

# Insights from Experts on Levocetirizine for Pediatric Allergies

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## Abstract

Histamine is central to allergic reactions and is primarily concentrated in mast cells throughout the body. The four types of histamine receptors (H1, H2, H3, and H4) influence both the peripheral and central nervous systems. H1 receptors, found in various tissues, induce itching, mucosal secretion, muscle contraction, and blood vessel dilation. Histamine stabilizes the active state of H1 receptors, while H1-antihistamines, such as levocetirizine, bind to different sites, inducing the inactive state and counteracting histamine effects. Levocetirizine, a second-generation antihistamine, selectively binds to H1 receptors and effectively inhibits allergic responses without significant sedative effects. It is recommended for both seasonal and perennial rhinitis and exhibits a favorable long-term safety profile. Studies on levocetirizine in pediatric patients show its efficacy in reducing allergy-related symptoms with good tolerability and safety. Notably, levocetirizine demonstrates superiority in managing symptoms of chronic idiopathic urticaria and allergic rhinitis compared to other commonly used antihistamines. This paper discusses the role of levocetirizine as a safe option for treating allergic conditions in the pediatric population and is further supported by insights from clinical experts.

**Key words:** Allergic reactions, Allergic rhinitis, Chronic idiopathic urticaria, Histamine, Levocetirizine, Pediatric patients, Perennial rhinitis, Seasonal rhinitis

## INTRODUCTION

At present, one of the most commonly administered drugs is antihistamines. Antihistamines are used to treat symptoms that result from the release of histamine, which is common in rhinitis, conjunctivitis, asthma, urticaria, and anaphylaxis, among other allergic diseases.<sup>[1]</sup> The discovery of second-generation H1-antihistamines marked a significant advancement in the development of antihistamines. These drugs are either non-sedating or only mildly sedative due to their restricted ability to cross the blood–brain barrier.<sup>[2]</sup> Factors such as good efficacy, quick onset of action, a prolonged effect of medication, and a lack of side effects are looked for when selecting an H1-antihistamine.<sup>[2]</sup> The 2017 European Academy of Allergy and Clinical Immunology guidelines advise treating

pediatric patients with the same treatment regimen as adults for chronic urticaria but with caution.<sup>[3]</sup> This review presents the mode of action of antihistamines and gives pediatricians expert insights on the effect of levocetirizine antihistamine.

## HISTAMINES: THE ALLERGIC RESPONSE MODULATORS

Histamines serve as a central mediator in allergic reactions, with elevated concentrations primarily in mast cells located in the skin, respiratory system, and gastrointestinal tract. The four types of histamine receptors – H1, H2, H3, and H4 – enable its actions, influencing both the peripheral and central nervous systems. H1 receptors, present in various tissues, induce itching, nasal mucosa secretion, bronchial and intestinal smooth muscle contraction, and small blood vessel dilation.<sup>[1]</sup>

The H1 receptor functions as a “cellular switch” and maintains equilibrium between the inactive and active states. Histamine stabilizes the active state by cross-linking sites on transmembrane domains III and V [Figure 1]. In contrast,

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H1-antihistamines bind to different receptor sites, domains IV and V, inducing the inactive state and producing an effect opposite to histamine. Therefore, H1-antihistamines are more accurately termed “H1-antihistamines” rather than “histamine antagonists.”<sup>[2]</sup>

## ACTION OF ANTIHISTAMINES

H1-antihistamines are frequently employed to alleviate symptoms arising from histamine release in allergic conditions. Antihistamines exhibit anti-inflammatory and anti-allergic effects by:<sup>[1]</sup>

- Reducing the production of pro-inflammatory cytokines
- Limiting mediator release from mastocytes and basophils
- Suppressing eosinophil recruitment in late-phase allergic reactions
- Decreasing the expression of membrane receptors such as intercellular adhesion molecule 1 in nasal epithelial cells and vascular endothelium.

## LEVOCETIRIZINE: A SECOND-GENERATION ANTIHISTAMINE

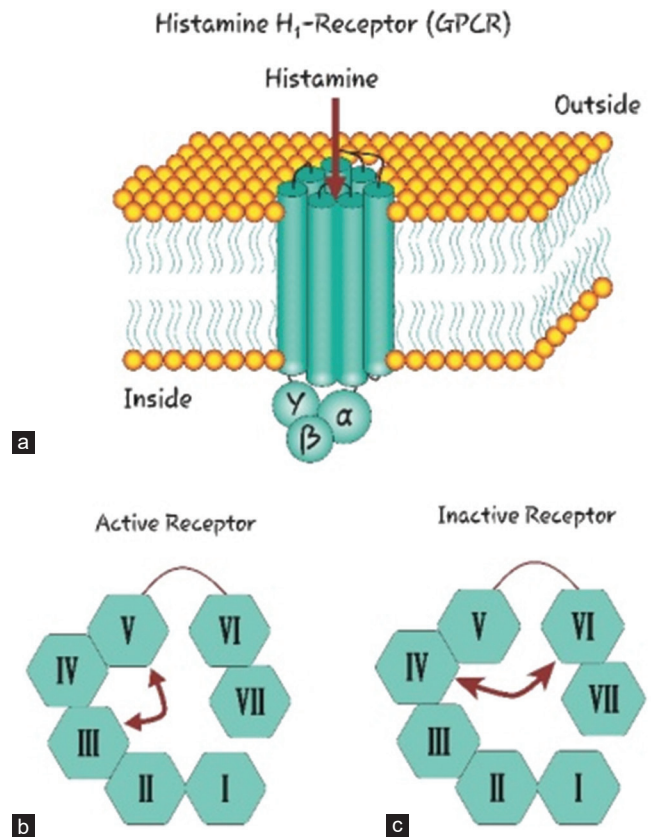
Levocetirizine, classified as a second-generation antihistamine, selectively binds to H1 receptors. This targeted interaction effectively inhibits the allergic response, acting at the molecular level to modulate the effects of histamine. It was observed that second-generation antihistamines exhibit minimal sedative effects. This characteristic is particularly advantageous when considering their administration to pediatric patients with AR.<sup>[3,4]</sup>

