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Research

# LOSARTAN INDUCED ANGIO EDEMA: A RARE CASE REPORT

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## Abstract

Angioedema is a rapid, localized swelling of subcutaneous or submucosal tissues, which can be life-threatening when involving the airway. It is most often associated with angiotensin-converting enzyme inhibitors (ACEIs), while angiotensin receptor blocker (ARB)-induced angioedema is rare, with an incidence of approximately 0.1%. Losartan-related cases are uncommon, and onset can be delayed, occurring even after years of therapy. **Methods**
We present the case of a 75-year-old male with a 15-year history of hypertension managed with losartan 50 mg daily and ecosprin 75/10 mg. :he patient was evaluated in the emergency department for acute-onset swelling of the tongue, neck, and face, along with throat itching. Clinical examination and laboratory investigations, including complete blood count and immuno-globulin E levels, were performed. Suspected offending drug was discontinued and replaced with an alternative anti-hypertensive. Supportive treatment was initiated. **Results:**Vital signs on presentation were stable. Laboratory parameters were within normal limits. Losartan was stopped and replaced with cilnidipine. The patient received intravenous hydrocortisone, chlorpheniramine, and betamethasone, along with supportive therapy. Significant improvement was observed within 24 hours, with complete resolution of symptoms over subsequent days. The patient was discharged in stable condition on oral antihistamines and an alternative antihypertensive regimen, with no recurrence noted during follow-up. **Conclusion:**Although uncommon, ARB-induced angioedema can occur unpredictably, even after prolonged use. Early recognition, immediate discontinuation of the offending agent, and supportive management are essential to prevent airway compromise. Clinician awareness and patient education regarding potential hypersensitivity reactions to ARBs remain crucial for early intervention and improved outcomes.

**Keywords:** Losartan, Angioedema, ARB induced angioedema, Hypertension, Drug Induced hypersensitivity.

## INTRODUCTION

Angioedema is a non-pitting edema affecting subcutaneous or submucosal tissues,primarily in areas like the face, tongue, lips, neck, and larynx, and can become life-threatening if the larynx is involved, while intestinal angioedema causes pain similar to acute abdomen [1]. Angiotensin receptor blockers (ARBs) prevent angiotensin II from binding to its receptor and are used to treat conditions like hypertension and heart failure, offering a similar effect to ACE inhibitors but with fewer side effects, including a lower incidence of angioedema at 0.1%. Studies indicate that ARBs have about half the rate of angioedema compared to ACE inhibitors [2]. In this case report we present a case of losartan induced angioedema, which has not been well documented [3]. This paper discusses a case of angioedema caused by losartan, an ARB, out of the twenty reported cases to date.

## METHODS

This is a single-patient case report describing a 75 years old male who developed angioedema temporally associated with continuation of losartan. Clinical data ere collected from the patients medical records and by direct interview.

## RESULTS

A 75 years old male patient was brought to emergency department with the complaints of swelling of tongue, throat itching and swelling in neck & face. Which started day before hospitalization. He had history of hypertension for the past 15 years and had been taking tab Losartan 50mg once daily. He was also on tab Ecosprin 75/10 mg for cardiovascular prophylaxis. His vitals in emergency department were HR-88bpm, BP-151/73 mmHg, spO2-97 in room air, RR-18/min, and he was afebrile. On clinical evaluation, angioedema and hypertension were diagnosed. Immediate treatment included the administration of injection hydrocortisone 100mg, inj Avil 1 ampule and inj Betnosol 4mg was. Considering Tab Losartan as the causative factor, the drug was stopped and tab Cilacar 10mg once daily was started as an alternative antihypertensive agent**.**

Lab investigations were conducted and parameters were found to be normal (table 1).

