Hyponatremia in Parkinson's Disease: The Impact of Carbidopa-Levodopa Therapy

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Received: 2024-07-23

Accepted: 2024-09-16

Published: 2025-06-30

Introduction: Parkinson's Disease is a progressive neurodegenerative disorder marked by the loss of dopamine-producing neurons in the substantia nigra, a key area of the brain involved in movement regulation. Managing patients with Parkinson's disease (PD) involves varied treatments, although the progressive nature of PD and the side effects associated with long-term use of these medications present ongoing challenges. Treatment of PD primarily involves the restoration of dopamine function in the brain. Carbidopa-levodopa, which increases brain dopamine levels, remains the most effective method for managing motor symptoms but often leads to complications like effectiveness fluctuations and dyskinesias development over time. Few cases from the literature have demonstrated an association between Levodopa and hyponatremia.

Case Presentation: This case study involves a 69-year-old male with PD who developed gradual asymptomatic hyponatremia after starting Carbidopa-levodopa. The adverse effects most reported from carbidopa-levodopa are dyskinesias, nausea, vomiting, insomnia, impulse control disorders, and orthostatic hypotension, but hyponatremia is not typically seen. The patient's sodium levels, initially stable, declined significantly over several months while on stable carbidopa-levodopa regimen. Hyponatremia work-up ruled out other causes of hyponatremia and carbidopa-levodopa induced SIADH was determined. His sodium levels improved to pre-treatment levels with fluid restriction and increased protein intake without interruption in Carbidopa-levodopa therapy.

Conclusion: This case highlights the need for regular monitoring of sodium levels in PD patients on dopaminergic medications with timely and multidisciplinary strategies to prevent potentially serious complications. Assessing dietary intake, fluid status, and potential medication interactions monthly can ensure that PD treatment does not inadvertently lead to additional complications. This comprehensive approach is crucial for enhancing the overall management and well-being of patients with PD. Further research is needed to confirm these findings and refine treatment protocols for managing hyponatremia in PD patients.

Keywords: Hyponatremia, Parkinson's Disease, Levodopa

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