

Original Research Article

A cross-sectional survey on the usage, preference, and clinical experience of pediatricians with cefpodoxime in pediatric infections

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ABSTRACT

Background: Cefpodoxime is frequently prescribed for pediatric bacterial infections; however, real-world insights into its usage patterns, preference, and clinical experience among pediatricians in India are limited. This study evaluated the prescribing trends, perceived efficacy, palatability, safety, and overall satisfaction with cefpodoxime in pediatric practice.

Methods: A cross-sectional survey was conducted among pediatricians attending the National Pedicon Conference 2026 using a structured questionnaire. Data on demographics, indications, comparative preference with other β -lactam antibiotics, clinical efficacy, palatability-associated compliance, safety, and satisfaction were collected from 300 respondents.

Results: Among 300 pediatricians, 69.7% were male and 31.0% female, with a mean age of 44.58 ± 13.07 years. Cefpodoxime was most prescribed for lower respiratory tract infections ($n=206$), followed by pharyngitis/tonsillitis ($n=186$), acute otitis media ($n=185$), skin and soft tissue infections ($n=67$), and urinary tract infections ($n=57$). Across respiratory tract infections, cefpodoxime was consistently preferred over cefpodoxime-clavulanate and other β -lactam antibiotics. Clinical efficacy was rated as excellent by 199 respondents and good by 97, reflecting strong confidence in treatment outcomes. Palatability was reported to significantly improve pediatric patient compliance by 239 pediatricians, while 250 identified palatability as a key determinant of patient satisfaction. In terms of safety, 261 respondents reported no observed adverse events. Overall satisfaction was high, with 188 pediatricians being very satisfied and 107 satisfied with cefpodoxime use.

Conclusions: The survey highlights cefpodoxime as a preferred, effective, and well-tolerated antibiotic with added benefits of palatability-driven compliance in pediatric infections.

Keywords: Physician perception, Treatment compliance, Palatability, Prescribing patterns

INTRODUCTION

Pediatric bacterial infections continue to represent a major cause of outpatient visits and antibiotic prescriptions worldwide. In India, the annual reported cases of acute respiratory infections (ARI) reach approximately 40 million. These infections constitute a significant portion of healthcare utilization, accounting for 30-60% of all outpatient visits and 20-40% of pediatric hospital admissions.¹ According to the National Family Health

Survey-5 (NFHS-5), ARI impact 2.8% of under-5 children nationally, and 2.5% in Punjab.²

Common conditions such as acute otitis media, pharyngitis or tonsillitis, sinusitis, lower respiratory tract infections, skin and soft tissue infections, and urinary tract infections contribute substantially to morbidity in children and impose a significant burden on healthcare systems. Prompt initiation of appropriate antimicrobial therapy is essential

to ensure clinical resolution, prevent complications, and reduce the risk of antimicrobial resistance.³

International consensus and pediatric guidelines designate intravenous and oral β -lactams as first-line due to their broad-spectrum activity, time-dependent bactericidal efficacy, excellent tolerability, and extensive safety data in children.⁴ Among oral third-generation cephalosporins, cefpodoxime proxetil has gained widespread acceptance in pediatric practice due to its favorable pharmacokinetic properties, broad spectrum of activity against common respiratory and urinary pathogens, and convenient dosing schedules. Cefpodoxime demonstrates reliable activity against *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Moraxella catarrhalis*, and several gram-negative organisms, making it a valuable option for empiric therapy in routine pediatric infections.⁵

Beyond antimicrobial spectrum and clinical efficacy, several practical factors influence antibiotic selection in children, including tolerability, safety, palatability, and ease of administration.⁶ Poor taste and gastrointestinal intolerance are well-recognized contributors to non-adherence in pediatric patients, often leading to incomplete treatment courses and suboptimal outcomes. Consequently, palatability of oral antibiotic formulations plays a critical role in improving patient compliance, caregiver satisfaction, and overall treatment success.⁷ Cefpodoxime syrup formulations have been developed with improved flavor profiles to address these challenges, potentially enhancing adherence in pediatric populations.

Despite its widespread clinical use, limited real-world data are available capturing pediatricians' perspectives on cefpodoxime use in routine clinical practice in India. Although randomized controlled trials provide strong evidence regarding efficacy and safety, real-world surveys offer important insights into prescribing patterns, comparative preferences among β -lactam antibiotics, perceived clinical effectiveness, safety experiences, and patient-centric factors such as palatability and treatment satisfaction. Such information is particularly relevant in the Indian setting, where prescribing decisions are influenced by disease burden, antimicrobial resistance trends, and patient expectations.

