

CASE REPORT

Misdiagnosis of heart failure for Amlodipine adverse reaction

C Besa

Michael Chilufya Sata, School of Medicine, Copperbelt University, Ndola, Zambia

Correspondence: Chola Besa (besachola@aol.com)

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This is a case report of misdiagnosis of heart failure for amlodipine related adverse reaction. Amlodipine is a dihydropyridine calcium channel blocker frequently used in drug treatment of essential hypertension. Adverse reactions of calcium channel blockers are well documented yet the attending physician did not recognise ankle oedema as an adverse drug reaction of amlodipine. Instead, a differential diagnosis of heart was made. If the diagnosis of heart failure was maintained, this would have easily led to inappropriate use of multiple drugs and related problems such as non-adherence to treatment, duplication of treatment, additional adverse reactions and drug-drug interactions. This report has demonstrated poor understanding of the basic principles of clinical pharmacology and therapeutics (CPT) by the attending physician that could have threatened patient's safety.

Background

Dihydropyridine calcium channel blockers have long been recognised to cause peripheral oedema including ankle oedema

[1,2] that tend to worsen in the evening [3] and particularly in patients taking long term high doses [4]. If misdiagnosis of heart failure is made due to presence of ankle oedema, this would easily lead to inappropriate use of multiple drugs which is commonly known as polypharmacy [5] and related problems such as non-adherence to treatment, duplication of treatment, adverse reactions and drug-drug interactions. A standard definition of polypharmacy is not used [6] and there is no consistent number of drugs that defines it [5]. Alternatively, polypharmacy may be defined as the administration of more medications than are clinically indicated [7].

Case presentation

A 56 year old male patient had been on 10mg amlodipine daily orally for his essential hypertension for 3 months. The patient's

hypertension was successfully controlled but he started to experience swelling of both feet. The swellings were particularly around the ankle joints. Eventually, the patient was unable to wear his shoes. However, the patient had no other clinical complaints to suggest heart failure such as difficulty in breathing, orthopnoea nor easily getting tired. Consequently, the attending physician conducted several clinical investigations such as chest x-ray, 12 lead electrocardiography (ECG) and echocardiography on the patient. None of the investigations performed suggested heart failure nor any cardiac pathology.

It was clear that the swelling of the feet were localized to the ankle joint regions of both feet. Upon questioning the patient, he indicated that he was on amlodipine drug treatment. Hence, the ankle swellings were instantly recognised to be associated with amlodipine treatment and the patient was asked to re-visit his physician for review of his drug treatment. The patient had amlodipine withdrawn and ankle oedema resolved completely within 72 hours. However, the patient has had his blood pressure controlled on another calcium channel blocker, nifedipine, using a retard formulation without any untold reactions.

Conclusion

This report has demonstrated poor understanding of the basic principles of clinical pharmacology and therapeutics (CPT) by the attending physician that could have threatened patient's safety. Therefore, teaching and assessment of CPT to undergraduate and postgraduate students in medical schools need to be strengthened so as to promote effective and safe use of drugs in Zambia.

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