

Diabetic foot disease: Politics, podiatrists and postcode lotteries

Just over 50 years ago, postcodes were initiated in the UK to aid sorting of mail. Subsequently, the term “postcode lottery” emerged as a shorthand for situations in which services such as education and healthcare vary between geographical localities within a government’s boundary.

Recently a “postcode lottery” associated with rates of amputations attributable to the diabetic foot has been reported in England, where it would appear that amputation rates in the worst-performing area are in excess of five times higher than in the best-performing area (Diabetes UK, 2014a). This situation is not confined to foot amputations, instead extending to diabetes services in general. In their “State of the Nation” document published at the end of 2013, Diabetes UK reported extensive differences in diabetes care in England (Diabetes UK, 2013).

Coming 25 years after the lofty aspirations of the St Vincent Declaration were agreed, this report is very disappointing. That meeting of diabetes minds in a North Italian village called for equity of access to, and strong partnerships in, care for people with diabetes, as well as targeting a reduction in the numbers of limb amputations for “diabetic gangrene” by 50% over a 5-year period (see <http://bit.ly/1AgyoHX> [accessed 14.08.14]). In fact it would appear that there is no improvement in diabetes-related amputations in England over this 25-year time frame (Health and Social Care Information Centre, 2014). These figures, based on NHS data, show that the overall diabetes-related amputation rate has not improved at all, with 2.6 per thousand people with diabetes per year having a lower limb amputation.

In this editorial, I review the significance of diabetes-related lower-limb complications, dig deeper into the postcode comparisons, and ask what possible solutions exist.

Financial and human costs

Writing recently in *Diabetes & Primary Care*, Baroness Young described the concept of a “foot

attack” (Young, 2014). As the Chief Executive of the UK’s principal charity for diabetes advocacy, she is quite right to highlight the diabetic foot as a key concern, noting, for instance, that:

- Up to 80% of diabetes-related amputations are preventable, with optimum management.
- In excess of 6000 leg, foot or toe amputations are still being carried out each year on people with diabetes in England.

Approximately 50% of all foot amputations are performed in people with diabetes (Holman et al, 2012), and these can incur very high healthcare costs. The cost of diabetic foot care in 2010–11 was calculated to be £580 million, equating to almost 0.6% of NHS expenditure in England (Kerr et al, 2014). It is estimated that about 50% of this sum is spent on ulceration in primary and community settings. A considerable portion of this is incurred in inpatient ulcer care (estimated at £219 million) and amputation (£55 million).

These figures, while staggering in themselves, do not reflect the very considerable human cost of amputations and the pain associated with diabetic ulceration and neuropathy. In a review published in this edition of the *Journal* (starting on page 212), Dr Amir Aslam and colleagues reflect on the impact of painful diabetic neuropathy on quality of life, partially focusing on the physical and psychological distress associated with this condition.

In an overview on the psychological effects of amputations, Price (2004) explored quality of life in people with infection and diabetic foot ulceration, including those who had undergone surgery. In people who had not undergone an amputation, there tended to be a focus on pain, financial difficulties, general health and future functional capabilities at home or at work. Turning to the post-amputation setting, it was noted that, in one cohort, almost half of individuals were found to be at risk of psychiatric illness, with considerable morbidity in terms of poor social mobility and a strain on relationships. These are clearly issues that demand attention.



Colin Kenny

GP in Dromore, County Down,
Northern Ireland

Box 1. “CPR” for the diabetic foot (Stang and Leese, 2014).

Following the results of their audit, the Scottish Diabetes Foot Action Group introduced a national inpatient foot care campaign, called “CPR for Diabetic Feet”. This involves a strategy of foot “checks”, “protection” and “referral”. The campaign set out to ensure that all people with diabetes who are admitted to hospital have their feet checked on admission. Although this strategy was designed to be applied to inpatients, it would apply equally to primary care health professionals carrying out the foot checks required within the Quality and Outcomes Framework. Foot examination should focus on the presence of peripheral neuropathy, peripheral artery disease and abnormal foot anatomy, all of which may predict individuals at high risk of developing foot ulcers (Abbott et al, 2002).