The benefits of this drug extend beyond managing acute episodes and are considered suitable for the long-term treatment of allergic conditions with a reduced likelihood of adverse effects, contributing to an enhanced safety profile.<sup>[5]</sup>

## EFFICACY AND SAFETY PROFILE OF LEVOCETIRIZINE IN PEDIATRIC PATIENTS

The guidelines provided by allergic rhinitis and its impact on asthma recommend second-generation oral antihistamines for the management of both seasonal allergic rhinitis (SAR) and perennial allergic rhinitis.

Cranswick *et al.* studied the pharmacokinetics and pharmacodynamics of levocetirizine in children aged 12–24 months with recurrent cough and allergies. The primary goal was to confirm the appropriate dosage (0.125 mg/kg



**Figure 1: Histamine H<sub>1</sub>-receptor in a membrane with 7 transmembrane domains. (a) Histamine stimulates the receptor after its penetration into the central core of the receptor. (b) Surface view of an activated receptor with histamine linking domains III and V. (c) Surface view of an inactive receptor with anti-histamine linking domains IV and VI. Source: Adapted from Church DS *et al.* (2011)**

twice daily). The study showed high inhibition of wheal and flare and reported a good safety profile over 3 months.<sup>[6]</sup>

De Blic *et al.* assessed the efficacy of levocetirizine in 177 children with SAR through a double-blind, placebo-controlled study. The primary goal was to reduce SAR symptoms, measured by the total four symptom score (T4SS). Levocetirizine (5 mg daily) significantly reduced T4SS by 94.1% over placebo ( $P < 0.001$ ) and improved nasal congestion. The study confirmed the efficacy and safety of levocetirizine for managing SAR symptoms in children.<sup>[7]</sup>

Hampel *et al.* investigated the safety of levocetirizine dihydrochloride oral drops in infants and children with allergic rhinitis (AR) or chronic idiopathic urticaria (CIU). Two multicenter, double-blind studies involved infants aged 6–11 months ( $n = 69$ ) and children aged 1–5 years ( $n = 173$ ) who received levocetirizine (1.25 mg once or twice daily) or placebo for 2 weeks. Safety was assessed by monitoring treatment-emergent adverse events. Levocetirizine at 1.25 and 2.5 mg/day was well tolerated and safe for treating AR and CIU in these age groups.<sup>[8]</sup>

Gupta and Matreja conducted a randomized study comparing the effectiveness of the montelukast and levocetirizine combination as AR treatment for 6 weeks. In this study, 102 patients were included, and the primary outcome was the change in total daytime nasal symptoms. Secondary outcomes included nighttime nasal, daytime eye, and composite symptom scores. The combination treatment showed significant improvement in total daytime nasal, nighttime nasal, and composite symptoms ( $P < 0.05$ ). Overall, the combination was effective in reducing symptoms of AR.<sup>[9]</sup>

The above findings from multiple studies highlight the efficacy of levocetirizine and its combination with montelukast in effectively reducing symptoms of CIU and AR. This emphasizes its superior antihistamine properties compared to other antihistamines.

## CONCLUSION

Levocetirizine is a strong second-generation H1 antihistamine and is good for both CIU and AR. It reduces the symptom severity of patients suffering from AR. In addition, it possesses anti-inflammatory and anti-allergic properties. Its combination with montelukast has an earlier response with relief from residual symptoms.

## ACKNOWLEDGMENT

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## EXPERT OPINION

### 1. Dr. Deepak Avhad, M.B.B.S., DCH

Avhad Bal Rugnalaya Clinic, Sinnar, Nasik, Maharashtra

The impact of AR on the quality of life (QOL) and sleep in children is rated as 5/5, signifying a significant negative impact. The Early Prevention of Asthma in Atopic Children (EPAAC) study highlights the 18-month long-term safety of levocetirizine among children. Levocetirizine demonstrates symptom control with a rating of 5/5 over 24 h while fexofenadine scores 2/5 in the same category. The combination of levocetirizine hydrochloride and montelukast sodium demonstrates better product stability and clinical effectiveness. In syrup formulation, levocetirizine gets well absorbed in the stomach, while montelukast shows a lower absorption rate due to low solubility in acidic conditions. In a suspension formulation, both levocetirizine and montelukast are easily absorbed. Levocetirizine in oral solution is indicated for relieving symptoms associated with PAR in children aged 6 months

to 2 years. I am in favor of levocetirizine over fexofenadine, as no interactions with macrolide antibiotics and food have been reported.