Therefore, a cross-sectional survey was conducted among pediatricians attending Pedicon Conference 2026 to assess usage patterns, prescribing preferences, perceived clinical efficacy, palatability-related compliance, safety, and overall satisfaction with cefpodoxime in pediatric infections. The findings are intended to generate real-world evidence that may support rational antibiotic selection and help optimize pediatric patient care.

METHODS

This study was designed as a descriptive, questionnaire-based cross-sectional survey conducted among pediatricians attending PEDICON 2026, a national-level

pediatric conference held from 16 to 20 January 2026 at the Biswa Banga Convention Centre, Kolkata. Pediatricians who were willing to participate and provided informed consent were included in the survey. A total of 300 pediatricians completed the questionnaire, and their responses were considered for final analysis.

The survey tool comprised eight structured, multiple-choice questions. The questionnaire was developed following initial discussions with experts in pediatrics to identify key clinical challenges and unmet needs in routine pediatric practice. Based on these expert inputs, the questionnaire was refined to ensure clinical relevance, clarity, and ease of completion.

The finalized questionnaire was converted into a Google Forms format and disseminated to participants during the conference. Responses were collected electronically and subsequently exported to Microsoft Excel for data compilation and management. Data analysis was performed using descriptive statistical methods, with results expressed as frequencies and percentages to summarize the distribution of responses.

Ethical considerations

The study protocol was reviewed by an Independent Ethics Committee, and the study was granted an ethics committee waiver, as the survey was non-interventional, anonymized, and involved no patient data. Participation was entirely voluntary, and electronic informed consent was obtained from all respondents prior to survey initiation. Confidentiality and anonymity of participants were strictly maintained throughout the study.

RESULTS

A total of 300 pediatricians participated in this cross-sectional survey evaluating the usage patterns, preferences, and clinical experience with cefpodoxime in pediatric infections. As shown in Table 1, among the respondents, 209 (69.7%) were male and 93 (31.0%) were female. The mean age of the participants was 44.58 \pm 13.07 years, indicating that the survey population largely comprised clinicians with considerable professional experience and sustained involvement in pediatric practice. Participants were from all over the India as shown in Figure 1.

Prescribing patterns and indications

As depicted in Figure 2, cefpodoxime was reported to be widely prescribed across multiple pediatric infectious conditions. The most mentioned indication was lower respiratory tract infections (LRTIs), reported by 206 pediatricians, followed by pharyngitis/tonsillitis (n=186) and acute otitis media (AOM) (n=185). Other indications included skin and soft tissue infections (SSTIs) (n=67) and urinary tract infections (UTIs) (n=57). These findings

number of respondents reported no impact (n=4) or expressed uncertainty (n=2) (Figure 5).

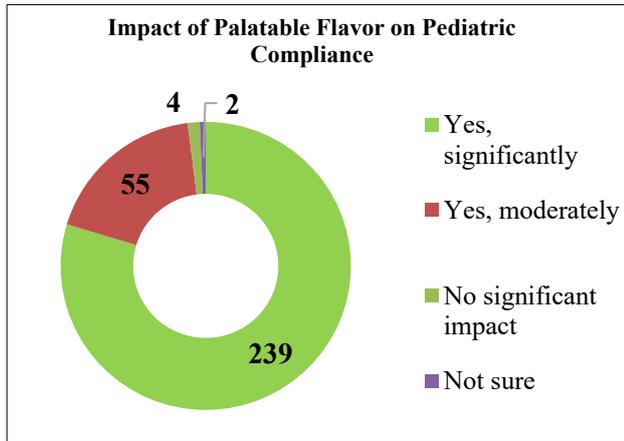


Figure 5: Does palatable flavor of cefpodoxime syrup help improve pediatric patient compliance.

When asked whether the palatability of cefpodoxime influences patient satisfaction, many respondents (n=250) indicated that palatability is a deciding factor. In contrast, 25 pediatricians reported that palatability was not a determining factor, while an equal number (n=25) expressed uncertainty as depicted in Figure 6.