Beyond the postcode

Do the figures behind the “postcode lottery” headlines reflect true variations in care? We know from the *NHS Atlas of Variation in Healthcare* (see <http://bit.ly/1oRp3Ty> [accessed 14.08.14]) that there are differences throughout England in the standards of diabetes care when judged against nine NICE key processes of diabetes care. There is also a difference in amputation rate between regions, although it is worth observing that the absolute numbers of amputations are small when limited geographical areas are considered, and this can distort differences. In a 2012 paper, investigators examined this issue, confirming a differential amputation rate that, interestingly, mirrored differences in rates of amputation not attributed to diabetes, suggesting that the variation seen may be related more to surgical approaches than to diabetes care (Holman et al, 2012). This pattern is partially confirmed by the fact that amputation rates do not necessarily align to areas of social deprivation as might be expected, although they are greater in areas where there is a relatively large black and minority ethnic group population.

In 2012, investigators in Scotland reported a falling incidence of amputation, perhaps reflecting a more integrated healthcare system (Kennon et al, 2012). Other countries are reporting a fall in their amputation rates (e.g. Van Houtum et al, 2004 [the Netherlands]). It is more difficult to get amputation data from the other devolved nations of the UK, although Diabetes UK reported that there were 330 amputations per year in Wales related to the diabetic foot, in a diabetes population numbering approximately 160 000 (Diabetes UK, 2012), and just under 200 per year in Northern Ireland for a diabetes population of around 73 000 (Diabetes UK, 2014b).

Solutions and interventions

In this edition of the Journal we also publish an announcement and description (on page 180) of the National Diabetes Foot Care Audit (NDFCA), which was launched back in July. The Health and Social Care Information Centre will manage this important audit in partnership with Diabetes UK and the National Cardiovascular Intelligence Network of Public Health England. The audit should document geographical differences in

foot amputations and perhaps identify regional differences in surgical practices in England and Wales. It may delineate the work of multidisciplinary foot care teams in different regions. It may also discover if nationally recommended foot care service structures, along with appropriate treatment such as those recommended in NICE guidelines on both peripheral vascular disease (NICE, 2012) and inpatient diabetic foot care (NICE, 2011), are in place and achieving desired outcomes. The Scottish Diabetes Foot Action Group (SDFAG) supported an audit of diabetes foot care in November 2013 (Information Services Division – Scotland, 2013), which revealed that 2.4% of inpatients with diabetes developed a new foot lesion while in hospital. More than half (57%) of inpatients reported that they had not had their feet checked on admission to hospital. Of all patients surveyed, 14% had a current foot ulcer, and only 65% of these individuals had been referred to a diabetes foot care team. In Northern Ireland, a diabetes foot strategy network has recently met to address problems in that nation.

“CPR”

Perhaps in response to the suggested “foot attack”, members of the SDFAG have suggested “CPR” for the diabetic foot (see *Box 1*).

Multidisciplinary teams

The evidence shows that with the provision of an integrated foot care pathway, trained staff in foot protection services in the community, and speedy access to multidisciplinary teams (MDTs) for the diabetic foot, amputations can be reduced by up to 62% (Krishnan et al, 2008). MRI angiography may prove to be important in the decision tree around amputations. So far, it is confined to tertiary referral centres but may become more widespread.

Podiatrists

Podiatrists deliver the bulk of diabetic foot care in the UK and are key members of any MDT. There is a *Podiatry Competency Framework for Integrated Diabetic Foot Care* (see <http://bit.ly/1t5Howk> [accessed 14.08.14]). This comprehensive document has begun the process of establishing standards of professional competence in delivering diabetic

“People with diabetic foot problems should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals.”

foot care, at all levels. Unfortunately, anecdotal evidence that I have heard suggests that the services of podiatrists are being restricted, with many people with diabetes only able to access a podiatrist once a year.

Education of people with diabetes and carers

Underpinning the NICE (2011) diabetic foot guidelines is the statement that “treatment and care should take into account patients’ needs and preferences.” Indeed, people with diabetic foot problems should have the opportunity to make informed decisions about their care and treatment, in partnership with their healthcare professionals. While this statement would appear to be irrefutable, two Cochrane database reviews might suggest caution about these interventions. One review found that there was no robust evidence supporting the idea that limited patient education alone is effective in achieving clinically relevant reductions in ulcer and amputation incidence (Dorresteijn et al, 2010). Another review found no high-quality research evidence evaluating complex interventions for preventing diabetic foot ulceration and insufficient evidence of benefit (Dorresteijn et al, 2012).

Conclusion

Diabetes UK is quite right to draw attention to the unacceptable rate of diabetic foot amputations in England, many of which may be avoidable. Equally, it is important to move beyond headline-grabbing statistics to a cooler analysis of data, which will hopefully emerge from the NDFA. Strong baseline data from Scotland and Northern Ireland would be useful.

