

Journal club: Diabetes and foot disease – walking not running

For healthcare professionals working with people who have diabetes, these are very exciting times. We are able to tell people about a wealth of new treatments and technology to making living with diabetes easier. We are able to talk about the potential to prevent the progression of the disease and possibly, in some individuals, induce remission. We are at a point where we should see a step-change in the way that diabetes impacts on individuals' lives.

The future looks bright and we have good reason to be optimistic. However, we do need to remember that, although we have the *potential* to significantly impact on these diseases and their complications, at the moment this is not always translating into significantly improved outcomes. This is certainly true when considering the delivery of care to people with diabetes and foot disease. Somewhere in the delivery of foot care, we are not translating the results seen in research studies into overall improvement at the population level.

The recent paper by a group of researchers in Melbourne and Brisbane, Australia, makes for sobering reading (Quigley et al, 2022). Perhaps the picture is not quite as bright as we think. We need to understand why, with the tools we now have available to us, we are failing to see any trend of improvement in overall care delivered.

The authors describe a recent analysis of diabetes registry data that covers all of the East coast states of Australia (accounting for 80–90% of the country's total population), together with records of admission to hospital. Australians identified as Aboriginal or Torres Strait Islanders were excluded from the study as health data for this group is recorded elsewhere. Recent studies from other developed nations had suggested improvements in foot care as evidenced by reductions in amputation rates. The authors argue that reporting amputation rates alone can result in a confusing picture, as the overall term amputation can include a variety of procedures performed for a

variety of reasons. Hospitalisation rates for each of the foot-related complications was felt to give a more accurate picture.

Unfortunately, the conclusion of the paper is that diabetes-related foot disease admissions remain high and are increasing for both type 1 and type 2 diabetes. Although the more detailed analysis suggested stability or reductions in below-knee and above-knee amputations, there was an increase in all other categories of foot complications. The results may partly be explained by people with diabetes living longer and, therefore, having more years exposed to diabetes, but this did not fully explain the results.

Nationwide screening and management programmes have been established in both Australia and the UK to prevent and manage foot disease in the community. This does not require complex technology or expensive therapies, but it does need regular and routine clinical care provided by health professionals. Hospitalisation rates reflect the success or otherwise of these programmes. The authors feel that their results from Australia can be extrapolated to other developed countries, and it seems likely to me that the results in this paper would be mirrored if the same work was performed in the UK.

In 2014, the UK was spending just under a billion pounds on the management of diabetic foot disease (Kerr et al, 2019). On the evidence of Matthew Quigley and colleagues, these costs will have increased significantly. Although new treatments capture the headlines, there is an ongoing need to provide basic clinical care. It would seem there is plenty more that can, and should, be done. ■

Read a summary of the article on the next page.

Kerr M, Barron E, Chadwick P et al (2019) The cost of diabetic foot ulcers and amputations to the National Health Service in England. *Diabet Med* **36**: 995–1002

Quigley M, Morton JI, Lazzarini PA et al (2022) Trends in diabetes-related foot disease hospitalizations and amputations in Australia, 2010 to 2019. *Diabetes Res Clin Pract* **194**: 101189



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Increasing rates of diabetic foot hospitalisations in Australia

The present study investigated trends in the incidence of hospitalisation for diabetic foot disease (including ulceration, cellulitis, osteomyelitis, peripheral artery disease and neuropathy) and amputations in Australia from 2010 to 2019. Data on 70 766 people with type 1 diabetes and 1 087 706 with type 2 diabetes, from the three most populous states as well as the Australian Capital Territory, were included.

Over the study period, among the total cohort, there were 158 434 hospitalisations for diabetic foot disease, 31.6% of which were for ulceration, 28.5% for cellulitis, 17.5% for peripheral artery disease, 14.6% for neuropathy and 7.8% for osteomyelitis. There were also 22 705 amputations, 80% of which were of the toe or foot.

Among people with type 1 diabetes, age-adjusted rates of hospitalisations for diabetic foot disease increased from 20.8 to 30.5 per 1000 person-years over the study period. Significant annual percent changes

were observed for ulceration (13.3% from 2015 to 2019), neuropathy (8.7% throughout the whole study period), peripheral artery disease (7.7% throughout) and osteomyelitis (5.6% throughout), whereas rates of cellulitis and amputations remained relatively stable. In general, males had higher rates of hospitalisation than females, and people with type 1 diabetes had higher rates than those with type 2 diabetes.

Sensitivity analysis in the type 2 cohort suggested that increased duration of diabetes accounted for some of the observed increase in hospitalisations; however, they highlight specific strategies that could help to reduce this, including enhanced cardiovascular risk management in primary care, more ambulatory multidisciplinary diabetic foot clinics in secondary care, and more appropriate antibiotic usage and revascularisation procedures in specialised care.

[Read the study in full here](#)