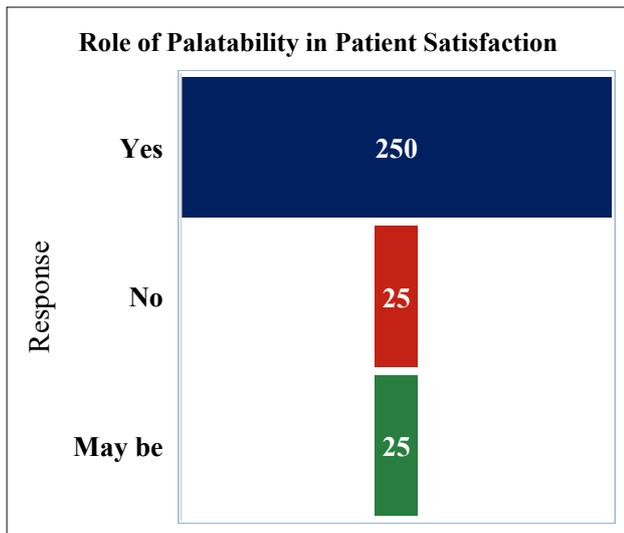


Figure 6: Does palatability influence patient satisfaction?

Overall, these findings suggest that palatability plays an important role in patient satisfaction, particularly in pediatric practice, where taste and ease of administration may significantly influence treatment acceptance and adherence.

Safety and overall satisfaction

Regarding safety, most respondents (n=261) reported that they had not observed any adverse events associated with

the use of cefpodoxime in their routine pediatric practice. A minority of pediatricians (n=39) indicated encountering some adverse events, suggesting an overall favorable safety profile for both regimens (Figure 7).

Overall satisfaction with cefpodoxime was high among the surveyed pediatricians. A total of 188 respondents reported being very satisfied, while 107 indicated they were satisfied with its clinical use. Only five pediatricians expressed a neutral opinion. Collectively, these findings reflect a positive overall clinical experience and high acceptance of cefpodoxime in the management of pediatric infections (Figure 8).

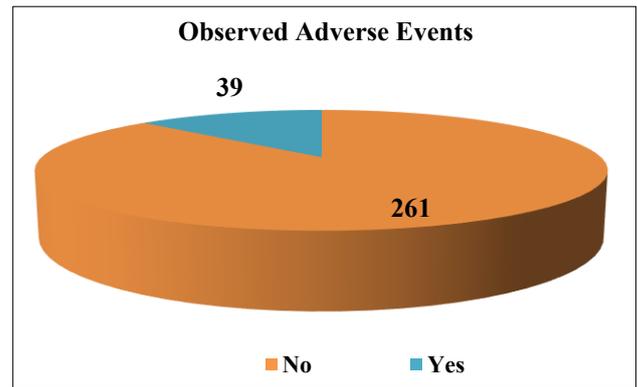


Figure 7: Adverse events observed with cefpodoxime.

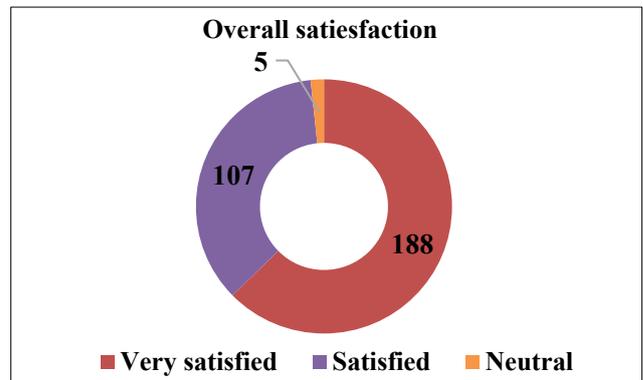


Figure 8: Overall satisfaction with cefpodoxime.

DISCUSSION

This study was conducted to gain insights into using cefpodoxime proxetil, particularly in pediatric populations, focusing on pediatrician’s perspectives and clinical decision-making processes. The main goal of this study was to assess the physician’s opinions on usage, preference and clinical experience of cefpodoxime proxetil in pediatric patients and also to identify any concerns regarding its prescription.

Cefpodoxime is a third-generation cephalosporin recognized for broad-spectrum antibacterial activity; cefpodoxime targets gram-positive and gram-negative bacteria, including pathogens commonly associated with

respiratory and urinary tract infections. The Indian guidelines (ICMR and NCDC) all recommend cefpodoxime proxetil as a first-line therapy for individuals who are hypersensitive or allergic to penicillin.⁸⁻¹⁰

Our cross-sectional survey of 300 Indian pediatricians demonstrated widespread adoption of cefpodoxime for pediatric infections, predominantly lower respiratory tract infections (LRTIs; n=206), pharyngitis/tonsillitis (n=186), and acute otitis media (AOM; n=185), with clear preference over β -lactam alternatives like cefpodoxime-clavulanate (e.g., AOM: 206 versus 86). High clinical efficacy ratings (excellent/good: n=296) were complemented by strong palatability enhancing compliance (n=239) and satisfaction (n=250), a favorable safety profile (no adverse events: n=261), and overall satisfaction (very/satisfied: n=295), among experienced clinicians nationwide (mean age 44.58 \pm 13.07 years).