### 2. Dr. Shiv Ratan Maheshwari, M.B.B.S., DCH

Maheshwari Child Clinic, Jaipur, Rajasthan

Children with AR have poor sleep quality. Levocetirizine is safe in atopic children aged 12–24 months, according to the EPAAC research. Levocetirizine is highly rated at 5/5 for its effectiveness in controlling symptoms over 24 h, whereas fexofenadine scores a 3/5 in the same category. The preference for maintaining the integrity of the levocetirizine hydrochloride and montelukast sodium combination for better product stability and clinical effectiveness is recommended. In syrup formulation, the bioavailability of montelukast is lower, potentially leading to an inadequate dosage. Similarly, in suspension formulation, adequate intestinal absorption of levocetirizine and montelukast is ensured. I believe that levocetirizine is more beneficial compared to fexofenadine in managing AR and PAR in children. Furthermore, as per my clinical experience, levocetirizine has a better safety profile than fexofenadine as no specific food-drug or drug–drug interactions are known, making it a potentially better option.

### 3. Dr. RK Yadav, M.B.B.S., DCH

V Care Children Hospital, Bhopal (MP)

Sleep is impacted in children with AR. Levocetirizine and fexofenadine were rated 5/5 for effectiveness. A combination of levocetirizine hydrochloride and montelukast sodium is recommended. In syrup formulation, montelukast precipitates in acidic conditions and results in inadequate intestinal absorption. However, both levocetirizine and montelukast have better absorbability in suspension formulations. As per my experience, levocetirizine is excellent for AR and PAR in children and is safer than fexofenadine.

### 4. Dr. V Dilip Kumar Jain, M.B.B.S., DCH, DNB

Ambica Child Care Clinic, Chennai, Tamil Nadu

Allergic rhinitis impacts sleep in children. Levocetirizine controls symptoms effectively over 24 h, which is similar to fexofenadine. Better product stability and clinical effectiveness are observed with the levocetirizine hydrochloride and montelukast sodium combination. Montelukast in syrup formulations gets precipitated in acidic conditions, leading to an inadequate dosage. In my experience, levocetirizine improves the QOL in children and it is safer than fexofenadine due to no food-drug and drug–drug interactions.

**5. Dr. Gowtham Sivaswamy, M.B.B.S., MD**

Dr. Gowtham Child Care Clinic, Chennai, Tamil Nadu

Allergic rhinitis receives a low score of 1 for its impact on children. Levocetirizine is safe for atopic children (12–24 months), according to the EPAAC research, and control symptoms effectively over 24 h. Levocetirizine hydrochloride and montelukast sodium have better product stability and clinical effectiveness. In both syrup and suspension formulations, levocetirizine is well absorbed, but montelukast is precipitated in acidic conditions in syrup formulations. My clinical experience with levocetirizine is better compared to other antihistamines in managing AR and PAR in children.

**6. Dr. Shaik C Moulali, M.B.B.S., DCH, DNB**

Kids Care Hospital, Khammam, Telangana

Sleep is moderately affected by AR. Levocetirizine is rated higher for its effectiveness as compared to fexofenadine. Better product stability and clinical effectiveness are reported with the levocetirizine hydrochloride and montelukast sodium combination. Levocetirizine is better absorbed, while montelukast is well absorbed only in suspension formulations. I recommend levocetirizine for treating AR in children up to 12 years of age, providing long-lasting relief for up to 24 h. Levocetirizine is safer than fexofenadine, as it does not interact with food or macrolide antibiotics.

**7. Dr. K Elayaraja, M.B.B.S., MD**

ER Clinic, Villupuram, Tamil Nadu

Sleep and QOL are impacted in children with AR (rating 3/5). Levocetirizine is rated 4/5 for symptom control while fexofenadine scores 2/5. A combination of levocetirizine hydrochloride and montelukast sodium is preferred for therapeutic efficacy. Levocetirizine is well absorbed, while montelukast precipitates in syrup formulations. Fexofenadine is not preferred due to its interactions with orange/grape juices and macrolide antibiotics. As per my experience, levocetirizine has a better safety profile.

**8. Dr. S Senthil Kumar, M.B.B.S., DCH, DNB**

RMCH, Rubha Medical Centre & Hospital, Coimbatore, Tamil Nadu

Levocetirizine is effective over 24 h and is rated at 5/5, surpassing fexofenadine's rating of 2/5. Levocetirizine hydrochloride and montelukast sodium combination are preferred. In syrup formulation, levocetirizine gets well absorbed in the stomach, while montelukast gets precipitated, leading to an inadequate dosage. As per my clinical experience, levocetirizine is more effective and

considered safer than fexofenadine due to its lack of interaction with food or medications.

**9. Dr. Kethireddy Anantha Reddy, M.B.B.S., MD**

Anant Children Hospital, Vemulawada, Telangana

Allergic rhinitis can moderately affect the QOL. Levocetirizine is effective over 24 h (rated 5/5). Levocetirizine hydrochloride and montelukast sodium combination are preferred. In suspension formulation, levocetirizine hydrochloride and montelukast are properly absorbed. I mostly prefer levocetirizine for managing AR and PAR in children under 12 years, relieving sneezing, itchy nose, rhinorrhea, and watery eyes symptoms. Notably, levocetirizine has a superior safety profile as compared to fexofenadine.

**10. Dr. Paramdeep Singh Sahni, M.B.B.S., DCH**

Delhi Children's Hospital, Sirhind, Punjab

Children with AR have low QOL (scoring 3/5). Levocetirizine's effectiveness over 24 h is rated at 5, similar to fexofenadine. Enhanced stability and clinical effectiveness are reported with levocetirizine hydrochloride and montelukast sodium in suspension formulations as both ensure proper absorption. Levocetirizine is safe for AR in children. I prefer levocetirizine over fexofenadine due to its better safety profile.

