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Case Report

Case Report on Drug Induced Orthostatic Hypotension and Vertigo in Hypertensive and Benign Prostatic Hyperplasia Patient

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ABSTRACT

Orthostatic hypotension is a clinical condition characterized by a drop in blood pressure upon standing, leading to symptoms such as dizziness and lightheadedness. Benign Prostatic Hyperplasia (BPH) is a condition that affects many men and can cause Lower Urinary Tract Symptoms (LUTS). Some of the drugs used to treat BPH, such as alpha-blockers, can also cause OH. We present a case of a patient who experienced drug-induced orthostatic hypotension along with Vertigo. The management of drug-induced OH and vertigo included dose adjustment, drug discontinuation or switching, hydration, salt intake, compression stockings, physical countermeasures, and pharmacological interventions. In conclusion, drug-induced OH and vertigo are important adverse effects that should be considered in BPH patients who are treated with alpha-blockers or anti-muscarinics. Clinicians should be aware of the risk factors, diagnosis methods, and management strategies for these conditions. Further research is needed to compare the safety and efficacy of different drug classes and combinations for BPH patients with LUTS.

Keywords: Orthostatic hypotension, Drug-induced, Adverse effects, Vertigo, Dizziness.

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INTRODUCTION

Orthostatic hypotension is a common condition that can be caused by various factors, including medication use. The onset of symptoms upon standing, such as dizziness, lightheadedness, and vertigo, can significantly impact an individual's quality of life. It is a recognized risk factor for adverse outcomes such as syncope and falls, cardiovascular events (including coronary events, heart failure hospitalization, and stroke), cognitive impairment, and mortality.[1,2] In this case report, we discuss a patient who developed orthostatic hypotension and vertigo following the initiation of a specific medication. OH accounts for 1.3% of drug adverse reactions and its incidence increases with advancing age.[3]

CASE PRESENTATION

An 80-years-old male patient with a history of hypertension, diabetes and Benign Prostate Hyperplasia presented to a tertiary care hospital with chief complaints of dizziness and vertigo upon standing and changing his position while sleeping from past one week. The symptoms were exacerbated upon sudden changes in posture. He has taken Ramipril 5 mg, Cilnidipine 5 mg once daily for the past five years to treat his hypertension, Gliclazide 60 mg, Sitagliptin 50 mg twice daily for the past 3 years to treat his diabetes, and Flodart Plus (Tamsulosin 0.4 mg+Dutasteride 0.5 mg) once daily for the past eleven years to treat his BPH.

Recently Chlorthialidone 6.25 mg once daily was added to his prescription for the past five months to treat his hypertension. Patient is also using two types of eye drops: Travacom (Travoprost 40 mcg and Timolol 5 mg) Eye drops and Brivex Eye drops which consist of Brinzolamide 1% and Brimonidine 0.2%. These eye drops are being used by him for the treatment of glaucoma.

On his visit to the hospital his vitals were taken which was found as: BP 140/90 mmHg, Pulse Rate 74 bpm, Respiratory rate 19/min.

The physician suspected drug-induced Orthostatic Hypotension (OH) in the patient who was on a triple drug regimen for hypertension. This suspicion arose because the patient's blood pressure measured 140/90 mmHg and he was on triple drug regimen therapy which was irrational. Further investigation was conducted, the Electrocardiogram (ECG) was performed on the patient and it revealed sinus rhythm with 1st degree Atrioventricular (AV) block (Figure 1). This indicates that the electrical signals in the heart are functioning properly, but there is a slight delay in the transmission of the signals from the atria to

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the ventricles. To gain additional insights, the physician consulted with a cardiologist.

Cardiologist advised to perform 2D echo which revealed mild Left Ventricular Hypertrophy (LVH) (Figure 2). LVH refers to an enlargement of the muscles of the left ventricle, which is the main pumping chamber of the heart. The mild nature of the LVH suggests that the thickening of the heart muscle is not severe.

The cardiologist has determined that these findings are age-related changes and do not have any relevance to Orthostatic Hypotension (OH).

Based on the patient's symptoms of vertigo, the physician prescribed Betahistine, a medication commonly used to treat vertigo. The recommended dosage was 16 mg taken twice a day for a week.

