

# The Forgotten Complication

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Despite affecting as many as 50% of all diabetic individuals, diabetic peripheral neuropathy (DPN) is the chronic complication that is often least addressed by health care providers. This is partly because of the experience many of us have shared of having little success with its treatment and because of a lack of awareness of available treatment strategies. Yet lack of knowledge is not an acceptable reason for failing to address this problem aggressively.

Although many serious chronic complications affect people with diabetes, foot complications are the greatest burden. As many as 40–60% of lower extremity amputations (LEAs) are related to DPN.<sup>1</sup> In the United States, more than 50,000 diabetes-related LEAs are performed yearly.<sup>2</sup> Even short of amputations, DPN limits mobility, impairs sleep, hinders the enjoyment of leisure time activities, and affects patients' overall quality of life. Amputations are clearly associated

with loss of independence and increased mortality.

Early symptoms of DPN may be subtle and overlooked unless providers specifically question patients about them. Not all patients with DPN experience pain and numbness. In fact, some patients will have loss of normal sensation as a result of nerve damage and hypofunction and will not be aware of their disability until injury and ulceration have occurred. DPN is a progressive disorder that may actually begin before any

alteration in sensation is detected.

Nearly all LEAs related to diabetes are preceded by a foot ulcer. As neuropathy leads to loss of feeling in the feet, deformities may develop, and patients experience minor trauma that they are unaware of. Many foot ulcers would be avoided by regular examination of the feet, access to appropriate care, and use of proper footwear. Although DPN is the most important risk factor for developing a foot ulcer, the prevalence of peripheral vascular disease is high in this population, and it contributes to increased infection and poor wound healing.

Diabetes-related foot problems represent a significant economic burden, especially if LEAs are associated with long-term hospitalization, need for rehabilitation, prosthetics, social services, and home care. The direct cost of a single LEA is estimated at \$30,000–60,000. Additionally, indirect costs exist related to loss of employment, productivity, and quality of life. Thus, the total annual cost

for care of the diabetic foot in the United States is estimated at \$4 million.<sup>3,4</sup>

Among other available sources of information, the International Working Group on the Diabetic Foot published practical guidelines in 2000 that may be useful to keep in mind for the management of the diabetic foot.<sup>5</sup> The guidelines call for regular foot inspection and examination; identification of the at-risk foot; education of patients, families, and health care providers; efforts to ensure that patients have proper footwear; and provision of appropriate treatment to prevent ulceration.

It is because of the recognition of the gaps in our understanding of DPN and the available tools for treatment that this issue of *Clinical Diabetes* includes a comprehensive review of DPN written by Andrew J.M. Boulton, MD, DSc(Hon), FRCP, a leading international expert in this area (p. 9). The journal's editorial team hopes this article will serve as an informative and practical

resource to increase knowledge about DPN evaluation and treatment and provide a useful tool to refer to when dealing with patients with this most difficult-to-manage complication.

## REFERENCES

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- <sup>3</sup>Apelqvist J, Ragnarsson-Tennvall G, Persson U, Larsson J: Diabetic foot ulcers in a multidisciplinary setting: an economic analysis of primary healing and healing with amputation. *J Int Med* 235:463–471, 1994
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