



Ramipril Induced Burning Mouth Symptoms

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Authors' contributions

This work was carried out in collaboration between all authors. Author VVB wrote abstract and discussion. Author VB wrote introduction and searched the literature. Author DVJ took the photos and wrote section case report. All authors read and approved the final manuscript.

Case Study

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ABSTRACT

We report a case of a 74-year-old female patient who presented with symptoms of burning mouth. The patient suffered from hypertension and had been using the following antihypertensive drugs: Angiotensin converting enzyme inhibitor (ACE)-ramipril with felodipine (calcium channel blocker) (Triapin-2.5mg a day) during the past year and a half. After one year of Triapin intake, symptoms of burning mouth evolved. Seven days after the replacement of the offending drug with losartan (angiotensin II receptor antagonist), the burning symptoms disappeared. This case stresses the fact that in cases of patients with oral burning, the symptoms can easily vanish after the withdrawal of the offending drug.

Keywords: Oral burning symptoms; antihypertensives.

1. INTRODUCTION

Patients who present with burning symptoms in the oral cavity might suffer from primary burning mouth syndrome which is probably a neuropathy of the small trigeminal fibers, however in some of the patients with burning symptoms (secondary burning mouth syndrome) other underlying causes could be identified such as candidal infection, parafunctional habit (such as tongue thrusting), medication intake (i.e. antihypertensives), anaemia, vitamin B deficiency, gastritis/H. pyloriinfection, etc. [1].

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It is well known that every medication taken locally or systemically might induce oral adverse reactions in the oral cavity. Symptoms of oral burning have been associated with intake of efavirenz, clonazepam, captopril, enalapril, lisinopril, eprosartan, candesartan, sertraline, venlafaxine, fluoxetine and hormone replacement therapy [1-3]. Anxiolytics and H₂ receptor antagonists and proton pump inhibitors have also been reported as frequent co-finding in patients suffering from burning mouth syndrome [4,5], however, this is probably due to the simultaneous presentation of oral burning symptoms and psychological as well as gastrointestinal disturbances. Therefore it is a concomitant finding and not the cause of burning mouth symptoms.

2. CASE REPORT

We report a case of a female patient (74) years old) who presented with symptoms of burning mouth. Prior to clinical examination, the patient signed informed consent according to the Helsinki II. The patient suffered from hypertension and had been using antihypertensive drugs: Angiotensin converting enzyme inhibitor (ACE)-ramipril and felodipine (Triapin, 2.5mg/2.5mg) during the past year and a half. After one year of ramipril intake, symptoms of burning on her tongue appeared. Seven days after the replacement of the offending drug with losartan which is an angiotensin II receptor antagonist, burning symptoms disappeared. As seen in other case reports regarding burning symptoms and drug intake, clinical oral finding was without any lesions. Candidal swab was taken in order to exclude candidal infection with cotton pellet and placed on Sabouraud's agar in the incubator for the next 48 hours, however the finding was negative. Salivary flow rate was normal. She denied parafunctional habit of tongue thrusting. She reported that her blood tests (complete blood count, iron and glucose) done a month before were normal. She did not have any gastrointestinal symptoms. Moreover, she was otherwise healthy and was not taking any other medication. Patient refused any follow-ups.

3. DISCUSSION

Salort Llorca et al. [3] reviewed literature in 2008 which revealed clinical cases in which oral burning sensation is described after the administration of drugs belonging to different therapeutic groups: Efavirenz, clonazepam, captopril, enalapril, lisinopril, eprosartan, candesartan, sertraline, venlafaxine, fluoxetine and hormone replacement therapy. Curiously, among the different types of antihypertensive drugs, BMS was only associated with those compounds that act upon the angiotensin-angiotensin II system. This finding is in contrast to ours, since the offending drug was replaced with the one which also acts upon the angiotensin-angiotensin II system, however, our patient was free of oral burning symptoms.

Salort Llorca et al. [3] concluded that in most cases, the affected patients with burning mouth symptoms due to the drug intake were postmenopausal women, which is in concordance with our case.

So far, seven case reports in the published literature regarding burning symptoms after ACE intake such as lisinopril, captopril and enalapril [6-10] have been reported. Burning symptoms and dysgeusia after intake of eprosartan which is an angiotensin II receptor antagonist have been also described [11]. To our knowledge, there are no case reports upon ramipril and felodipine intake and burning mouth symptoms. Salort Llorca et al. [3] suggested that all antihypertensives which act upon angiotensin-angiotensin II system, i.e. ACE inhibitors and angiotensin II receptor antagonists (ARA II), usually lead to oral burning

symptoms. This is contrary to our finding since our patient was initially taking ACE inhibitor (ramipril) and calcium channel blocker (felodipine) which was later replaced with ARA II (losartan). Our finding is in concordance with Castells et al. [12] who reported that angiotensin II receptor antagonist class of drug does not necessarily lead to burning mouth symptoms, since eprosartan was switched to valsartan at equivalent doses and burning mouth symptoms ceased in their patient.

A study of Marques Soares [13] reported that among other drugs only the hypotensives and diuretics were risk factors for burning mouth syndrome, which is in concordance with Hakeberg et al. [14] and Tarkkila et al. [15] who showed that the consumption of antihypertensives significantly increased the risk of suffering from hot mouth. Recently, a case report on clindamycin induced burning symptoms, xerostomia and dysgeusia has been published [3].

In most cases reported so far, time from introducing a new drug and the occurrence of burning mouth symptoms in patients varied between 2 weeks to 7 years. In our case, the patient was taking Triapin during the period of one year and after that she developed burning mouth symptoms.

Half-life of the Triapin is 25 hours and the patient was free of burning symptoms after 7 days. It seems that the dose of Triapin was 0.02mg after 7 days which may explain the absence of burning symptoms in the patient after 7 days. Traintos and Kanakis [7] reported that within 1 week of the enalapril discontinuation, the burning sensation gradually disappeared and since then, the patient was free of burning symptoms. This finding is in concordance with ours as well as with the ones of Brown et al. [8] and Vlasses et al. [9]. Chen et al. [16] reported that burning symptoms disappeared 2 to 3 weeks after candesartan has been excluded.

The temporal sequence of events and the lack of underlying concomitant diseases or other medications suggest that the association between burning mouth syndrome and Triapin was causal.

4. CONCLUSION

Connection between burning mouth symptoms and drug intake, especially antihypertensives (ACE inhibitors and rarely angiotensin II receptor antagonists) is a known fact. In the literature, BMS was only associated with those compounds which act upon the angiotensin-renin system. This finding is in contrast to ours, since the offending drug was replaced with the one which also acts upon the angiotensin-renin system. However, our patient was free of oral burning symptoms.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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