



Review Article

The Silent Progression Diabetic Peripheral Neuropathy, Patient Awareness, and Clinical Management

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ABSTRACT:

Diabetic peripheral neuropathy (DPN) is a predominant microvascular complication of diabetes mellitus, affecting nearly half of all patients over the course of their disease [1]. Despite its prevalence, up to 50% of DPN cases remain asymptomatic in the early stages, making the condition a silent precursor to severe complications, including diabetic foot ulcers and lower-extremity amputations [2]. This article reviews the epidemiological burden of DPN, the pronounced deficit in patient awareness regarding nerve health, and the current evidence-based approaches to screening and pharmacological management.

Keywords: Diabetic Peripheral Neuropathy (DPN); Patient Awareness; Painful Diabetic Neuropathy (PDN); Diabetes Complications; Preventive Foot Care; Clinical Screening; Pharmacological Management; Health Literacy.

1. INTRODUCTION

Diabetic neuropathy encompasses several neuropathic syndromes, with distal symmetric polyneuropathy (DSPN) being the most common presentation [1, 3]. Chronic hyperglycemia induces metabolic cascades that result in oxidative stress, ultimately damaging both the nerve fibers and the vasa nervorum (the small blood vessels supplying the nerves) [4].

The global prevalence of DPN is staggering. Current epidemiological data indicate that approximately 50% of patients with long-standing diabetes will develop neuropathy over their lifetime [5]. A recent cross-sectional study evaluating rural diabetic populations found the prevalence of DPN to be up to 42.0%, depending on the diagnostic criteria utilized, with advancing age and prolonged diabetes duration serving as the most significant independent risk factors [3]. Because DPN is intrinsically linked to the duration of diabetes and overall glycemic exposure, the growing global incidence of both Type 2 and early-onset Type 2 diabetes forewarns a substantial future healthcare burden [4, 5].

2. THE CRITICAL GAP IN PATIENT AWARENESS

A major clinical hurdle in the prevention of DPN-related complications is the severe lack of patient awareness. Because nerve damage happens gradually, early stages are frequently painless. Up to 50% of affected individuals may be entirely asymptomatic, falsely believing their diabetes is well-managed while microvascular damage progresses unchecked [2, 6].

Recent literature underscores this educational deficit. Studies assessing patient knowledge reveal that despite high rates of diabetes, a minority of patients report an adequate understanding of DPN [7]. Many patients are unable to recognize classic symptoms such as tingling, burning, or "pins and needles," and lack awareness regarding the importance of daily preventive foot care and diabetes self-care activities [7, 8]. This lack of awareness directly correlates with negative clinical outcomes. When a patient cannot feel a minor mechanical injury—such as a blister from ill-fitting footwear—and simultaneously lacks the education to perform daily visual foot inspections, the risk for

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secondary infection and subsequent amputation rises exponentially [6, 8].

3. CLINICAL SCREENING AND EARLY INTERVENTION

Given the high rates of asymptomatic DPN, early objective screening by primary care providers is paramount. Current clinical guidelines advocate for proactive screening rather than waiting for patients to self-report neuropathic pain [2, 9].

According to the American Diabetes Association's most recent *Standards of Care in Diabetes* (2026), screening should be conducted as follows [2]:

- **Type 2 Diabetes:** Comprehensive assessment at the time of initial diagnosis and annually thereafter.
- **Type 1 Diabetes:** Comprehensive assessment five years after initial diagnosis and annually thereafter.
- **Clinical Method:** Annual screening should include 10-gram monofilament testing to assess protective sensation, combined with at least one other test (temperature or vibration sensation assessments) [2].

4. PHARMACOLOGICAL MANAGEMENT OF PAINFUL DPN

While optimizing glycemic control is the only proven method to delay the progression of underlying nerve damage [8], approximately 30% to 50% of patients with DPN will develop painful diabetic neuropathy (PDN), requiring symptomatic intervention to preserve quality of life [10].

The international standard of care prioritizes specific classes of neuroactive medications, particularly serotonin and norepinephrine reuptake inhibitors (SNRIs) and gabapentinoids [9].

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2. American Diabetes Association Professional Practice Committee. 12. Retinopathy, Neuropathy, and Foot Care:

- **Duloxetine (SNRI):** Extensively validated in clinical trials, duloxetine has been proven highly effective for managing DPN pain profiles, significantly reducing 24-hour average pain scores. It serves as a recommended first-line treatment [10].
- **Pregabalin (Gabapentinoid):** An anti-epileptic drug that binds to calcium channels in the central nervous system, reducing the release of pain-inducing neurotransmitters. It is routinely recommended as a tier-one monotherapy [10].

Recent systematic reviews and meta-analyses suggest that in refractory cases, combination therapy utilizing both pregabalin and duloxetine may improve short-term pain scores compared to monotherapy, though providers must closely monitor for overlapping central nervous system side effects such as somnolence [11]. Crucially, the routine use of opioid analgesics is strongly discouraged due to high risks of dependency and a lack of long-term efficacy in treating chronic neuropathic pain [2, 9].

5. CONCLUSION

Diabetic peripheral neuropathy is a pervasive complication characterized by a dangerous intersection: high clinical prevalence paired with critically low patient awareness. To mitigate the catastrophic consequences of advanced DPN, healthcare systems must pivot toward aggressive, early patient education. Empowering patients to recognize the subtle symptoms of nerve damage—and embedding routine, objective neurological screenings into standard primary care—remains the most effective strategy to preserve lower-extremity health in the diabetic population.

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