Telmisartan-induced angioedema: A rare clinical finding

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ABSTRACT

Angioedema is swelling that mostly involves the soft tissue of the eyelids, nose, throat, tongue, mouth, or genitals. Angiotensin converting enzyme inhibitors induced angioedema is a rare but potentially dangerous adverse effect. A 52-year-old female patient attended the emergency department with the history of swelling over the eyes and face past 3 days and having difficulty in swallowing of the food. Her medical history revealed that the patient was recently diagnosed with hypertension and was on the combination of Telmisartan and Amlodipin (40 mg + 5 mg). The medicines were immediately stopped and the patient was managed symptomatically for angioedema. The symptoms declined after 5 days of discontinuity of medicines. The case report can be considered as rare adverse effects of the Telmisartan. Angiotensin receptor blockers induced angioedema is a rare presentation.

Keywords: Angioedema, angiotensin receptor blockers, telmisartan

Introduction

Angioedema is swelling in the deep layers of the skin, which mostly involves the soft tissue of the eyelids, nose, throat, tongue, mouth, or genitals. ACE (Angiotensin converting enzyme) inhibitors induced angioedema is a rare but potentially dangerous adverse effect. The overall incidence of angioedema caused by ACE is thought to range between 0.1% and 0.5%.[1] A comparative study on the relationship between angioedema and the drugs targeting the renin-angiotensin system has suggested a low risk of angioedema with Angiotensin receptor blockers (ARBs).[2] ARBs do not exert their effects as ACE, that is, they are not expected to cause bradykinin accumulation and therefore angioedema.[3] People who experienced angiotensin-converting enzyme inhibitor angioedema (ACEi-AE) may have some recurrence when they are switched to an ARBs. However, epidemiological studies on large cohorts have shown that ARB does not increase the likelihood of angioedema compared to other anti-hypertensives.[4] Use of antihypertensive drugs for control of blood pressure is associated with the glossitis, oral ulcer, stomatitis, dysgeusia, cheilitis, oral lichen planus, angioedema with betablockers, and aspirin.[5] Clinical manifestations consist of edema of face, lips, tongue, uvula and upper airways, requiring intubation or tracheotomy in severe cases. This case is a unique kind in its rare presentation as the side effect of the ARB (Telmisartan).

Case Report

A 52-year-old female patient attended the emergency department (ED) with the history of swelling over the eyes and face past 3 days and having difficulty in swallowing of the food. The patient was a known case of osteoarthritis and obesity. She has no history of drug allergy. The patient was recently diagnosed with hypertension and recorded blood pressure was 160/90 mm of Hg. The patient visited physician and started on the combination of Tab. Telmisartan and Amlodipin (40 mg + 5 mg) at night. After taking the drug for 5 days, the patient noticed swelling over the face, which was more on the right eye then left eye, mild swelling over the lower lip with throat pain and difficulty in swallowing of the food past...
3 days [Figure 1]. She had stopped taking drugs at the onset of the symptoms, waited for 3 days before presenting to the emergency department. In the emergency department, the patient was conscious, oriented, following the commands, and no signs of respiratory distress. The airway was patent, no secretion or blood in airway, and no gurgling sound. Breathing pattern was normal, trachea was in midline, B/L chest movements were equal, no respiratory distress, and not using the accessory muscle of the respiration. The Glasgow coma scale score was 15 (E4V5M6), pupils were B/L NSNR and no lateralization sign found. At the time of observation, blood pressure was 160/80 mm of Hg, Pulse – 88/min, SPO₂ – 99% on room air, Temp – 99°F and random blood sugar was 150 mg/dl. The medicine history revealed that patient was taking NSAID and steroids chronically for her knee pain, whereas not taken any ACE and ARB in the past. Further examination revealed edema and ecchymosis over the right eye, right conjunctiva was congested, restricted eye ball opening, moreover, left eye was mildly edematous but posterior pharyngeal wall, uvula, B/L tonsils, anterior and posterior pillars were congested [Figure 2]. Laboratory investigations were suggestive of elevated C-reactive protein (CRP = 52.2 mg/L), elevated erythrocyte sedimentation (ESR) -28 mm/h, and WBCs count were 9600 m/mm cu.

The patient was under observation in ED for few hours, as the patient was conscious, oriented, following commands, no signs of respiratory distress, no cyanosis, and skin rashes. Patient was discharged and advised to discontinue tab. Telmisartan 40 mg and take tab. Fexofenadine for 3 days. Furthermore, a combination of tab. Atenolol 50 mg and Chlorothiazide 12.5 mg was given at the time of discharge for her blood pressure management. She was also advised to visit outpatient department for follow-up or ED if any warning signs reappear. After 5 days, the patient had shown a gradual decline of swelling, pain, and dysphasia. Her blood pressure was managed with the prescribed medicines. The level of ESR and CRP also declined. The adverse drug reaction can be labeled as “probable” as per the World Health Organization Uppsala monitoring center and NARANJO score of five. Based on history of new drug introduction and onset of the symptoms—angioedema, recovery after drug discontinuation, tab. Telmisartan 40 mg, was identified as the cause of the peculiar clinical presentation and was therefore permanently discontinued for the patient.

**Figure 1:** Edema and ecchymosis over the right eye

**Discussion**

Previous studies have shown a rare association between ACE and angioedema and the risk for angioedema was even lower with ARBs than with ACE.[8] ARB-induced oral ulcer, aphthous ulcer, and angioedema are not well known.[9] More than 40% all patients taking Telmisartan have reported fever and oral discomfort.[7] The surveillance reported in this case report can be considered as rare adverse effects of the ARB (Telmisartan). In present case, the patient has presented with the history of facial and mild tongue swelling, difficulty in swallowing the food followed by the tab Telmisartan intake. In this context, a case report by Kim H, et al[8] highlighted that a patient had no history of allergy and there was the possibility of ARB-related angioedema. Additionally, Diwan A et al[2] highlighted a case report of old hypertensive female, who was hospitalized for painful, bleeding mouth ulcers, angioedema (lip swelling and glossitis), and dysphasia. The history revealed that the patient has recent medication history of tab. Telmisartan for hypertension. The findings of this study were also supported by the present study. Furthermore, A RCT has reported that Telmisartan 40 mg. and Ramipril 5 mg. have fewer incidences of the cough and angioedema.[9] In a study by Mancia and Schumacher[9] it was highlighted that angioedema was present in only 0.2% cases who were receiving Telmisartan 40 mg. On the follow-up visit after 5 days, the symptoms of the patient subsided after discontinuing the drug and antihistamine consumption; there were no other offender drugs that could have caused the symptoms. The level of ESR and CRP also declined. Her symptoms were suggestive of an allergic reaction. Apart from a recent change in her anti-hypertensive medications, the adverse effect of offending drug effect was successfully confirmed by dechallenge strategy. The evidences suggest the uncommon occurrence of telmisartan-induced angioedema.

**Conclusions**

Primary care physicians have a significant role in the management of hypertension. ACE and ARB are the most frequently used drugs for the management of hypertension. ACE associated angioedema
Kumar, et al.: Telmisartan-induced angioedema: A rare clinical finding

and oral toxicity as the uncommon side effects. The observations reported in the case report can be considered as rare adverse effects of the ARB (Telmisartan). ARB-induced angioedema is a rare presentation; so it is necessary for the physician to be aware of himself and patient towards the ARB-induced angioedema. Further research is needed for the ARB-associated increased angioedema.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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