When benchmarked against similar clinician surveys and cefpodoxime studies, our results show strong congruence in prescribing dominance for respiratory conditions but superior satisfaction and palatability metrics, likely influenced by Indian pediatric practice emphases on flavored formulations and broad-spectrum utility amid resistance patterns.

In our study we have observed that pediatricians use cefpodoxime in different lower respiratory tract infections and upper respiratory tract infections like pharyngitis, tonsillitis and acute otitis media, as well as skin and soft tissue infections, and UTIs. Similar findings were observed in another study by Jain et al, where they observed that physicians preferred this molecule in LRTI indications like bronchitis, bronchiolitis, pneumonia, tracheitis and URTIs like sinusitis, rhinitis, rhinosinusitis, Acute otitis media, laryngitis, pharyngitis, and tonsillitis etc.¹¹ Well, in another study by Manjula et al, observed that approximately 53% of the clinicians reported prescribing cefpodoxime in cases of upper respiratory tract infections (URTIs), while 44% of them indicated using it for lower respiratory tract infections (LRTIs).¹²

We observed that in respiratory tract infections pediatricians preferred molecules in different indications is majorly cefpodoxime. When prescribing preferences were compared with other β -lactam antibiotics, cefpodoxime consistently emerged as the favored choice across major indications. Similar findings were observed in study by Jain et al, where they observed cefpodoxime alone or in combination with clavulanic acid was the most preferred drug for managing RTIs due to its high efficacy, broad-spectrum activity, safety, and better tolerability.¹¹ Also, a study by Manjula et al, confirms cefpodoxime as a widely used antibiotic in India for URTIs and acute otitis media, driven by its broad-spectrum activity, favorable pharmacokinetics, and proven clinical efficacy in RTIs.¹² In another cross-sectional study by Manjula et al, the same finding was highlighted that cefpodoxime was the most preferred choice for the management of AOM patients

among clinicians. Despite its superior cure and improvement rate among other antibiotics, cefpodoxime was opted for its better tolerability, lesser frequency of administration, improved adherence and decreased gastrointestinal adverse effects.¹³

Palatability is a crucial factor influencing adherence of medication in pediatric populations, especially for oral antibiotics. It plays a crucial role in influencing medication compliance. Rejection of unpalatable medications can potentially lead to treatment failure which can have immediate and delayed consequences. It was even documented that the unfavorable palatability of cefpodoxime proxetil may adversely affect adherence.¹⁴

In our study we observed that a majority of respondents reported that the palatable flavor of cefpodoxime syrup significantly improved patient compliance, while few pediatricians perceived a moderate improvement. Only a minimal number of respondents reported no impact (n=4) or expressed uncertainty (n=2). This evidence is supported by many different studies which quote the fact that palatability of oral medication has direct impact on compliance of treatment specifically in pediatric patients.^{15,16}

Regarding safety, the majority of pediatricians reported not observing any major adverse events with cefpodoxime. This observation is consistent with findings from a study by Janarthanan et al, which reported that physicians perceive cefpodoxime as an effective and well-tolerated treatment option.¹⁷ Moreover, this finding is also documented in many clinical studies of cefpodoxime proxetil.^{18,19}

Overall, the findings of this nationwide survey highlight the widespread acceptance of cefpodoxime among pediatricians across India for the management of common pediatric infections. Its predominant use in respiratory tract infections, consistent preference over other β -lactam antibiotics, and high perceived clinical efficacy underscore its relevance in routine pediatric practice. Importantly, favorable palatability contributing to improved compliance, along with a reassuring safety profile and high overall satisfaction among clinicians, further supports cefpodoxime as a well-balanced oral cephalosporin.

These real-world insights reflect clinicians' confidence in cefpodoxime and reinforce its role as a preferred therapeutic option in pediatric infectious disease management.

Limitations

The study was limited by its cross-sectional, questionnaire-based design and inclusion of pediatricians from a single conference setting, which may introduce selection and response bias and limit the generalizability of findings to the broader pediatric practice population.

CONCLUSION

This nationwide survey highlights cefpodoxime as a widely preferred and commonly used antibiotic among pediatricians for managing pediatric infections, particularly respiratory tract infections. High perceived efficacy, favorable safety, and improved compliance driven by palatability contributed to strong clinician satisfaction, supporting cefpodoxime as an effective and practical option in routine pediatric practice.

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