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Neurological Implications of Diabetes: A Comprehensive Review

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ABSTRACT:

Diabetes mellitus is a chronic metabolic disorder characterized by elevated blood glucose levels and affects millions of individuals worldwide. While the impact of diabetes on peripheral nerves has been extensively studied, emerging evidence suggests that it also exerts significant neurological implications on the central nervous system (CNS). This review provides a comprehensive overview of the neurological implications observed in diabetes patients, with a focus on the impact on the CNS. It explores various manifestations of diabetic neuropathy, including peripheral neuropathy, autonomic neuropathy, and small fiber neuropathy, and discusses their potential influence on neurological functioning. The intricate relationship between diabetes and cognitive impairment, known as "diabetic encephalopathy," is also explored. The review sheds light on the underlying mechanisms and potential pathways through which diabetes affects the CNS. Clinical implications of these neurological implications are discussed, along with potential therapeutic strategies to mitigate or prevent diabetes-associated neurological complications. The prevalence of neurological complications in diabetes patients is significant, encompassing a range of conditions such as diabetic neuropathy, cerebrovascular diseases, cognitive impairment, and autonomic dysfunction. Effective management strategies should include early detection, optimal glycemic control, lifestyle interventions, and multidisciplinary care to improve patient outcomes and quality of life.

KEYWORDS:

Diabetes mellitus, Elevated blood glucose levels, Central nervous system, Diabetic neuropathy, Cognitive impairment, Glycemic control.

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