

# Levocetirizine Induced Fixed Drug Eruption: A Rare Case Report

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## Abstract

Antihistamines are routinely used for allergic rhinitis, urticaria, eczema and some other allergic disorders. Levocetirizine is piperazine derivative antihistamine with few cutaneous side effects. Fixed drug eruption (FDE) to piperazine derivatives is very rare. FDE to levocetirizine is very rare. Clinicians should have a high index of suspicion and should be aware of the possibility of reactions to antihistaminic drugs, which themselves are very frequently prescribed to manage drug reactions. Hence, before prescribing antihistaminics, it is very important for every clinician to take a proper history, clinical examination and history of any drug reactions. Here, we report a case of FDE to levocetirizine.

**Keywords:** Allergic rhinitis, Antihistamines, Cetirizine, Fixed drug eruption, Levocetirizine, Maculopapular

## INTRODUCTION

Antihistamines are routinely used for allergic rhinitis, urticaria, eczema and some other allergic disorders. The newer antihistamines have a more specific action on histamine receptors and have very few side-effects and are very useful for both otorhinolaryngologists and dermatologists.<sup>1</sup> Cetirizine and levocetirizine are piperazine derivative antihistamines with few cutaneous side effects. Fixed drug eruption (FDE) to these piperazine derivatives is very rare.<sup>2</sup> Most adverse effects of antihistamines are caused by their own binding activities to H<sub>1</sub>-receptors, muscarinic receptors, serotonin receptors and cardiac ion currents. These mechanisms may cause drowsiness, impairment of cognitive function, dry eyes, dry mouth and urinary retention.<sup>3</sup> Hypersensitive cutaneous lesions due to levocetirizine are very rare and very few cases of FDE due to levocetirizine are documented.<sup>2,4-6</sup> Here, we report a case of FDE due to levocetirizine that was given to the patient for allergic rhinitis.

## CASE REPORT

A 41-year-old female presented to Department of ENT with chief complaints of sneezing, rhinorrhea, watering from eyes and nasal obstruction. On nasal examination, septum was centrally placed, and inferior turbinate hypertrophy

was seen. Patient was diagnosed as a case of allergic rhinitis. Patient also gave a history of similar attacks of rhinitis in past 2-3 years, and on taking levocetirizine patient got some relief. Patient was prescribed levocetirizine 5 mg twice a day along with fluticasone nasal spray. After 2 days patient arrived at ENT outdoor with multiple, itchy, erythematous, edematous maculopapular lesions on the back (Figure 1) and left arm and right forearm (Figure 2). Patient gave the history of appearance of these lesions 4-5 h after taking the medication. Patient also gave the history of similar lesions 3-4 times in the past, but no history of any specific medicine at that time was correlated as she took a lot of medicines for every complaint from a local doctor. Patient was referred to a dermatologist for further management. On examination, it was found that pre-existing patches are also present at these sites. A provisional diagnosis of FDE due to levocetirizine was made, and patient was advised to avoid levocetirizine and cetirizine. On the follow-up after healing of lesions, provocative test was done, and lesions showed the reactivation with itching and erythema. Patient was advised to avoid levocetirizine and cetirizine in future.

## DISCUSSION

FDE is a common form of cutaneous adverse drug reactions whose exact etiology is unknown. They are supposed to be caused by epidermal CD8 T cells, which are



**Figure 1: Erythematous, edematous and itchy lesion on the back of the patient**

retained in the lesions forming an immunologic memory, which gets activated on re-challenge.<sup>7</sup> FDE can occur with several drugs, common ones are sulfonamides, non-steroidal anti-inflammatory drugs, antimicrobials and oral contraceptives.<sup>8</sup> However, FDE due to antihistaminics are very rare. FDE reported to H<sub>1</sub>-antihistaminics are cyclizine, diphenhydramine, phenothiazines, hydroxyzine,<sup>6</sup> loratidine<sup>9</sup> and in few cases with cetirizine and levocetirizine.<sup>2,4,5,10</sup> Cetirizine, levocetirizine and hydroxyzine have the piperazine structure with same pharmacological actions. When administered orally hydroxyzine is converted into cetirizine. Levocetirizine is the R-enantiomer of cetirizine.<sup>5</sup>

Most common adverse effects due to antihistaminics are loss of appetite, nausea, vomiting and epigastric distress. Drug allergies like drug fever and photosensitisation are seen mainly with topical application. Hematological side effects include leucopenia; while agranulocytosis and hemolytic anemia are rarer.<sup>1</sup>

## CONCLUSION

FDE to levocetirizine is very rare but documented in few cases. It is a rare side-effect of levocetirizine. It was concluded that any antihistamine can cause FDE. So, before prescribing antihistaminics, it is very important for every clinician to take a proper history, clinical examination and history of any drug reactions. Clinicians should have a high index of suspicion and should be aware of the possibility of reactions to antihistamine drugs, which themselves are very frequently prescribed to manage drug reactions.



**Figure 2: Erythematous and itchy lesions over left arm and right forearm of the patient**

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