In order to minimize potential drug interactions and reduce the risk of orthostatic hypotension exacerbation in the patient, the cardiologist made the decision to restrict the use of Ramipril and Chlorthalidone. The patient was advised to take the antidiabetic drugs in his prescription as usual.

It is to be noted that patient is on Flodart plus (Tamsulosin and Dutasteride) since eleven years for the treatment of BPH and one of the constituent of flodart plus i.e. is tamsulosin is an alpha one blocker which has the tendency to cause OH. As the patient has BPH, flodart plus cannot be stopped.

By prescribing Betahistine for vertigo and limiting the use of antihypertensive medications Ramipril and Chlorthalidone, the physician and cardiologist aimed to address the patient's symptoms while ensuring the safest possible treatment plan. This approach takes into consideration the potential side effects and drug interactions that may have contributed to the drug-induced OH.

During the patient's follow-up visits, the progress was closely monitored. The patient reported a reduction in dizziness and a significant decrease in the vertigo upon standing. Blood pressure measurements were taken in various positions to assess orthostatic changes.

At the 10-day follow-up visit, the patient reported minimal dizziness and improvement in the symptoms of vertigo after taking betahistine and monotherapy of cilnidipine. Blood pressure measurements showed a stable response. Therefore, it was recommended to continue Betahistine for an additional 2 weeks and to discontinue the use of Ramipril, Cilnidipine, and Chlorthalidone. Instead of cilnidipine, the patient was prescribed Telmisartan 40 mg once daily (monotherapy) as an alternative blood pressure medication as it has many benefits over other co-morbid conditions as well.

Constant monitoring of BP was done during morning and night when patient was only on of Cilnidipine and when he was only on Telmisartan.

His current prescription charts as follows:

Drug	Dose and Frequency
Telmisartan	40 mg OD
Gliclazide Extended Release	60 mg BD
Sitagliptin	50 mg BD
Flodart Plus (Tamsulosin+Dutasteride)	OD
Betahistine	16 mg BD

Adverse drug reaction was classified as "possible" based upon Naranjo scale with a score of 2.

DISCUSSION

In this case, the patient's orthostatic hypotension and vertigo were found to be most likely caused by the medications Ramipril, Chlorthalidone, and Cilnidipine. It was observed that the patient's symptoms completely resolved and his overall health improved upon discontinuation of these medications. This highlights the importance of considering pharmaceutical side effects when treating patients experiencing orthostatic symptoms.

Upon discontinuing these medications, the patient experienced a complete resolution of their symptoms, indicating a clear cause-effect relationship. Additionally, the general health of patient improved, suggesting that the adverse effects of these medications were contributing to their overall well-being.

This case serves as a reminder of the importance of considering pharmaceutical side effects when treating patients with orthostatic hypotension symptoms. Physicians and healthcare providers should carefully evaluate the potential risks and benefits of medications, especially in patients who present with orthostatic hypotension or vertigo.

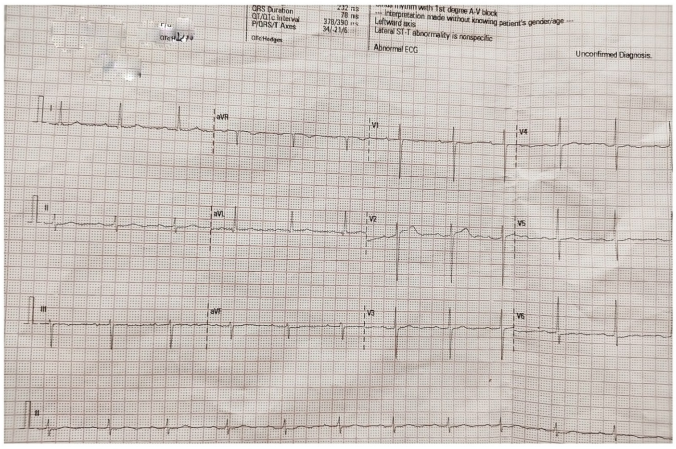

Figure 1: ECG shows first degree AV block.

