

## **Better prognosis for diabetic foot syndrome-good news in 2008**

### **Background**

Foot ulcers are one of the main complications of diabetes, with a 15% lifetime risk in all diabetic patients. The incidence of diabetic foot ulcer (DFU) is 1.0% to 4.0% and their prevalence is between 5.3% and 10.5%.<sup>1</sup> Approximately 20% of hospital admissions among diabetic patients are the result of foot problems. Without adequate management, there is a high risk of infection, gangrene, amputation, and death. Over 50% of major amputations in the UK are performed in patients with diabetes, and within 3 years of amputation, 50% of patients will die. A multidisciplinary team is mandatory for diabetic patients with foot ulcers, who benefit from accurate and prompt assessment, diagnosis, treatment, and long-term follow-up in order to conserve the foot. Diabetes is the leading cause of lower extremity amputation (LEA) and the rate of LEA among diabetic patients has been 40 times higher than that in nondiabetics.

### **Good news in 2008**

Two recent reports<sup>2,3</sup> from the UK indicate that the rate of LEA in diabetic patients has been dramatically reduced in the last 5 to 10 years. Krishnan et al<sup>2</sup> reported an impressive reduction in diabetic amputations over 11 years in a defined UK population as a beneficial result of multidisciplinary teamwork and continuous prospective auditing. The incidence of major amputations fell by 62%, from 7.4 to 2.8 per 100 000 of the general population. Total amputation rates also decreased (by 40.3%), but to a lesser extent due to a small increase in minor amputations. Expressed as incidence per 10 000 people with diabetes, total amputations fell by 70%, from 53.2 to 16.0, and major amputations fell by 82%, from 36.4 to 6.7.

Canavan et al<sup>3</sup> have reported longitudinal (1995-2000) population-based data on LEA, both for diabetes-related LEA and non-diabetes-related LEA, in the South Tees area of the UK. Over 5 years there were 454 LEAs (66.3% men), of which 223 were diabetes related (49.1%). In the diabetic patients, LEA rates per 100 000 people went from 564 in 1995 to 176 in 2000. In nondiabetic patients, LEA rates per 100 000 people increased from 12.3 in 1995 to 22.8 in 2000. In 1995, the relative risk of an LEA for a diabetic patient was 46-fold higher than for a nondiabetic patient, but this decreased to only 7.7-fold higher in 2000. The biggest improvement in LEA incidence was seen in the reduction of repeat major diabetes-related LEA.

Game and Jeffcoate<sup>4</sup> examined the use of surgery and assessed the response to nonsurgical management of osteomyelitis of the foot in 147 diabetic patients with a mean age of 64.7 years. Surgery was undertaken because of life- or limb-threatening infection, or failure to respond to antibiotic therapy, in 34 (23%) patients (minor amputation in 28 patients and major amputation in 6 patients). The remaining 113 patients were managed nonsurgically. Of all these 113 patients whose infection was initially managed without surgery, apparent remission was achieved with antibiotics alone in 93 (82.3%). As these observations were made in an unselected case series, they give more insight into the respective roles of surgical and nonsurgical management. The results confirm that although urgent surgery is indicated in some patients, nonsurgical management of those

without limb-threatening infection is associated with a high rate of apparent remission.

Very recently, Young et al<sup>5</sup> reported improved survival for diabetic foot ulcer patients in Scotland from 1995 to 2008. The 5-year mortality was reduced by 38% in neuroischemic patients and 47% in neuropathic patients (both  $P < 0.001$ ) and this improvement seems to be at least in part explained by the new aggressive cardiovascular risk policy.

**The traditional approach to treatment of chronic osteomyelitis has been surgical resection of infected and necrotic bone. But new classes of antibiotics have both the required spectrum of activity and the capacity to penetrate and concentrate within the infected bone. Recently, several observations have been published of osteomyelitis remission following nonsurgical management with a prolonged course of antibiotics. Lastly, bone culture-based antibiotic therapy is a factor predictive of success in diabetic patients treated nonsurgically for osteomyelitis of the foot.<sup>6</sup> Prospective trials should be undertaken to determine the relative roles of surgery and antibiotics in managing diabetic foot osteomyelitis.**

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**References:**

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