al, 2008). The lack of investment in research means that there are few data available to justify the choice of particular therapies; the evidence for wound care products is paper thin (Hinchcliffe et al, 2008). Manufacturers of dressings tend to invest more in marketing than they do in establishing the effectiveness of their products in expensive clinical trials, and this strategy pays handsome dividends.

There is, however, one aspect of care which has been repeatedly shown to improve outcome: early assessment by an experienced professional (nurse, podiatrist, doctor) and prompt referral when necessary to a multidisciplinary team with the necessary range of skills. Thus, there is a statistical relationship between ulcer duration at the time of first expert assessment and the time it takes to healing (Margolis et al, 2002; Ince et al, 2007), and the implementation of skilled multidisciplinary services has

been shown to markedly reduce the incidence of major amputation (Canavan et al, 2008; Krishnan et al, 2008). Before the adoption of coordinated care in the mid-1990s, the number of limbs lost each year in Middlesbrough were 3.1 for every thousand people with diabetes, and yet by 1999 the figure in Middlesbrough had dropped to 0.86 (Canavan et al, 2008). A parallel initiative in Ipswich saw the incidence of major amputations in Ipswich drop from 4.1 to 0.77 (Krishnan et al, 2008). In each case, the figure fell from one which was among the worst for industrialised nations to being almost the best (Jeffcoate and van Houtum, 2004). Given these startling results, it is obvious that such a policy should be adopted country-wide.

It was partly in recognition of this that Diabetes UK initiated two working groups over the last four years and these reported in 2006 and 2009. The first defined the minimum professional skills to which each person with diabetic foot disease should have access (available online at: www.diabetes.org.uk/Professionals/Education_and_skills/Competencies_-_Feet/), and the second was a blueprint for the pathway of care of foot disease which should be in place in every hospital in the country (available online at: www.diabetes.org.uk/Professionals/Publications-reports-and-resources/Reports-statistics-and-case-studies/Reports/Putting-feet-first/). These reports have been variously endorsed by a large number of related professional bodies, including the Association of British Diabetologists, Primary Care Diabetes Society, Joint British Diabetes Society, Foot in Diabetes UK, Vascular Society of Great Britain and Ireland, Scottish Diabetes Foot Action Group, Welsh Endocrine and

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Diabetes Society, Society of Podiatrists and Chiropodists and NHS Diabetes. The reports are now going through the process of implementation.

This involves rolling out the initiative to strategic health authorities (SHAs) and individual trusts, with the help (in England) of NHS Diabetes. The country-wide adoption of the 'Putting Feet First' campaign will involve the establishment of an expert multidisciplinary team in every trust providing foot care for people with diabetes. Crucially, the service will also depend on the establishment of closer liaison between healthcare professionals in primary and secondary care, with the transfer and sharing of care being simple and seamless: 'diabetes care without walls'. In the vast majority of centres it will be podiatrists who form the linchpin of this liaison, and it is essential that service level agreements (SLAs) are reached which take account of this crucial role. Those who agree new SLAs between primary and secondary care must understand the nature of the service being developed and, sadly, there are recent instances which suggest that some of them do not.

Implementation of Putting Feet First also requires clear specification of the skills and competencies required by professionals engaged in foot care. In addition, it is necessary to establish criteria which can be used to document the effectiveness of routine care. These criteria will include measures relating to process (the existence of a multidisciplinary foot care team, for example, or time to expert assessment of each new lesion), as well as measures of outcome. However, measures of outcome are particularly hard to assess. The incidence of major amputation is the one which is most usually considered but this is only partly dependent on the performance of an expert service – since patients will often be presenting to them towards the end stage of their limb-threatening disease. The prime cause of a major amputation relates not only to the way in which foot disease is managed, but just as much to blood glucose control in the preceding 15 years and the resulting development of neuropathy and peripheral arterial disease. The limitations

of using amputation as a marker of effectiveness of care have been previously described (Jeffcoate and Van Houtum, 2004).

Finally, and crucially, it is essential that the process of implementing new integrated strategies for optimal foot care is closely linked with that of commissioning. The guidelines for clinical care and the criteria which underpin the commissioning of services must be superimposable.

Ultimately, the vision is a clear one, based on simple, clinical principles. These comprise four broad strands (Diabetes UK, 2009):

- ▶▶ That all people in the UK should have the appropriate education and surveillance so that the risk of newly-occurring foot disease is minimised
- ▶▶ That people who are admitted to hospital or residential homes should have the care necessary to reduce the onset of pressure ulcers (which are known to affect between eight and 10% of all people in acute hospital beds, [unpublished data from repeated surveys in Nottingham and Pennine Acute Hospitals NHS Trust])
- ▶▶ That those who have newly-occurring foot disease should be assessed within one working day by a professional who has the necessary experience, skills and contacts to determine the pathway of best care, and that the prompt advice is sought of a skilled multidisciplinary team when necessary. For in-patients also this referral should be routine and occur within one working day
- ▶▶ That those whose problem has resolved should remain under long-term specialist surveillance because (a) the incidence of recurrence is 40% at 12 months, and (b) the long-term prognosis is poor.

In this way, it is intended that the incidence of major amputation in the UK will fall — just as in Middlesbrough and Ipswich — by over four-fold. This will lead to an enormous improvement

in the health and well-being of people with diabetes. Failure to attempt to implement this programme will be indefensible.

On a personal level, the principle is even more simple: that each healthcare provider should be striving to ensure that every person with foot disease receives the care which they would want for themselves or a close relative. **WUK**

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