**11. Dr. Vijay Kumar, M.B.B.S., MD**

Sehrawat Hospital, Palwal, Haryana

The impact on QOL and sleep of children is rated 5/5 due to AR (indicating burden). Levocetirizine is effective and rated at 3/5, and fexofenadine is rated at 2/5. Levocetirizine hydrochloride and montelukast sodium in combination enhance stability. In suspension formulations, both are well absorbed. In addition, levocetirizine is preferred over fexofenadine, due to a lack of interactions with food or medications. In my opinion, levocetirizine is a good option for managing AR and PAR.

**12. Dr. P Praveen Kumar, M.B.B.S., DCH**

Sugam Multi-speciality Hospital, Vellore, Tamil Nadu

Sleep and QOL were rated 5/5, demonstrating AR affects children. The effectiveness of levocetirizine and fexofenadine is highly rated. Levocetirizine hydrochloride and montelukast sodium combination are preferred. Absorption challenges exist with montelukast in syrup formulation but ensure its adequate absorption in the suspension formulation. As per my practice, levocetirizine is an excellent choice for managing AR and PAR among children, with a safety advantage over fexofenadine, due to lack of interactions with food or medications.

**13. Dr. Ramanand Gupta, M.B.B.S., DCH, MD**  
Krishna Clinic, Delhi

The impact of AR on sleep and QOL of children was high. Levocetirizine with symptom control effectiveness was rated higher than fexofenadine. Levocetirizine hydrochloride and montelukast sodium combination are preferred for stability and clinical effectiveness. In suspension formulation, both components are well absorbed. My clinical experience indicates excellent results with levocetirizine in managing AR and PAR among children.

**14. Dr. S Satheesh Kumar, M.B.B.S., DCH**  
Predyun Medical Centre, Tirupur, Tamil Nadu

The efficiency of levocetirizine for managing AR symptoms is highly scored at 5/5 while fexofenadine is rated lower at 2/5. In my opinion, levocetirizine has higher efficacy in treating AR and PAR in children. Furthermore, levocetirizine is a better alternative to fexofenadine because it does not interact with food or other prescriptions.

**15. Dr. Rajesh Dharmarajan, M.B.B.S., DCH, MD, FCCP**  
Kims Hospital, Kollam, Kerala

The impact of AR on sleep and QOL in children is rated at 3/5. The symptom-control effectiveness of levocetirizine and fexofenadine over a 24-h was rated at 5/5 and 3/5, respectively. The combination of levocetirizine hydrochloride and montelukast sodium for better product stability is preferred and levocetirizine is safer than fexofenadine.

**16. Dr. SA Ravikumar, M.B.B.S., MD**  
Clinic, Chennai, Tamil Nadu

The impact of AR on children was rated at 2/5. The effectiveness of levocetirizine was rated at 2/5 and fexofenadine at 4/5. The combination of levocetirizine hydrochloride and montelukast sodium for product stability and effectiveness was preferred. The suspension formulation ensures adequate absorption of montelukast in the intestine. In my clinical experience, levocetirizine has proven to be safe and effective in managing AR and PAR. Levocetirizine is also a safer option than fexofenadine, as it has no interaction with macrolide antibiotics.

**17. Dr. B Venkatesh Kumar, M.B.B.S., MD, NNF**  
Diaplus Clinic, Chennai, Tamil Nadu

The symptom control effectiveness of levocetirizine was 5/5 and fexofenadine was 3/5. The combination of levocetirizine hydrochloride and montelukast sodium is

opted for product stability and effectiveness. My overall clinical experience with levocetirizine in managing AR and PAR among children has been very positive providing 24-h relief. Levocetirizine offers several attributes that make it a safer option, unlike fexofenadine.

**18. Dr. Gopala Krishnam Raju, M.B.B.S., DCH**  
Sri Srinivasa Nursing Home, Bhimavaram, Andhra Pradesh

The impact of AR on children is rated at 4/5. I would rate the symptom control effectiveness of levocetirizine and fexofenadine as 4/5 and 5/5, respectively. The combination of levocetirizine hydrochloride and montelukast sodium should be maintained. The suspension formulation ensures adequate absorption of montelukast in the intestine. Levocetirizine is considered a safer option compared to fexofenadine. My overall clinical experience with levocetirizine in managing AR and PAR among children has been positive.

**19. Dr. Niteen Marutirao Dhobale, M.B.B.S., DCH**  
Dhobale Hospital, Vidya Nagar, Nilanga

I would rate the impact of AR on children at 2/5. The effectiveness of levocetirizine is rated at 3/5 and fexofenadine at 2/5 over 24 h. The combination of levocetirizine hydrochloride and montelukast sodium should be maintained. In suspension formulation, both levocetirizine and montelukast are optimally utilized. My clinical experience with levocetirizine in managing AR and PAR among children has been very positive. Levocetirizine is preferred over fexofenadine due to its simpler dosing regimen.

**20. Dr. Dipak Gandhi, M.B.B.S., DCH, DNB**  
Atharv Child Care, Mumbai, Maharashtra

The major highlights of the EPAAC study include the safety of levocetirizine among children. The effectiveness of levocetirizine is rated 4/5 and fexofenadine 3/5. The integrity of levocetirizine hydrochloride and montelukast sodium can be maintained for product stability and effectiveness. I rate the impact of AR on children at 1/5 and my overall clinical experience with levocetirizine in the management of AR and PAR is that levocetirizine is safe for long-term use.

