

# Rare case of lichen planus caused by ACE inhibitors

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## Abstract

The authors present the case of a patient 45 years old female, born in Maharashtra, observed at the Outpatient department (OPD) of the hospital in June 2014, diagnosed as a newly detected hypertension started on low dose ACE inhibitors i.e. Ramipril. developed Extensive rash distributed symmetrically over the trunk and limbs sparing mucous membrane. On clinical and Histopathological examination found to have Drug induced lichen planus which is very rare side effect of ACE inhibitors. Ramipril was discontinued and another class of antihypertensive was started. Authors present this case regarding this rare skin manifestation of ramipril, we wish to emphasise that these skin manifestations can be reversed within a short span of time if recognised early.

**Keywords:** lichen planus, ACE inhibitors.

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## INTRODUCTION

Angiotensin-converting enzyme (ACE) inhibitors are increasingly recognized as having an important role in the treatment of hypertension and/or end-organ disease, in congestive heart failure, in diabetic nephropathy to prevent progression and besides this also for other clinical uses. They are the most frequently used because the incidence of severe adverse events is comparatively low but noteworthy (28%).<sup>1</sup> Other than their side effects on various systems, these agents are known to cause dermatological side effects. Skin rashes, pruritus and urticaria are frequent and other rare lesions include photosensitivity, onycholysis, various skin eruptions, hyperhidrosis, pemphigus, bullous pemphigoid, lichen planus, erythema multiforme, toxic epidermal necrolysis and steven-johnson syndrome.<sup>2</sup> This case report is aimed for cutaneous adverse effects of ACE inhibitors and also

to familiarize clinicians as well as dermatologists to dermatological manifestations while prescribing ACE inhibitors like ramipril which are frequently used as antihypertensives now-a-days.

## CASE REPORT

The authors present the case of a patient 45 years old female, born in Maharashtra, observed at the Outpatient department (OPD) of the hospital in June 2014, with complaints of headache, blurring of vision gradual onset dyspnoea (MRC GRADE 1) weakness, easy fatigability for moderate exertion. patient was not on any medication. On clinical examination diagnosed as Essential Hypertension started on low dose ACE inhibitors i.e. Ramipril. She had not taken any drug treatment before or at the time of developing skin eruptions. After 1<sup>st</sup> dose patient developed Extensive rash distributed symmetrically over the trunk and limbs sparing mucous membrane. These eruptions did not extend further in the ensuing days. Blood investigations were unrevealing. ESR was within normal range, anti-nuclear antibody test (ANA) was negative. Given the close temporal relationship between the skin eruptions and the first dose of ramipril, it was felt that the skin eruptions could have been caused by ramipril. Therefore ramipril was discontinued and another class of antihypertensive was started. The patient was referred to a dermatologist who, after taking history and local examination, concluded that these were lichenoid drug

eruptions due to ramipril use .Skin biopsy taken, suggestive of lichenoid dermatitis consistent with lichen planus. Lesions gradually disappeared over a period of week without any treatment .Authors present this case

regarding this rare skin manifestation of ramipril, we wish to emphasise that these skin manifestations can be reversed within a short span of time if recognised early.



**Figure 1:** Shows rash distributed on lower limbs after first dose of ramipril



**Figure 2:** Progressive clearing of rashes after stopping ramipril



**Figure 1:** Histology section shows epithelial hyperparakeratosis, mild acanthosis and lymphocytic infiltration immediately underlying epithelium

Lichenoid eruptions are uncommon skin rashes that can be induced by many environmental agents, medications or industrial by-products such as inhaled particles. When it has been induced by a medication it can be called more specifically a lichenoid drug eruption.<sup>3</sup> It is an inflammatory dermatosis of the mucocutaneous surfaces that can present with variety of clinical manifestations and is an uncommon cutaneous adverse effect of several drugs<sup>4-5</sup>. The rash of a lichenoid drug eruption can sometimes be difficult to distinguish from idiopathic lichen planus because of similarities in the clinical appearance and the pathology seen on skin biopsy. but some features that may help to distinguish them, which may include:

- Extensive rash distributed symmetrically over the trunk and limbs
- Photo distribution – the rash is predominantly in areas exposed to the sun
- Rash may be scaly resembling eczema or psoriasis
- Wickham striae are usually absent
- Nail and mucous membrane (e.g., mouth) involvement is uncommon (oral lichen planus)
- More likely to resolve leaving marked pigmentation<sup>6,7</sup>

Angiotensin-converting enzyme (ACE) inhibitors have emerged as important therapeutic agents for the treatment

of many medical conditions, such as heart failure, hypertension, and diabetic nephropathy. Like most other medications, ACE inhibitors are associated with adverse reactions. Recognized adverse cutaneous effects include Angioedema (0.1-0.2%)<sup>8</sup>, bullous eruptions urticaria erythema multiforme and vasculitis.<sup>9</sup> The mechanisms for ACE inhibitor induced adverse reactions in the skin are mostly based on non immunological mechanisms. Researchers have demonstrated the expression of complete rennin angiotensin system in human skin including the precursor of angiotensin II, angiotensinogen, renin, angiotensin converting enzyme, and receptors of the AT1 and AT2 receptor subtype, but their function is unknown.<sup>10</sup> Other common side effects of ACE inhibitor therapy are dry cough (found in 44%of cases)<sup>11</sup>, hypotension, hyperkalaemia, renal failure, dysgeusia (gustatory hallucination), proteinuria, agranulocytosis. Other uncommon adverse effects are headache, dizziness, fatigue, nausea, diarrhoea, impotence, loss of libido, myalgia, muscle cramps, hair loss, hepatitis, cholestatic jaundice, acute pancreatitis, and the occurrence of anti-nuclear antibodies<sup>12</sup>

## CONCLUSION

To conclude our case regarding this rare skin manifestation of ramipril, we wish to emphasise to familiarize clinicians as well as dermatologists to

dermatological manifestations while prescribing ACE inhibitors like ramipril which are frequently used as antihypertensives now-a-days and these skin manifestations can be reversed within a short span of time if recognised early.

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