

Cilnidipine Adverse Effect In Hypertensive Chronic Kidney Disease Patient With Pedal Edema– A Case Report



Abstract

Bilateral pedal edema is the most common symptom in chronic kidney diseased patients. It occurs due to the loss of functioning of the kidney. This may lead to fluid accumulation in the body and also an accumulation of excretory products or waste products like creatinine, uric acid, urea levels are increases in blood. The presented case was hypertensive patient with chronic kidney disease cilnidipine is a drug prescribed for her blood pressure it was calcium channel blocker. These drugs induce the edema in a patient with chronic kidney disease. Here in this scenario need of clinical pharmacist in the area of patient care and improved quality of treatment to the patients for better outcomes. Patients data was collected in profile form and documented confidentially.

Keywords: Chronic kidney disease, cilnidipine, bilateral pedal edema, clinical pharmacist

Abbreviations: CKD: Chronic Kidney Disease; CCBs: Calcium Channel Blockers; ARBs: Angiotensin Receptor Blockers; HTN: Hypertension; ADR: Adverse Drug Reaction; B/L: Bilateral

Introduction

A female patient of age 60 years was admitted to the Nephrology department with chief complaints of B/L pedal edema, body pain and loss of appetite. She was admitted into the Tertiary hospital in Hanamkonda with past History-hypertension (HTN), Family history-HTN. For her HTN physician prescribed cilnidipine 20 mg BD which is a Calcium Channel Blocker (CCB), that targets voltage-dependent L-type of Calcium channel. Cilnidipine (marketed as Cilacar, Cinod in India), an L-type and N-type CCB, has been reported for antiproteinuric action when administered in patients with essential hypertension [1-3].

Case Report

The patient was apparently asymptomatic one week ago. Then she developed body pain with loss of appetite and bilateral edema. She had a history of hypertension since three years. Family history-HTN.

Physical examination results: Body temperature-98.6°F; Pulse rate-84/min;

Respiration rate-18 breaths/min; Blood pressure-150/90 mmHg; SPO2 at room air-98%.

Renal Function Tests (RFTs): serum creatinine-7.5 mg/dl; Blood urea-142 mg/dl; Sr.Na-140 mmol/L; serum phosphorus-5.8 mg/dl; Sr.potassium-3.9 mmol/L; Sr.calcium-0.72 mmol/L; Sr.chlorides-101 mmol/L.

Complete Blood Picture (CBP): White Blood Cell Count-7,500 μ L; Haemoglobin-7.0 gms%; Red Blood Cell Count-2.4 millions/ μ L; Differential leukocyte count: Neutrophils-76%, Eosinophils-02%, Monocytes-02%, Lymphocytes-20%.

Liver Function Tests (LFTs): Total bilirubin-0.1 mg/dl; Conjugated bilirubin-0.2 mg/dl; unconjugated bilirubin-0.6 mg/dl; ALT-28 U/L; AST-31 U/L; Sr.ALP-298 U/L; Total protein-5.5 gm/L; Sr.globulin-3.0 gm/L; Sr.albumin-2.5 gm/L.

Abdominal ultrasound: Small kidney with renal parenchymal disease (GRADE III).

Provisional diagnosis: From above laboratory and investigational data the patient was

Nagaraju Vallepu*,
Saikiran Velpula,
Bharathkumar Dasari,
Mahalaxmi Pykarao,
Shyamsunder Anchuri,
Manishkumar
Thimmaraju

*Department of Pharmacy Practice,
Balaji Institute of Pharmaceutical
Sciences, Narsampet, Warangal,
Telangana, India*

**Author for correspondence:*

vallepunagaraju99@gmail.com

TABLE 1. Treatment plan.

Drug Name	Route	Dose	Frequency	Days Of Treatment						
				1 day	2 day	3 day	4 day	5 day	6 day	7 day
INJ: Sulbactam + cefoperaz-one	IV	1 GM	OD	Given 10 AM	Given 10 AM	Given 10 AM	Given 10 AM	Given 10AM	Given 10 AM	Given 10 AM
CAP: Pantoprazole + domperidone	ORAL	10 MG	BD	Given 8 AM and 8 PM	Given 8AM&8PM	Given 8 AM and 8 PM	Given 8 AM and 8 PM			
TAB: Cilnidipine	ORAL	20 MG	BD	Given 10 AM and 9 PM	Given 10 AM and 9 PM	Given 10 AM and 9 PM	Stop	Stop	Stop	Stop
CAP: Bevon	ORAL	1 MG	OD	Given 1 PM	Given 1 PM	Given 1 PM	Given 1 PM	Given 1PM	Given 1 PM	Given 1 PM
Tablet: Shelcal	ORAL	500 MG	BD	Given 1 PM and 8 PM	Given 1PM&8PM	Given 1 PM and 8 PM	Given 1 PM and 8 PM			
TAB: Telmisartan	ORAL	40 MG	BD	Not given	Not given	Not given	Given 10 AM and 9 PM			

