

THE CHALLENGES OF DIABETIC POLYNEUROPATHY

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Abstract. Diabetic polyneuropathy (DPN) is a prevalent and debilitating complication of diabetes mellitus, affecting a significant portion of patients with both type 1 and type 2 diabetes. This article presents a brief update on the challenges associated with DPN, with a specific focus on Uzbekistan. It explores the increasing prevalence of diabetes in the country, the diagnostic and treatment barriers, and the limitations of the healthcare system in addressing DPN. Despite the availability of effective management options, diagnostic delays, limited access to specialized care, and high treatment costs contribute to the suboptimal management of DPN. The article also highlights the need for improved screening protocols, better access to diagnostics, and targeted public health interventions to reduce the burden of DPN in Uzbekistan. Enhancing healthcare provider education, improving access to medication, and fostering collaboration with international health organizations are suggested as key strategies for tackling the challenges of DPN in the region.

Keywords: Diabetic polyneuropathy, diabetes mellitus, Uzbekistan, healthcare challenges, screening, neuropathy management, public health, diagnostics, treatment barriers.

INTRODUCTION

Diabetic polyneuropathy (DPN) is a common and debilitating complication of diabetes mellitus (DM) that affects a significant portion of individuals with both type 1 and type 2 diabetes. The condition results from damage to peripheral nerves caused

by prolonged hyperglycemia, leading to symptoms such as numbness, tingling, pain, and, in severe cases, motor dysfunction and disability. DPN is associated with an increased risk of falls, ulcers, infections, and amputations, making it a significant public health issue.

In Uzbekistan, as in many other low- and middle-income countries, the prevalence of diabetes and its complications, including DPN, is on the rise. Despite advances in diabetes care, managing diabetic complications remains a challenge due to limited access to specialized care, diagnostic resources, and effective treatment options. This brief update aims to examine the current status of DPN in Uzbekistan, the challenges faced by healthcare providers, and potential strategies for improving the management of this condition.

MATERIALS AND METHODS

This update is based on a review of recent literature, epidemiological data, and expert opinions concerning the challenges of diabetic polyneuropathy in Uzbekistan. A search was conducted using academic databases such as PubMed, Google Scholar, and local Uzbek medical journals, focusing on studies published between 2010 and 2023. We also analyzed reports from Uzbekistan's Ministry of Health and international health organizations to understand the prevalence of diabetes and DPN, healthcare system limitations, and public health strategies.

In addition to reviewing secondary data, qualitative insights were gathered from healthcare professionals, including diabetologists and neurologists, practicing in Uzbekistan's major medical centers. These insights helped identify the specific barriers in diagnosing and treating DPN.

RESULTS AND DISCUSSION

Prevalence and Risk Factors:

The prevalence of diabetes in Uzbekistan has been steadily increasing. According to the World Health Organization (WHO), approximately 7.5% of the adult population in Uzbekistan suffers from diabetes. The incidence of DPN among individuals with diabetes is reported to be between 30% and 50%, with higher rates observed in those

with poor glycemic control, long-duration diabetes, and associated comorbidities such as hypertension and obesity.

Diagnostic Challenges:

Diagnosis of DPN in Uzbekistan is often delayed or missed due to a combination of factors. Primary care providers may have limited access to advanced diagnostic tools such as nerve conduction studies (NCS) or quantitative sensory testing (QST), which are essential for early detection. Furthermore, healthcare workers in rural regions may have insufficient training in recognizing the early signs of neuropathy, and there is a lack of standardized screening protocols for diabetic patients. As a result, DPN is often diagnosed at more advanced stages, when nerve damage is irreversible.

Treatment and Management:

While there are effective treatments available for managing DPN, such as glycemic control, pain management (e.g., anticonvulsants and antidepressants), and lifestyle modifications, access to these therapies is inconsistent across the country. In urban centers, specialized clinics offer comprehensive care, but rural areas often face a shortage of trained specialists and resources. Moreover, the high cost of medications and treatments, including neuropathic pain medications, remains a significant barrier for many patients. The lack of multidisciplinary care, including podiatric and neurological consultations, further exacerbates the challenges.

Healthcare System Limitations:

The Uzbek healthcare system, although improving, faces several limitations in addressing DPN. There is a shortage of healthcare professionals specialized in diabetes management and neuropathy. Furthermore, diabetes management is often focused on glycemic control alone, with less attention given to the prevention and treatment of complications like DPN. Inadequate healthcare infrastructure, especially in rural areas, exacerbates these issues, limiting patients' access to timely diagnosis and effective treatment.

The growing burden of diabetic polyneuropathy in Uzbekistan presents significant challenges for both healthcare providers and patients. The rising prevalence

of diabetes, coupled with the inadequate infrastructure and resources to address its complications, highlights the need for urgent reforms in the healthcare system.

Several strategies could help address the challenges of DPN in Uzbekistan:

1. **Enhanced Screening and Early Diagnosis:**

Establishing standardized screening protocols for DPN in diabetes clinics across the country is essential. Early detection, through regular screening for neuropathy, could prevent the progression to more severe stages of the disease. Primary care providers should be trained to recognize the signs and symptoms of neuropathy and refer patients for specialized care when necessary.

2. **Improved Access to Diagnostics and Treatment:**

Expanding access to advanced diagnostic tools, such as nerve conduction studies and quantitative sensory testing, is vital for the accurate diagnosis of DPN. In addition, the government and healthcare providers should work to ensure that patients have access to affordable neuropathy treatments, including pain management options and medications.

3. **Education and Training for Healthcare Providers:**

Regular education and training programs for healthcare professionals in Uzbekistan should be implemented to increase awareness about the early detection and management of diabetic complications, particularly polyneuropathy. This includes not only physicians but also nurses, general practitioners, and other frontline healthcare workers.

4. **Public Health Campaigns:**

Raising awareness about the importance of diabetes management and the prevention of complications, such as DPN, through public health campaigns can help improve patient outcomes. These campaigns should target both the general public and people with diabetes, educating them about proper foot care, regular screening, and the importance of glycemic control.

5. **Collaboration with International Organizations:**

Collaborating with international organizations, such as the WHO and the International

Diabetes Federation, can provide Uzbekistan with the technical assistance and resources necessary to improve its diabetes care infrastructure and implement best practices for DPN management.

CONCLUSION

Diabetic polyneuropathy represents a significant and growing challenge in Uzbekistan, driven by the increasing prevalence of diabetes and the healthcare system's limitations in addressing the condition. To reduce the burden of DPN, Uzbekistan must prioritize early diagnosis, improve access to treatment, and strengthen its healthcare infrastructure. With targeted interventions, such as enhanced screening programs, increased awareness, and better access to specialized care, the country can mitigate the impact of this debilitating complication and improve the quality of life for individuals with diabetes.

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