**21. Dr. Shankar Gore, M.B.B.S., DCH**  
Shraddha Children's Clinic, Bhopani, Pune, Maharashtra

I would rate AR's effects on sleep in children at 4/5. Levocetirizine and fexofenadine score is 4/5 for symptom management. For better product stability and therapeutic efficacy, it is advisable to preserve the combination of

levocetirizine and montelukast. Levocetirizine has been a pleasant therapeutic experience for me in treating AR and PAR because levocetirizine has a less complicated dosage schedule and does not combine with foods or macrolide antibiotics, unlike fexofenadine.

**22. Dr. P Suresh Babu, M.B.B.S., DCH**

PK Child Care Clinic, Arcot, Tamil Nadu

The symptom control of levocetirizine would be rated 1/5 and fexofenadine 4/5 among children. The suspension formulations of levocetirizine and montelukast ensure adequate absorption of montelukast in the intestine. My overall clinical experience with levocetirizine in the management of AR and PAR is that it is an effective drug and considered safer than fexofenadine.

**23. Dr. Velmurugan, M.B.B.S., MD**

Clinic, Chennai, Tamil Nadu

Rating the impact of AR on sleep in children would be 4/5. Levocetirizine and fexofenadine are rated 5/5 and 3/5, respectively, for effectiveness in symptom control. The combination of levocetirizine hydrochloride and montelukast sodium for product stability and clinical effectiveness is preferred. In my experience, levocetirizine provides better symptom control and it is safer than fexofenadine.

**24. Dr. Hareez, M.B.B.S., MS**

AJ Hospital, Thiruvananthapuram, Kerala

I rate the impact of AR on children at 2/5. The rating for the symptom control of both levocetirizine and fexofenadine was 3/5. A combination of levocetirizine hydrochloride and montelukast sodium works better together. In my opinion, montelukast with levocetirizine is better than levocetirizine alone in the management of AR and PAR among children

**25. Dr. Nidhi Bhedru, M.B.B.S., MD**

Dhruti Children Hospital, Tharad, Gujarat

The impact of AR on children was 5/5. Both levocetirizine and fexofenadine demonstrate a symptom control effectiveness rating of 4/5. Maintaining the integrity of levocetirizine hydrochloride and montelukast sodium for better product stability and clinical effectiveness is suggested. My clinical experience with levocetirizine in managing AR and PAR has been satisfactory. Levocetirizine is a safer option than fexofenadine.

**26. Dr. Srikanth Dappuri, M.B.B.S., DCH, DNB**

Sai Balaji Women & Children Clinic, Telangana, Hyderabad

Allergic rhinitis has a moderate impact (4/5) on QOL and sleep in children. Levocetirizine demonstrates a 4/5 and fexofenadine 5/5 rating in symptom control effectiveness. The clinical experience with levocetirizine has shown a better response. Levocetirizine is a safer option than fexofenadine because fexofenadine needs to be taken before meals as it interacts with macrolide antibiotics.

**27. Dr. P Parameswara Rao, M.B.B.S., MD**

Shishuraksha Hospital, Nellore, Andhra Pradesh

The effect of AR on children is rated at 4/5. The effectiveness of levocetirizine and fexofenadine in controlling symptoms is rated as 5/5. The combination of levocetirizine hydrochloride and montelukast sodium is suggested. My clinical experience in the management of AR and PAR with levocetirizine has shown a good response. Levocetirizine is considered safer than fexofenadine because fexofenadine should be taken before meals and it interacts with macrolide antibiotics.

**28. Dr. RC Neelakandan, M.B.B.S., DCH**

Nalam Child Care, Karaikudi, Tamil Nadu

Allergic rhinitis has a limited impact of 2/5 on children. Levocetirizine demonstrates a symptom control effectiveness rating of 4/5 and fexofenadine scores of 2/5. The integrity of the levocetirizine hydrochloride and montelukast sodium combination for better product stability and clinical effectiveness is preferred. My clinical experience suggests that levocetirizine is effective and safe for all age groups in managing AR and PAR. Levocetirizine is preferred over fexofenadine as it does not require specific timing with meals or interact with citrus juices or macrolide antibiotics.

**29. Dr. K Saravana Karthikeyan, M.B.B.S., DCH**

Clinic, Penon, Tenkasi, Tamil Nadu

The effect of AR on children is rated at 2/5, the symptom control effectiveness of levocetirizine was 4/5, and fexofenadine was 2/5. The preference for maintaining the integrity of the levocetirizine and montelukast combination is for better product stability and clinical effectiveness. In my clinical experience, levocetirizine is effective and safe for all age groups in the management of AR and PAR. The attributes of levocetirizine make it a safer option than fexofenadine as levocetirizine does not require administration before meals and does not interact with orange or grape juice or macrolide antibiotics.

**30. Dr. Marimuthu Kumaran, M.B.B.S., DCH**

Anugraha Hospital, Salem, Tamil Nadu

The impact of AR on sleep in children is 2/5. The effectiveness of levocetirizine is rated 4/5 and fexofenadine 3/5 over 24 h. The combination of levocetirizine hydrochloride and montelukast sodium is established for clinical effectiveness. As per my clinical experience, levocetirizine is a safe drug with excellent response and overall performance in school-going children. Levocetirizine is a safer alternative to fexofenadine because the latter should be taken before meals. Furthermore, fexofenadine reacts with macrolide antibiotics.

**31. Dr. Jitender Deshmukh, M.B.B.S., DCH**  
Clinic, Pune, Maharashtra

The effect of AR on children is rated 5/5. Symptom control effectiveness of levocetirizine and fexofenadine was 5/5 and 4/5, respectively. Levocetirizine in a dissolved state and montelukast as coated particles ensure adequate absorption of montelukast in the intestine in suspension formulation. As per my clinical experience, levocetirizine is a good drug for managing AR and PAR. Levocetirizine is also safer than fexofenadine as it does not interact with macrolide antibiotics, and it is not mandatory to administer levocetirizine before meals.