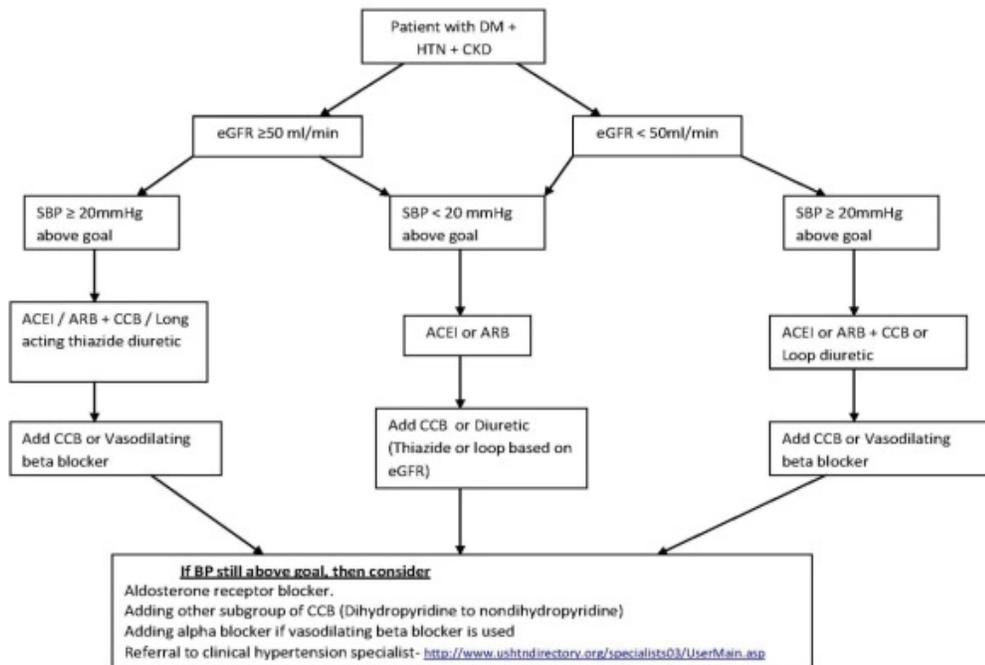


Figure 1. Role of clinical pharmacist in controlling hypertension in ckd patients.

diagnosed as Chronic Kidney Disease (CKD) (TABLE 1) (FIGURE 1).

Discussion

The patient presented with the B/L pedal edema and patient past history of Hypertension now she diagnosed as Chronic Kidney Disease (CKD). Patients data was collected in profile form and documented confidentially. First, we reduced the patient symptoms by giving the above medications. In that prescription cilnidipine is a well-known drug for hypertensive CKD patient. Cilnidipine effectively reduces the low-grade albuminuria in hypertensive CKD patient but main adverse effect of this drug induces the ankle edema, pedal edema, and peripheral edema. In this reported case the patient already had the pedal edema. As a “Clinical Pharmacist” I have observed the patient from the admission of the first day to fifth-day, the patient was not relieved from pedal edema even patient

underwent hemodialysis (HD). The mechanism of this adverse effect is unknown [4-6].

Conclusion

Most of the Calcium Channel Blockers (CCBs) induce edema. As a clinical pharmacist, we request consent prescriber with research articles to replace the cilnidipine with Angiotensin Receptor Blockers (ARBs) or ACEIs or Thiazide diuretics for reducing the complication with cilnidipine. Finally, prescriber accepted my request and changed the drug to hydrochlorothiazide 25 mg BD within 3 days the patient’s pedal edema was completely reduced. Now she is free from edema. This case report shows that cilnidipine is not safe for hypertensive CKD patients. Here in this scenario, there is a need for clinical pharmacist in the area of patient care and improved quality of treatment to the patients for better outcomes.

Acknowledgment

We are very thankful to both duty doctors and patient who supported to this case study.

Conflict of Interest

None

References

Sener D, Halil M, et al. Anasarca edema with amlodipine treatment. *Ann. Pharmacoter.* 39, 761-763 (2005).

Wright JT, Bakris G, Greene T, et al. African American study of kidney disease and hypertension study group: effect of blood pressure lowering and antihypertensive drug class on progression of hypertensive kidney disease: results from the AASK trial. *JAMA.* 288, 2421-

2431(2002).

National High Blood Pressure Education Program Working Group. 1995 Update of the working group reports on chronic renal failure and renovascular hypertension. *Arch. Intern. Med.* 156, 1938-1947 (1996).

Tight blood pressure control and risk of macrovascular and microvascular complications in type 2 diabetes: UKPDS 38. UK Prospective Diabetes Study

Group. *BMJ.* 317, 703-713 (1998).

Fogari R, Zoppi A, Maffioli P, et al. Effect of telmisartan addition to amlodipine on ankle edema development in treating hypertensive patients. *Expert Opin. Pharmacother.* 12(16), 2441-2448 (2011).

Edwards IR, Aronson JK. Adverse drug reactions: Definitions, diagnosis, and management. *Lancet.* 356,1255-1259 (2000).