Inevitably, solutions are, and will continue to be, complex and multifaceted. There is a need to learn from best practice, particularly in areas where amputation rates are falling. MDTs for the diabetic foot need to be developed more widely throughout the UK. These may offer an opportunity to standardise surgical and non-surgical practice. Additionally, the important role of podiatry should be championed where possible.

People with diabetes, irrespective of the condition’s type, need to be empowered to understand the importance of foot care, and to engage actively with their primary care health

professionals and local podiatrist. There are many examples of excellent practice within postcode areas throughout the UK, and the experiences there need to act as beacons of good practice for others. ■

Abbott CA, Carrington AL, Ashe H (2002) The North-West Diabetes Foot Care Study: incidence of, and risk factors for, new diabetic foot ulceration in a community-based patient cohort. *Diabet Med* **19**: 377–84

Diabetes UK (2012) *Diabetes UK Cymru welcomes launch of inquiry into diabetes services in Wales*. Diabetes UK, London. Available at: http://www.diabetes.org.uk/In_Your_Area/Wales/News2/ (accessed 14.08.14)

Diabetes UK (2013) *State of the Nation 2013: England*. Diabetes UK, London

Diabetes UK (2014a) *Amputation postcode lottery getting worse*. Diabetes UK, London. Available at: http://www.diabetes.org.uk/About_us/News/Amputation-postcode-lottery-getting-worse/ (accessed 14.08.14)

Diabetes UK (2014b) *Putting Feet First in Northern Ireland*. Diabetes UK, London. Available at: http://www.diabetes.org.uk/In_Your_Area/N_Ireland/Campaigning/Putting-Feet-First-in-Northern-Ireland/ (accessed 14.08.14)

Dorresteijn JA, Kriegsman DM, Assendelft WJ, Valk GD (2010) Patient education for preventing diabetic foot ulceration. *Cochrane Database Syst Rev* **10**: CD001488

Dorresteijn JA, Kriegsman DM, Valk GD (2012) Complex interventions for preventing diabetic foot ulceration. *Cochrane Database Syst Rev* **20**: CD007610

Health and Social Care Information Centre (2014) *Hospital Episode Statistics*. HSCIC, Leeds. Available at: <http://www.hscic.gov.uk/hes> (accessed 14.08.14)

Holman N, Young RJ, Jeffcoate WJ (2012) Variation in the recorded incidence of amputation of the lower limb in England. *Diabetologia* **55**: 1919–25

Information Services Division – Scotland (2013) *Inpatient and Day Case Activity*. ISD Scotland, Edinburgh. Available at: <http://www.isdscotland.org/Health-Topics/Hospital-Care/Inpatient-and-Day-Case-Activity/> (accessed 14.08.14)

Kennon B, Leese GP, Cochrane L et al (2012) Reduced incidence of lower-extremity amputations in people with diabetes in Scotland: a nationwide study. *Diabetes Care* **35**: 2588–90

Kerr M, Rayman G, Jeffcoate WJ et al (2014) Cost of diabetic foot disease to the National Health Service in England. *Diabet Med* **1 Jul** [Epub ahead of print]

Krishnan S, Nash F, Baker N (2008) Reduction in diabetic amputations over 11 years in a defined U.K. population: benefits of multidisciplinary team work and continuous prospective audit. *Diabetes Care* **31**: 99–101

NICE (2011) *Diabetic foot problems: Inpatient management of diabetic foot problems* (Clinical Guideline 119). NICE, London. Available at: <http://www.nice.org.uk/guidance/cg119> (accessed 14.08.14)

NICE (2012) *Lower limb peripheral arterial disease: diagnosis and management* (Clinical Guideline 147). NICE, London. Available at: <http://www.nice.org.uk/guidance/cg147> (accessed 14.08.14)

Price P (2004) The diabetic foot: Quality of life. *Clin Infect Dis* **39** (Suppl 2): S129–31

Stang D, Leese GP (2014) CPR for diabetic feet. *The Diabetic Foot Journal* **17**: 16–8

Van Houtum WH, Rauwerda JA, Ruwaard D (2004) Reduction in diabetes-related lower-extremity amputations in The Netherlands: 1991–2000. *Diabetes Care* **27**: 1042–6

Young B (2014) Preventing a “foot attack”. *Diabetes & Primary Care* **16**: 62