**32. Dr. Faraz K Mukadam, MD, DDU, FCPS**  
Clinic, Mumbai Maharashtra

Levocetirizine is highly effective compared to other antihistamines such as fexofenadine. Long-lasting (24-h) relief provided by levocetirizine was rated as 4/5. It is long-acting, less sedative, and readily available. My overall clinical experience with levocetirizine is very positive, as it is a highly effective and reliable drug.

**33. Dr. Sandip Sen, M.B.B.S., DCH, MD**  
Sandip Sen Child Clinic, Kolkata, West Bengal

The impact of AR on sleep in children is 3/5. The rating for symptom control effectiveness of levocetirizine was 3/5 and fexofenadine 1/5. Levocetirizine is a safer option than fexofenadine. My clinical experience with levocetirizine in the management of AR and PAR has been good, but I believe that a better molecule is needed. In addition, I advocate for levocetirizine and montelukast to be given separately.

**34. Dr. Dipak Kumar Das Roy, M.B.B.S.**  
CBDA Polyclinic, Kolkata, West Bengal

Rating the impact of AR on sleep in children would be 2/5; symptom control effectiveness of levocetirizine 4/5 and fexofenadine 2/5. The combination of levocetirizine hydrochloride and montelukast sodium

should be maintained. Levocetirizine is a safer option than fexofenadine. As per my clinical experience, levocetirizine has been very good, as it is a well-tolerated and economical drug.

**35. Dr. Vinod Kumar, M.B.B.S., MD**  
Amrit Mother & Child Hospital, Muzaffarpur, Bihar

I would rate the effectiveness of levocetirizine and fexofenadine as 4/5 and the impact of AR on sleep as 2/5. Levocetirizine and montelukast in suspension formulation ensure adequate absorption. The integrity of the combination of levocetirizine hydrochloride and montelukast sodium should be maintained. Levocetirizine is a safer option than fexofenadine. My overall clinical experience with levocetirizine in the management of AR and PAR has been excellent, but I find it insufficient.

**36. Dr. H Rahman, M.B.B.S., MD**  
Pragati Medical & Research Center Pvt Ltd, Dhanbad, Jharkhand

I rate the symptom control effectiveness of levocetirizine as 5/5, fexofenadine as 2/5, and the impact of AR on sleep as 2/5 in children. The combination of levocetirizine hydrochloride and montelukast sodium can be maintained. Levocetirizine is a safer option than fexofenadine. My clinical experience with levocetirizine has been positive.

**37. Dr. Ashish Gupta, M.B.B.S., DMCH, DNB**  
Clinic, Kanpur, Uttar Pradesh

The impact of AR on children rated at 4/5, the symptom control effectiveness of levocetirizine at 5/5, and fexofenadine at 2/5. The EPAAC study established the safety of levocetirizine among children. In suspension formulation, levocetirizine and montelukast absorption is ensured. Based on my clinical experience, levocetirizine is an effective molecule for controlling allergies in children. Levocetirizine is a safer option than fexofenadine as well.

**38. Dr. Sayantan Kundu, M.B.B.S., DCH**  
Sambhu Medical Stores, Islampur, Uttar Pradesh

I would rate the effectiveness of levocetirizine in symptom control as 3/5, fexofenadine 2/5, and the impact of AR on children at 3/5. In suspension formulation, levocetirizine and montelukast adequate absorption is ensured. Levocetirizine is a safer option than fexofenadine. In my clinical experience, levocetirizine is suitable for short-term use in managing AR and PAR among children.

**39. Dr. Gaurav Singh, M.B.B.S., DCH, DNB**

Tejas Hospital, Deoria, Uttar Pradesh

The impact of AR on children is rated 5/5, the symptom control effectiveness of levocetirizine at 5/5, and fexofenadine at 3/5. The suspension formulation ensures the absorption of montelukast in the intestine. Levocetirizine is regarded as safe compared to fexofenadine. In my clinical experience, the long-term effect of levocetirizine is superior compared to other antihistamines in managing AR and PAR.

**40. Dr. Siddhartha Nandi, M.B.B.S., MD**

Clinic, Shyamnagar, West Bengal

I would rate the impact of AR on children as 5/5. The effectiveness of levocetirizine and fexofenadine would be the same 5/5. When in suspension form, montelukast is present as coated particles, and levocetirizine is present in dissolved form, which ensures that montelukast is adequately absorbed in the intestine. In my clinical experience, levocetirizine is better tolerated by children in the management of AR and PAR. Levocetirizine is a safer option than fexofenadine as fexofenadine interacts with orange/grape juice and macrolide antibiotics.

**41. Dr. Sanjeetha MN, M.B.B.S., DCH, DNB**

Centre for Child Health, Trivandrum, Kerala

I would rate the effect of AR on children at 3/5. The effectiveness of levocetirizine was rated at 3/5 and fexofenadine at 2/5 among children. The suspension formulation of levocetirizine and montelukast ensures adequate absorption. Based on my clinical experience, levocetirizine has been good and effective in managing AR and PAR among children. Levocetirizine is considered a safer option than fexofenadine.

