

Case Report on Amlodipine Induced Pitting Type Pedal Edema

Sahithya Sunil*

Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere, Karnataka, INDIA.

Received: 29 June 2022;

Accepted: 17 August 2022.

*Correspondence to:

Dr. Sahithya Sunil,

Pharm. D Intern, Department of Pharmacy Practice, Bapuji Pharmacy College, Davangere-577004, Karnataka, INDIA.

Email: sunilsahithya28@gmail.com

Copyright: © the author(s), publisher and licensee Indian Academy of Pharmacists. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Amlodipine is 1,4 dihydropyridine class of third generation calcium channel blocker which is indicated for the management of hypertension, coronary atherosclerosis, stable angina and it is also an alternative used for the nifedipine induced pedal edema. This case study aims to make report of the common adverse reaction pitting type pedal edema is occurring during the treatment with the same. Amlodipine has increased incidence rate of pedal edema compared to other calcium channel blockers. Here present 67 years old male patient who gradually develops pitting type pedal edema after the initiation of oral amlodipine for hypertension. The symptoms have been relieved after the cessation of drug and patient has been managed with alternative antihypertensive agent. This study helps to consider more regarding amlodipine therapy and aids to earlier prevention of serious adverse drug reactions occurring in patients.

Keywords: Amlodipine, Pedal edema, Calcium channel blocker, Adverse drug reaction.

INTRODUCTION

Amlodipine is a third-generation calcium channel blocker and 1,4 dihydropyridine and also acts as cardiovascular agent which is structurally linked to felodipine, nifedipine, nimodipine. Amlodipine is mainly indicated for the treatment of coronary atherosclerosis, stable angina and hypertension in adults and pediatrics above 6 years.^[1] The major mechanism of action involves blocking of voltage sensitive L- type calcium channel by binding to alpha -1subunit or blocking the transmembrane influx of calcium ions into cardiac and vascular smooth muscles.^[2] It also decreases the peripheral vascular resistance and lowers blood pressure by acting directly on vascular smooth muscles. The therapeutic effects on angina may be through a peripheral vascular resistance and inhibition of coronary spasm. The drug performs a constant pharmacodynamics and pharmacokinetics data (longer duration of action, high bioavailability, long half-life, minimum effective concentration for a long time and sustained efficacy) and it is well tolerated. The most frequently occurring adverse effects of amlodipine is pedal edema, abdominal pain, nausea, fatigue, dry mouth, constipation, hypotension, palpitation, flushing. Here report a 67-years-old patients with pitting type pedal edema after treating with amlodipine for hypertension.^[4]

CASE REPORT

A-67-years old apparently normal male patient was admitted to the surgery ward with the complaint of swelling of right foot which was insidious onset, gradually progressive from knee to ankle. Complaint of ulcer over left foot which is present since 5 months which is healing in nature, patient developed swelling with puss over the dorsal aspect of the foot associated with pain and puss discharge. On further examination, he had history of previously operated diabetic foot 1 year ago. Before three months the patient was also diagnosed with hypertension and was under irregular medication.

By examining the vital signs, blood pressure was found to be 160/90 mmHg, pulse rate was 80 bpm and all the laboratory investigations such as CBC, LFT, Urine analysis, Electrocardiogram seems to be normal. The diabetic profile shows RBS-112mg/dl, HbA1c -7 mg%. From the subjective, laboratory

investigations and past history of patients he was diagnosed with Right leg cellulitis with healing ulcer over right foot with hypertension. The patient was treated with Merolard Taz 1.125g IV, inj. Pyrocare 1g IV, inj vasizone 3mg IV, inj xepenta IV 40 mg, inj Tramadol, Tab Amlong 5 mg per orally twice daily for hypertension. On 7th day after initiation of amlodipine therapy, the patient was presented with pitting type pedal edema. The physician interprets that the pedal edema was caused by amlodipine. On cessation of amlodipine the patient was recovered from edema and an alternative antihypertensive agent tab. Cilnidipine 5 mg once daily was prescribed.

DISCUSSION

The higher efficacy and tolerability of calcium channel blocker such as amlodipine make as one of the primary choice of monotherapy for the therapeutic management of hypertension. The mode of action by which the amlodipine lowers the blood pressure includes reduction in peripheral resistance thereby leading to vasodilation. Based on previous studies, amlodipine is a racemic mixture of (R) and (S) isomers. S isomer has more pharmacological effects than R isomer. Dizziness, drowsiness, fatigue, male sexual disorder- CNS, flushing, palpitation-CVS, pruritus and skin rash-Derma, Abdominal pain, nausea, constipation-GI, Asthenia and muscle cramps dyspnea are the most common adverse reactions with amlodipine. Photosensitivity, lightheadedness, insomnia, ECG abnormalities, hypersensitivity reactions and chest pain, ECG abnormalities, frequent urination, elevated urine enzyme are the other commonly occurring adverse drug reactions with Amlodipine This case is presented with amlodipine induced pitting type pedal edema. The mechanism considered occurring pitting type pedal edema is due to increased hydrostatic pressure across capillaries which result in reflux constriction of post capillary vessels. The therapeutic management involves the cessation of the drug and substitution with an alternative agent. In this patient, an alternative calcium channel blocker is prescribed as alternative therapy.

CONCLUSION

Amlodipine induced pitting type pedal edema was reported as an

incidence rate of 1.8%-10.8% on a dose between 5-10 mg daily. The health care professionals should carefully consider and monitor the patients while administering calcium channel blockers. The early detection and discontinuation of offending drug and prescription of alternative antihypertensive agent improves patients physical condition and thereby prevent serious adverse drug reactions.

CONFLICT OF INTEREST

The author declares that there is no conflict of interest.

REFERENCES

1. Sanghavi K, Someshwari M, Rajanadh MG, Seenivasan Amlodipine induced severe pitting type pedal edema: A Case Report From a Tertiary Care Hospital. *J Pharmacovigil* 5: 243.doi:10.4172/2329-6887.1000243.
2. Kumar AA, Siddharama R, Baig MJ, Reddy GA, Rohith R. A Case Report on Amlodipine Induced Pedal Edema Pitting Type. *Int J Allied Med Sci and Clin Research*. 2015;3(2).
3. Joseph M, Ammu A, Thomas JE, Hemalatha S, Shivakumar S. Case Report on Amlodipine induced Pitting Pedal Edema. *J of Pharmacy and Pharm Sci*. 2016;5(8), ISSN: 2278-4357.