WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Case Report: Management Challenges in an 83-Year-Old Male with Type 2 Diabetes Mellitus, Hypertension, and Parkinsonism

N. Sriharsha[1], G. Shriya[2], V. Gayathri[3], Dania Saleem[4]

[1 2 3 4] Vaageswari College of Pharmacy, *India.*

ABSTRACT:

Background:
Coexisting type 2 diabetes mellitus (T2DM), hypertension, and parkinsonism in elderly patients present a clinical challenge due to increased risks associated with aging, polypharmacy, and multiple disease interactions.

Case Presentation:

An 83-year-old male with a 40-year history of T2DM and hypertension, and newly diagnosed parkinsonism, presented with poor glycemic control. He was receiving metoprolol succinate 12.5 mg and had recently started levodopa 100 mg + carbidopa 10 mg. On examination, he was hypertensive and tachycardic. Lab results showed elevated fasting (259 mg/dL) and pre-prandial glucose (335 mg/dL) with normal renal function.

Conclusion:
This case underscores the importance of individualized, multidisciplinary care in elderly patients with chronic comorbidities. Incorporating lifestyle interventions and vigilant monitoring is key to optimizing outcomes.

Keywords : Type 2 Diabetes Mellitus, Hypertension, Parkinsonism, Polypharmacy, Geriatrics, Lifestyle Modifications

Introduction

With increasing life expectancy, the prevalence of multimorbidity is rising. T2DM and hypertension are common chronic conditions in the elderly and are often complicated by neurodegenerative diseases such as Parkinson's disease (PD). Each condition alone demands careful management; together, they increase the complexity of therapeutic choices and risk of adverse outcomes.

Elderly patients require tailored treatment plans to accommodate for altered pharmacokinetics and risks such as orthostatic hypotension, falls, and drug interactions. According to the American Diabetes Association (ADA) and European Society of Cardiology (ESC), blood pressure and glycemic targets should be individualized to reduce complications without compromising safety (1,2).

Case Presentation

Patient Profile:
An 83-year-old male presented to the outpatient clinic for evaluation of uncontrolled blood glucose levels.

Past Medical History:
Type 2 diabetes mellitus for 40 years
Hypertension for 40 years
Parkinsonism diagnosed 6 days prior

Current Medications:
Metoprolol succinate (Met XL) 12.5 mg once daily
Levodopa 100 mg + Carbidopa 10 mg twice daily

Clinical Findings:
Blood pressure: 150/80 mmHg
Pulse rate: 120 bpm
SpO_2: 96%
Mild resting tremor of right upper limb
- No orthostatic hypotension observed

Investigations:
Fasting Blood Sugar: 259 mg/dL
Pre-Prandial Blood Glucose: 335 mg/dL
Serum Creatinine: 1.0 mg/dL
ECG: Sinus tachycardia
eGFR: Preserved renal function

Assessment:
Uncontrolled T2DM likely exacerbated by recent parkinsonism diagnosis, autonomic dysregulation, and inadequate beta-blockade.

Discussion

Co-management of diabetes and Parkinsonism requires careful consideration. Studies have shown that T2DM may be associated with increased risk and progression of Parkinson's disease due to insulin resistance and mitochondrial dysfunction (3). Furthermore, Parkinson's disease can negatively affect glucose metabolism via impaired autonomic regulation and altered dietary intake (4).

Levodopa therapy may contribute indirectly to glycemic variability by affecting gastric emptying and increasing carbohydrate consumption. Tachycardia observed in this case could be attributed to levodopa or insufficient metoprolol dosing.

The ADA recommends a less stringent HbA1c target (<8%) for elderly patients with multiple comorbidities (1). According to ESC/ESH guidelines, blood pressure should be maintained below 140/80 mmHg to reduce cardiovascular risk without causing orthostatic symptoms (2).

Lifestyle Modifications

Tailored lifestyle changes are essential in elderly diabetics and should include:

Nutrition: Emphasis on complex carbohydrates, high fiber, and adequate protein intake to counteract sarcopenia (5). Small, frequent meals to accommodate Parkinson's-related dysphagia or delayed gastric emptying.
Physical activity: Gentle, low-impact activities like walking or stationary cycling for at least 150 minutes/week. Resistance exercises may help improve muscle mass and balance (6).
Hydration: Regular fluid intake to prevent dehydration and constipation.
Fall prevention: Home safety modifications and use of assistive devices.
Monitoring: Frequent blood sugar and blood pressure checks; caregiver support for medication adherence.

Conclusion

This case emphasizes the need for comprehensive care involving neurologists, endocrinologists, and primary care providers in managing elderly patients with complex chronic diseases. Optimizing medications and reinforcing lifestyle changes can improve both glycemic control and quality of life.

Patient Consent

Informed written consent was obtained from the patient for publication of this report.

REFERENCES (VANCOUVER STYLE)

1. American Diabetes Association. Standards of Medical Care in Diabetes—2024. Diabetes Care. 2024;47(Suppl 1):S1–S291.
2. Williams B, Mancia G, Spiering W, et al. 2018 ESC/ESH Guidelines for the management of arterial hypertension. Eur Heart J. 2018;39(33):3021–104.
3. Santiago JA, Potashkin JA. Shared dysregulated pathways lead to Parkinson's disease and diabetes. Trends Mol Med. 2013;19(3):176–86.
4. Mehanna R, Moore S. Dopamine dysregulation syndrome in Parkinson's disease. J Neurol Sci. 2011;310(1-2):271–5.
5. Evert AB, Dennison M, Gardner CD, et al. Nutrition therapy for adults with diabetes or prediabetes: a consensus report. Diabetes Care. 2019;42(5):731–54.
6. World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva: WHO; 2020.