**42. Dr. Sandipan Saha, M.B.B.S., MD**

ILS Hospital, Child Care Clinic, Kolkata, West Bengal

Children with AR have a poor quality of life. Levocetirizine and fexofenadine both score 4/5 in the same category. The preference for maintaining the integrity of the levocetirizine hydrochloride and montelukast sodium combination is recommended. Based on my clinical experience, levocetirizine has been effective and well tolerated in managing AR and PAR. In addition, the taste is also good. Levocetirizine has a better safety profile than fexofenadine as no specific food-drug or drug-drug interactions are known.

**43. Dr. Ritwik Mukherjee, DCH, MD**

Clinic, Midnapore, West Bengal

Allergic rhinitis impacts children, rating 5/5. Levocetirizine controls symptoms effectively over 24 h, which is similar

to fexofenadine, rating 5/5. Better product stability and clinical effectiveness are observed with the levocetirizine hydrochloride and montelukast sodium combination. In my experience, AR and PAR are well controlled by levocetirizine

**44. Dr. Satish Chandra Gupta, M.B.B.S., DCH**

Shikhar Child Care Clinic, Laxmi Nagar, Delhi

Levocetirizine is safe for atopic children aged 12–24 months, according to the EPAAC research. Levocetirizine and fexofenadine both control symptoms effectively over 24 h and score 4/5. Levocetirizine hydrochloride and montelukast sodium combination are reported to have better product stability and clinical effectiveness. My clinical experience with levocetirizine is good compared to other antihistamines for managing AR and PAR in children.

**45. Dr. Neeraj Tripathi, M.B.B.S., DCH**

Richa Clinic, New Delhi

Quality of life in children is affected by an AR score of 1/5. Levocetirizine is rated at 5 while fexofenadine is at 4 for its symptom control effectiveness. Better clinical effectiveness is reported with the levocetirizine hydrochloride and montelukast sodium combination in suspension formulations. I would recommend levocetirizine as the best molecule for treating AR in children up to 12 years old, providing excellent results up to 24 h. Levocetirizine is considered a safer option than fexofenadine as the latter needs to be administered before meals, and it also interacts with macrolide antibiotics.

**46. Dr. Abhishek Shrimali, M.B.B.S., MD**

Shrimali Hospital, Khandwa, Madhya Pradesh

Quality of life and sleep are impacted in children with AR, with a rating of 2/5, and levocetirizine is considered safe for atopic children. Levocetirizine has been rated 5/5, while fexofenadine scores 4/5 for symptom control. The combination of levocetirizine hydrochloride and montelukast sodium is preferred. As per my clinical understanding, levocetirizine has a better safety profile than other antihistamines such as fexofenadine in managing AR and PAR in children.

**47. Dr. Sunil Manohar Sheth, MD, DCH**

Manohar Hospital, Mahad, Maharashtra

Levocetirizine is rated at 5/5 and fexofenadine at 3/5 for symptom control. Levocetirizine hydrochloride and montelukast sodium combination is preferred for its enhanced stability and clinical effectiveness. As per my clinical experience, levocetirizine has an



excellent response to managing AR and PAR among children. Notably, levocetirizine is considered safer than fexofenadine due to its lack of interactions with food or medications.

**48. Dr. Mahendra Sawant, M.B.B.S., MD**

Ojaswi Child Care, Navi Mumbai, Maharashtra

Sleep is moderately affected by AR (3/5). Levocetirizine earned a top rating of 5, whereas fexofenadine was rated 4 in effectiveness. Maintaining the integrity of levocetirizine hydrochloride and montelukast sodium in combination is preferred. In my clinical practice, I mostly prefer levocetirizine as a convenient drug for managing AR and PAR in children. Notably, levocetirizine has a superior safety profile when compared to fexofenadine.

**49. Dr. Prakash Vadukar, DCH**

Dax Children Hospital, Porbandar, Gujarat

The impact due to AR is rated 2/5, indicating a significant burden. Levocetirizine is effective over 24 h among children and is rated at 4/5, fexofenadine is rated lower at 3/5. Maintaining the integrity of levocetirizine hydrochloride and montelukast sodium in combination for enhanced stability and clinical effectiveness is preferred. In my opinion, levocetirizine has a good response to managing AR and PAR among children. In addition, levocetirizine is preferred over fexofenadine, particularly due to a lack of interactions with food or medications.

**50. Dr. Prakash Vaidya, MD, DCH**

Child Health Clinic & Fortis Hospital, Mumbai, Maharashtra

Children with AR have a moderately low quality of life (scoring 2/5). Levocetirizine is rated as 2/5 and fexofenadine as 1/5 in managing the symptoms. Levocetirizine is safe and effective compared to other treatments for AR in children. In my opinion, levocetirizine is fairly good, but I do not prefer a combination with montelukast due to its bioavailability issues and the fact that such a combination is not recommended by any guidelines.

**51. Dr. MS Sudarsanan, M.B.B.S., DCH**

Sreeram Clinic, Palakkad, Kerala

The effect of AR was rated 3/5, and symptom control effectiveness for levocetirizine 4/5 and fexofenadine 5/5 is highly rated. Levocetirizine hydrochloride and montelukast sodium in combination are preferred. As per my clinical experience, levocetirizine is a good choice to manage AR and PAR among children, with a safety advantage over fexofenadine, particularly because fexofenadine should be

taken before meals and has interaction with orange juice or grape juice and medications.

**52. Dr. Sajan Thottan, M.B.B.S., DCH**

Daya Clinic Kechery, Thrissur, Kerala

The impact of AR on children was 1/5. The symptom control effectiveness of levocetirizine was rated as 5/5 and fexofenadine as 5/5. Levocetirizine hydrochloride and montelukast sodium combination is preferred due to the improved product stability and clinical effectiveness. My clinical experience indicates good results with levocetirizine in managing AR and PAR among children.