**Table 1:On admission biochemical laboratory values for our patient**

| PARAMETERS | RESULT | REFERENCE VALUE |
|---|---|---|
| HAEMOGLOBIN | 16.3 | 13.0-17.0g/dl |
| RBC COUNT | 5.4 | 4.5-5.5mil/cmm |
| PCV | 49 | 40-50% |
| MCV | 90.7 | 83-101fl |
| WBC COUNT | 10.34 | 4.0-10.0 K/uL |
| LYMPHOCYTES | 47.3 | 20-40 % |
| NEUTROPHILS | 43 | 40-80 % |
| ABSOLUTE LYMPHOCYTES | 4.89 | 1-3 K/uL |
| PLATELET COUNT | 208 | 150-400 K/uL |

Also Immunoglobulin IgE was done and it was found to be normal. The patient responded well to the treatment with a gradual reduction in swelling and he was shifted to ward. In ward he was treated with the following medications (table-2).

**Table 2: Treatment for our patient**

| DRUG NAME | DOSE | ROUTE | FREQUENCY | DAY 1 | DAY 2 |
|---|---|---|---|---|---|
| INJ AVIL | 1 AMPULE | IV | TID | ✓ | |
| INJ H-CORT | 100 MG | IV | STAT | ✓ | |
| TAB CILACAR | 10 MG | PO | 1-0-0 | ✓ | ✓ |

| | | | | | |
|---|---|---|---|---|---|
| TAB ECOSPRIN AV | 75/10 MG | PO | 0-1-0 | ✓ | |
| INJ NERVIJEN | 1A MPULE | IV | 1-0-0 | ✓ | |
| INJ PAN | 40 MG | IV | 1-0-0 | ✓ | ✓ |

The patient showed continued clinical improvement and was discharged in stable condition with oral hydroxyzine, bilastine, pantoprazole , multivitamin, aspirin + atorvastatin. Tab losartan were exchanged cilnidipine.

## DISCUSSION

Angioedema is a rare but serious adverse effect associated more frequently with angiotensin-converting enzyme inhibitors (ACEIs) than with angiotensin receptor blockers (ARBs). While ACEIs are well-known to increase bradykinin levels, contributing to the pathophysiology of angioedema, ARBs like losartan typically do not elevate bradykinin, which is why they are considered safer alternatives in patients who experience ACEI-induced angioedema [4]. However, rare cases of ARB-induced angioedema have been documented, and the underlying mechanism remains unclear, suggesting a possible non-bradykinin-mediated hypersensitivity reaction. Losartan, a selective AT1 receptor blocker, is generally well-tolerated, with angioedema incidence reported to be approximately 0.1%, significantly lower than that of ACEIs [2]. Nonetheless, case reports, such as those by Mann et al. and Niazi et al., have highlighted occurrences of losartan-induced angioedema, often involving the lips, tongue, face, oropharynx, and sometimes the upper airway, with potential for airway compromise [2,3]. In our case, the patient had been on losartan for several years before presenting with acute onset of angioedema, primarily affecting the face, neck, and tongue. This aligns with prior observations that ARB-induced angioedema may not necessarily occur immediately upon initiation of therapy and can present unpredictably even after long-term use [5]. In our patient, rapid improvement was observed following cessation of losartan and initiation of corticosteroid and antihistamine therapy, without the need for airway intervention. This case highlights the importance of clinician awareness regarding the potential, albeit rare, risk of ARB-induced angioedema. Recognizing the signs early and discontinuing the offending agent can prevent significant morbidity or even mortality. It also underlines the necessity for patient education regarding potential allergic reactions, even with long-term medications previously deemed safe.

## CONCLUSIONS

Though angioedema due to ACE inhibitors has been well documented, but angioedema due to ARBs like losartan has not. In our case report we document a case of angioedema induced by losartan. We, the authors by reporting this case, wants to make clinicians aware ARB, however rarely can cause angioedema, which can be life threatening if clinicians are not aware about it. Early identification and prompt discontinuation of losartan are crucial to prevent severe complications. Alternative antihypertensive agents should be considered for patients with suspected ARB-induced angioedema.

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