Ghosts of patients past

Matthew Young

As I write this with a week to go until Christmas, my "bah humbug" nature is hating leaving for work in the dark and then coming home in the dark. Particularly when I have spent the whole day under artificial lights and breathing hospital air; never a good thing with all the norovirus around. But the end of the year also brings back memories of patients lost and those whose time is yet to come, and this makes me question if we will ever truly reduce the enormous death toll of diabetic foot ulceration.

The past year has seen many foot specialists call for renewed vigour in managing diabetic foot ulceration. They have suggested renaming an ulcer "a foot attack", similar to the way in which many people call myocardial infarctions "heart attacks" and have recently begun referring to strokes as "brain attacks" to stress the importance of rapid action to minimise damage. Cardiologists and stroke physicians have talked of "time being tissue" (heart or brain cells) and diabetic foot clinicians can legitimately remark that "time means toes", or something similar. In Scotland, the concept of foot "CPR" (Check, Protect, Refer) initiated by Duncan Stang (Scottish Diabetes Foot Coordinator), Graham Leese (Consultant Physician, Nine Wells), and the Foot Action Group is being developed for launch next year to further promote this theme.

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However, it is not just limbs and toes that are being lost. Finally, the message that diabetic foot ulceration carries a mortality rate that is greater than many cancers is reaching wider awareness. A recent meta-analysis (Brownrigg et al, 2012) with over 81,000 patient years of follow-up has shown that patients with ulcers are twice as likely to die during follow-up than non-ulcer patients, and that most of this excess mortality can be attributed to cardiovascular death. Such information is unfortunately not that new. Hansson et al (1987) described exactly this two-fold increase in death rates in foot and leg ulcer patients. Around 20 years ago, Apelqvist et al (1993) reported that 5-year mortality among amputees with diabetes stood at 73%, and 42% in ulcer patients without amputation. The Apelqvist et al rates were four- and two-times the age- and sex-matched mortality rates for the general population at the time, respectively. A trend was forming and has been carried through in studies since then.

It would be reasonable to expect that these historical mortality data must have improved given all the statins, and blood pressure reduction recommendations for patients with diabetes, not to mention attempts to improve glycaemic control, since the results of various lipid trials and national guidelines. Unfortunately, this is not the case, as Morbach et al (2012) have demonstrated. In their recent study, mortality rates from diabetic foot ulceration in the 21st century were found to have hardly changed, with 45.8% 5-year and 70.4% 10-year mortality rates, despite multidisciplinary care being offered in an organised centre (please turn to page 168 of this issue of *The Diabetic Foot Journal* for a detailed summary of Morbach et al [2012] and further commentary on their findings).

This may at first appear counter-intuitive, and yet the evidence is there. There are many explanations for this. First, the diabetic foot population has a high prevalence of pre-existing, and probably additional, sub-clinical, cardiovascular and cerebrovascular disease at presentation. Micro- and macro-proteinuria, together with established renal failure, are more prevalent in foot ulcer patients. Medial arterial

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calcification and systolic blood pressure is higher than average in foot ulcer patients. Diabetes control is also less effective in patients with ulcers than the general diabetes population. All of these factors are recognised to increase mortality. When the additional factors of lower mood and even transient Staphylococcal bacteraemia are added, it is clear that there are many obstacles to overcome to reduce death rates in ulcer patients.

Cardiovascular disease prevention therapies are widely recognised as being effective and their impact is documented. However, Andrikopoulos et al (2012) is just the latest to show that prescription rates following myocardial infarction, when efficacy should be expected to be maximal, do not reach 90%, and patient treatment continuation rates are even lower. It is not surprising then that among patients with diabetic foot ulceration, where knowledge of cardiovascular mortality is still growing and few, if any, patients realise the impact that ulceration has on their life expectancy (Robbins et al, 2008), treatment rates and adherence will be lower and, therefore, outcomes poorer.

So far only one historical controlled and relatively small, study from my own unit (Young et al, 2008) has demonstrated that aggressive cardiovascular risk management in foot ulcer patients can reduce 5-year mortality. According to www.controlled-trials.com, there are no registered studies ongoing to further examine mortality and foot ulceration. So this is the only evidence that we have available at present. However, without directly using the very positive results in my own study, I would propose a change to the way we look at this group of patients.

If we extrapolate from the mortality rates in diabetic foot ulcer patients and those following myocardial infarction, which are similar; if we anticipate that the main cause of death in foot ulcer patients will be cardiovascular, which it is; and if we assume that the impact of cardiovascular secondary prevention with anti-platelet agents, statins, ACE inhibitors and beta-blockers will be similar – which has not been proven, but my study suggests is possible – then it is beholden on each and every one of us to ensure that all of our diabetic foot ulcer patients are treated with the best cardiovascular secondary prevention measures possible, including drugs, smoking cessation, and improved diabetes management.

In my view, a foot ulcer is not just a foot attack, it is the same (or worse) than a heart attack and it is time we started to treat the cardiovascular outcomes as seriously as the wound. ■

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