

Is Dysguesia Going to be a Rare or a Common Side-effect of Amlodipine?

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Abstract

A very rare side-effect of amlodipine is dysguesia. A review of the literature produced only one case. We report a case about a female with essential hypertension on drug treatment with amlodipine developed loss of taste sensation. Condition moderately improved on stoppage of the drug for 25 days. We conclude that amlodipine can cause dysguesia. Here, we describe the clinical presentation and review the relevant literature on amlodipine and dysguesia.

Keywords: Amlodipine, Dysguesia, Rare/common

Introduction

Amlodipine is a long acting calcium channel blocker of dihydropyridine class, which is characterized by a higher vascular selectivity and a smaller negative inotropic effect compared to nifedipine, used as an antihypertensive and in the treatment of coronary artery disease. With its long elimination half-life of around 30-50 h and have low variability in the trough-to-peak plasma concentrations making once daily application without loss of its therapeutic efficacy. Placebo-controlled studies and comparative studies have confirmed the efficacy of amlodipine in patients with arterial hypertension and coronary artery disease. amlodipine is well-tolerated.^[1]

The various adverse side-effects seen after the use of amlodipine are peripheral edema (8.3%), fatigue (4.5%), dizziness, palpitations, myalgia, stomachache, headache, dyspepsia, nausea, blood disorders, gynecomastia, impotence, depression, insomnia, tachycardia, or gingival enlargement and rare adverse effect namely erratic behavior, hepatitis, jaundice and very rarely hyperglycemia, tremor, Stevens-Johnson syndrome.^[2]

Search of the literature has revealed that only two patients were reported to have dysguesia with nifedipine.^[3] A large post marketing surveillance did not reveal any taste loss with the calcium channel blockers.^[4] A recent study have shown a rare case report of dysguesia after amlodipine. The causal relationship in this case is also strengthened by the de-challenge and re-challenge done.^[5] To the best of our knowledge, this is the second case of dysguesia related to amlodipine use.

Case Report

This was a case of a 48-year-old female patient who presented to the out-patient department (OPD) with the complaints of severe headache, dizziness and palpitation. She was a known case of essential hypertension and on drug treatment for hypertension. She was taking amlodipine (2.5 mg once daily) and metformin (250 mg twice daily) for 6.5 years. She has some difficulty with taste identification and stopped her drug amlodipine 25 days ago before presenting to OPD. On questioning the reason made for stopping the drug amlodipine alone and not metformin was logical for her, adding that her husband was diabetic and on metformin therapy but without any change in taste alteration. Hence, she herself stopped the other drug (amlodipine) she was taking. She also added that there was some improvement in loss of taste sensation. However, the actual complaint which brought her to the OPD was symptoms of hypertension which was due to the stoppage of the antihypertensive drug. On examination, she was found to be apparently normal. Her oral cavity was also examined for any pathology and was found normal. Clinical examination pertaining to central nervous system (including cranial nerve examination) and peripheral nervous system

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was also within normal. Vitals - Pulse rate - 98/min; blood pressure - 160/100 mm Hg; respiratory rate - 16/min and no abnormal deviation in auscultation findings. Since her blood pressure was high, she was again prescribed the same medication (amlodipine) with dosage increased to 5 mg once daily. At 8 days later, she presented with the similar complaint but with controlled blood pressure proving that amlodipine can cause dysguesia. Electrocardiography was within the normal limits except for changes pertaining to chronic blood pressure. The investigation also excludes any mineral/vitamin (zinc) deficiency [Table 1]. Hence, she was asked to stop the drug and was changed on other medication which does not cause dysguesia namely cardio-selective β -blocker bisoprolol (2.5 mg). She was followed for next 15 days and 30 days for blood pressure and her status of taste sensation. It was found blood pressure was 110/70 mm Hg taken as average and she feels comfortable with moderate improvement in taste sensation.

Discussion

Loss of taste sensation (dysguesia) was not established adverse effect of amlodipine. This rare adverse effect was noticed in literature for calcium channel blocker nifedipine.^[3] Other antihypertensive drugs causing this rare effects were seen with drugs targeting renin angiotensin system namely captopril^[6] and eprosartan.^[7] Conditions causing dysguesia are chemotherapy, drug induced namely metronidazole, tetracycline groups, statins, most thyroid medications^[8] and deficiency state such as zinc, vitamin B12 and other metabolic conditions like diabetes, hypothyroidism. Here,

Table 1: Parameters and their values

Parameters	Values (unit)
Hemoglobin	13.8 g/dl
Total leucocyte count	8600 cells/cu.mm
Neutrophils	76%
Lymphocytes	20%
Monocytes	3%
Eosinophil's	1%
Packed cell volume	42%
Red blood cells	4.1 millions/mcl
Platelet count	3.1 lakhs
Reticulocytes	1.60%
Mean corpuscular volume	89 fl
Mean corpuscular hemoglobin	33 pg/cell
Mean corpuscular hemoglobin concentration	32 g/dl
Red cell distribution width	13%
Fasting blood glucose	90 mg/dl
Random blood glucose	110 mg/dl
Blood urea	36 mg/dl
Serum creatinine	0.9 mg/dl
Serum zinc	100 μ g/dl
Serum vitamin B12	390 pg/dl

the case actually presented to the OPD for the symptoms of hypertension, which on retrospectively found to be a case of rare adverse effect of amlodipine. The adverse effect was concluded to be due to amlodipine, first by the patient herself by stopping and found improvement (de-challenge) and second to control blood pressure the drug was reintroduced with increased dose during which the patient developed appearance of symptom (re-challenge). The other conditions were also ruled out by the proper clinical examination, history of the patient related to drugs and by investigations related to vitamin B12 and zinc. One of the possible mechanisms of dysguesia is through the inhibition of the calcium sensing receptor present in the taste buds. These receptors were found to enhance the taste sensation of salt, sour and sweet sensation.^[9]

Conclusion

Amlodipine is the most commonly prescribing drug gaining popularity as a long-acting calcium channel blockers with fewer side-effects and tolerability. Hence, this kind of case report may provide the clinicians information about the rarest side-effect and their management.

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