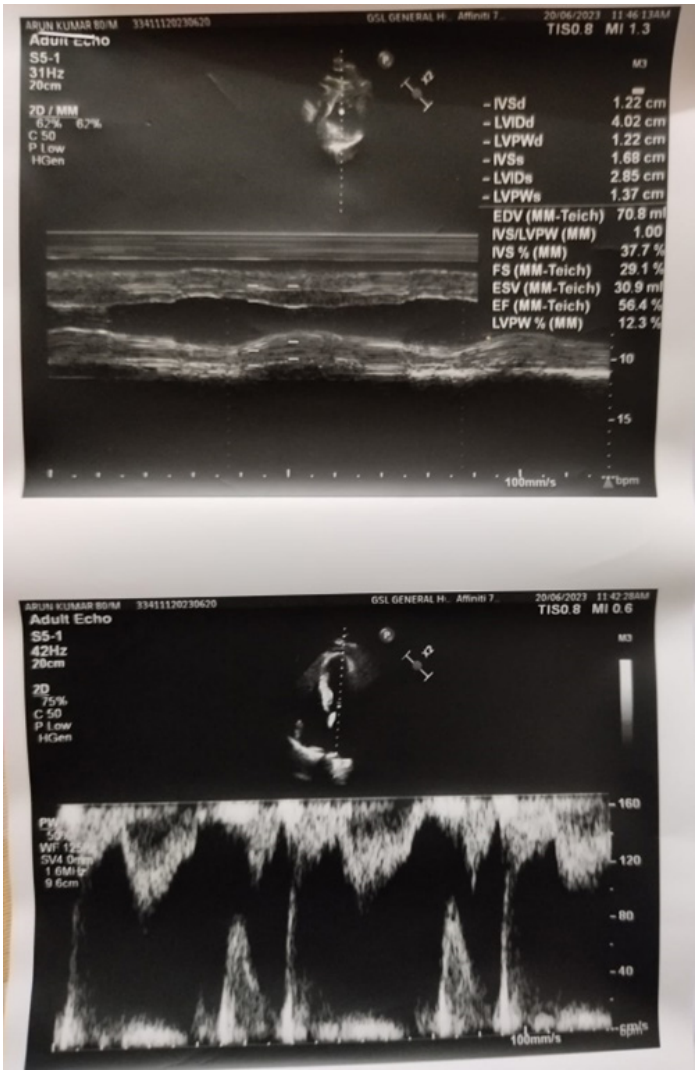

Figure 2: 2D echo reveals mild Left Ventricular Hypertrophy.

By taking pharmaceutical side effects into account, healthcare professionals can make informed decisions that prioritize patient safety and overall health. It is essential to closely monitor patients for any adverse reactions and promptly address them to ensure the best possible outcomes.

As polypharmacy becomes more prevalent among the ageing population worldwide, the issue of drug-induced Orthostatic Hypotension (OH) is becoming increasingly concerning.[4] With the simultaneous use of multiple medications, there is a higher risk of adverse drug interactions and side effects, including orthostatic hypotension. As individuals age, their bodies may become less efficient at metabolizing drugs, increasing the risk of side effects. Additionally, the ageing process itself can affect blood pressure regulation, making older adults more vulnerable to drug-induced orthostatic hypotension.

CONCLUSION

This case report highlights the importance of recognizing and managing drug-induced orthostatic hypotension and its associated symptoms. Prompt identification of medication-related adverse effects, particularly in patients experiencing dizziness and vertigo, is crucial for improving patient outcomes and quality of life. Healthcare providers should remain vigilant in considering drug-induced orthostatic hypotension and ensure appropriate management strategies to enhance patient safety and well-being.

This case underscores the importance of medication review, patient education, and collaborative efforts among healthcare professionals in managing drug-induced orthostatic hypotension effectively. Measurements in the sitting position may reduce sensitivity[5] and standing BP should be preferred, whenever possible.

Overall, this case report serves as a reminder of the importance of considering medication-related adverse effects in patients presenting with orthostatic hypotension and Vertigo. Through continued research, interdisciplinary collaboration, and patient-centered care, we can optimize the management of drug-induced orthostatic hypotension and improve patient outcomes in clinical practice.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

OH: Orthostatic Hypotension; **ECG:** Electrocardiogram; **AV:** Atrioventricular; **LVH:** Left Ventricular Hypertrophy; **BPH:** Benign Prostatic Hyperplasia; **WHO:** World Health Organization; **2D ECHO:** Two Dimensional Echocardiography; **LUTS:** Lower Urinary Tract Symptoms.

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