**53. Dr. Mandar Pawar, M.B.B.S., DCH, FCPS, DNB**

Chirayu Children's Nursing Home and Skin Care Centre, Dombivli, Maharashtra

The effectiveness of levocetirizine for managing sleep symptoms due to AR in children is highly scored at 4/5, while the effectiveness of fexofenadine is rated at 3/5. Levocetirizine ensures efficient stomach absorption in syrup and solution forms, while montelukast presents difficulties. In suspension formulations, they are well absorbed. In my opinion, levocetirizine is a good option for treating AR and PAR in children. Furthermore, levocetirizine is a better alternative to fexofenadine because it does not interact with food or other prescriptions, making it a superior choice.

**54. Dr. Anand Ghoghawala, MD, PED, DNB**

Nandanvan Shishu Hospital, Little Hearts Clinic, Bhavnagar, Gujarat

The impact of AR on children was rated as 3/5. The effectiveness of levocetirizine and fexofenadine is rated at 4/5 and 3/5, respectively. The combination of levocetirizine hydrochloride and montelukast sodium provides product stability and clinical effectiveness. My overall clinical experience with levocetirizine in managing AR and PAR among children has been very effective and time proven. Levocetirizine offers several attributes that make it a safer option. Unlike fexofenadine, levocetirizine does not need to be taken before meals.

**55. Dr. Dipak Suresh Sonawane M.B.B.S., DCH**

Vatsalya Children's Hospital, Palghar, Maharashtra

The impact of AR on children is rated at 4/5. Levocetirizine demonstrates symptom control with a rating of 4/5, while fexofenadine scores 2/5 in the same category. The combination of levocetirizine hydrochloride and montelukast sodium demonstrates better product stability and clinical effectiveness. In my opinion, levocetirizine gives good symptom relief, and it is also favorable to use

levocetirizine over fexofenadine as no interactions with macrolide antibiotics and food are reported.

**56. Dr. Vinit Tambe, M.B.B.S., DCH**

Birmole Hospital, Panvel, Maharashtra

Children with AR have poor sleep quality of life (1/5). Levocetirizine is highly rated at 5/5 for its effectiveness in controlling symptoms over 24 h whereas fexofenadine also scores 5/5. The preference for maintaining the integrity of the levocetirizine hydrochloride and montelukast sodium combination for better product stability and clinical effectiveness is recommended. I suggest levocetirizine as a good option for managing AR and PAR in children and it has a better safety profile than fexofenadine.

**57. Dr. Roshni KS M.B.B.S., DCH**

Elite Mission Hospital, Thrissur, Kerala

Sleep is impacted in children with AR (2/5). Levocetirizine receives a high rating of 4/5 for its effectiveness in controlling symptoms while fexofenadine scores a 3/5. A combination of levocetirizine hydrochloride and montelukast sodium is suggested. As per my clinical experience, levocetirizine is good for managing AR and PAR in children. Levocetirizine is safer than fexofenadine as no food or antibiotic interactions are observed with it.

**58. Dr. Ramesh M, M.B.B.S., M.D**

Mathura Medical Center, Erode, Tamil Nadu

Allergic rhinitis receives a low score of 2 for negatively impacting the QOL of children. Levocetirizine controls symptoms and scores 4/5, and fexofenadine scores 3/5. Levocetirizine hydrochloride and montelukast sodium combinations are observed to have better product stability and clinical effectiveness. In my clinical experience, levocetirizine is good for compliance and very effective in managing AR and PAR in children.

**59. Dr. Nilesh Nathani, M.B.B.S., M.D**

Suchak Hospital, Bhavnagar, Gujarat

Quality of life is impacted in children with AR 3/5. Levocetirizine and fexofenadine score 5/5 for their effectiveness in controlling symptoms over 24 h. The combination of levocetirizine hydrochloride and montelukast sodium is suggested for clinical effectiveness. In my clinical experience, the use of levocetirizine has been good in managing AR and PAR in children.

**60. Dr. GS Tanwar, M.B.B.S., MD**

SP Medical College, Bikaner, Rajasthan

Levocetirizine is considered safe for atopic children aged 12–24 months. Levocetirizine has been rated 5/5 for its symptom control, while fexofenadine scores 4/5. It is preferred to choose the combination of levocetirizine hydrochloride and montelukast sodium for improved therapeutic efficacy. As per my clinical understanding, levocetirizine has a better safety profile than other antihistamines in managing AR and PAR in children. Fexofenadine is not opted for as it has to be administered before meals.

**61. Dr. Rahul Mogre, M.B.B.S., DCH**

Clinic, Chandpur, Maharashtra

The effect of AR on children is high (1/5). Symptom control effectiveness rated 3/5 for both levocetirizine and fexofenadine. Levocetirizine hydrochloride and montelukast sodium combination is preferred. In my clinical experience, levocetirizine is a good option for the medium-length duration of treatment for AR and PAR among children.

**62. Dr. Praveen Kumar, M.B.B.S., DCH**

Dr. Praveen's Children's Hospital, Tenali, Andhra Pradesh

The impact on children is rated 1/5 due to AR. Levocetirizine is rated at 2/5 and fexofenadine is rated at 5/5 in managing the symptoms. Maintaining the integrity of levocetirizine hydrochloride and montelukast sodium in combination is preferred. In my opinion, levocetirizine has a good response, but sedation is the main concern in managing AR and PAR among children.

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