

# Cefpodoxime Proxetil Induced Oral Ulcer Case Series

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## ABSTRACT

Cefpodoxime Proxetil is an extended spectrum cephalosporin of third generation. It inhibits bacterial cell wall synthesis by binding to one or more of the penicillin binding proteins. We came across two cases for getting oral ulcers after administering Cefpodoxime Proxetil 200mg which was prescribed for viral fever. We suspected adverse drug reaction as per the temporal relationship. After reviewing previous literatures and database (e.g. Micromedex, UpToDate.) we found that oral ulcers are not proved as an adverse reaction due to Cefpodoxime Proxetil. These rare cases mainly occur due to lack of rapid diagnostic tools, which can concomitantly cause antibiotic resistance in patients and can be a public threat in near future. After prescribing such drugs monitoring of patient is required to prevent any harmful effects. Clinical Pharmacist can play vital role in this field of healthcare.

**Keywords:** Antibiotic Resistance, Cephalosporin, Cefpodoxime Proxetil, Oral ulcer, Adverse Drug Reaction.

**Key message:** This case highlights rare consequences of the Cefpodoxime Proxetil administration. Such type of Adverse Drug Reactions can increase the incidence of hospitalization if it is not monitored on time.

## INTRODUCTION

Cefpodoxime Proxetil is an extended spectrum cephalosporin of 3<sup>rd</sup> generation. It inhibits bacterial cell wall synthesis by binding to one or more of the penicillin binding proteins (PBPs). It is indicated for various bacterial infections like pharyngitis, tonsillitis, bronchitis, urinary tract infections, etc. A common adverse drug reaction of Cefpodoxime Proxetil includes diaper rash, diarrhea, and nausea.<sup>1</sup> In our case we came across a rare adverse effect of oral ulcer. This reaction is not mentioned in any of the previously published literature. Various other Adverse Drug Reactions (ADRs) of Cefpodoxime Proxetil are mentioned in Table 1.

## CASES

### Case-1

A 21-year-old male patient was presented to the emergency department with complains

of fever with chills, generalized body ache, throat discomfort, nausea, headache and running nose for 2 days. The patient was diagnosed with viral fever and prescribed with Tab. Cefpodoxime Proxetil (200mg) BD for 5 days, Tab. Paracetamol (500mg) (1-1-1) for 3 days and Tab. Multivitamin (0-1-0) for 3 days. After taking Cefpodoxime Proxetil for a day patient had history of oral ulcer, which was cured on next day after stopping the drug.

### Case-2

A 23-year-old female patient was having complains of weakness, fever, cold. She went to family physician and was diagnosed with Viral Fever. For that she was prescribed with Tab. Cefpodoxime Proxetil (200mg) (1-0-1) for 2 days. Patient experienced oral ulcer after administering 2 doses of prescribed drug. She performed dechallenge after experiencing oral ulcer and reaction was recovered after stopping the medicine.

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**Table 1: Adverse Drug Reaction of Cefpodoxime Proxetil.<sup>1,2</sup>**

Common Adverse Drug reactions (>10%) Dermatologic	
Gastrointestinal	Diaper rash (2% to 8.5%)
	Diarrhea (1.2% to 12.8%), Nausea (1.4% to 3.3%)
Serious Adverse Drug reactions (1-10%)	
Dermatological	Steven Johnson's syndrome, Toxic epidermal necrolysis.
Gastrointestinal	Clostridium difficile colitis
Rare Adverse Drug Reactions (<1%)	
Anaphylaxis, anxiety, chest pain, cough, decreased appetite, dizziness, dysgeusia, epistaxis, eye pruritus, fatigue, fever, flatulence, flushing, fungal skin infection, hypotension, insomnia, malaise, nightmares, pruritus, pseudomembranous colitis, purpuric nephritis, tinnitus, vulvovaginal candidiasis, weakness, xerostomia.	

**Figure 1: Oral Ulcer due to Cefpodoxime Proxetil.**

Again, to get assurance for the same she did rechallenge with the same drug and oral ulcers were developed. Reference picture is given in Figure 1.

## DISCUSSION

Generally, cefpodoxime proxetil is known to cause common adverse effects of skin rashes and gastrointestinal side effects like diarrhea but we came across a rare side effect of oral ulcer.<sup>1</sup> There are no such previous case reports on the above but there is an article of reference published in one of the clinical therapeutics' books on "Effects on gastric pH and pharmacokinetics of cefpodoxime proxetil". The mechanism of ADR is not clear in our case but we suspect that it caused due to disturb in the gastric flora by destroying the mucosal layer of the stomach and ultimately causing oral ulcer.<sup>3</sup>

In both of the cases we found that reaction has been started after taking prescribed dose only. So, we suspected

Tab. Cefpodoxime Proxetil (200mg) (1-0-1) is responsible to produce Oral ulcer as an adverse drug reaction as temporal relationship was present. In case 1 patient was given this drug for the treatment of viral fever and so in the case 2.

In most of the cases, antibiotics are recommended. Antibiotic resistance, which is a global public health threat, is fueled by overuse of antibiotics in primary care. To legitimately treat the patients with fever, health professionals are in need of new point-of-care assessments and evidence-based recommendations.<sup>4</sup> Other medicines which frequently cause oral ulcer as a side effect are amoxicillin, ampicillin and anti-seizure medications like phenytoin and phenobarbital.

Fever is the consequence of the body's immune reaction to a foreign invader. It is discussed that an individual should not diagnose to have a severe fever until their temperature increases to 100.4 F, according to medical guidelines. A fever's prognosis is determined by the cause. Causes of fever can be any bacteria, virus, fungi and even drugs too. Most cases of fever are self-limited.<sup>5</sup>

Clinical Pharmacist can play a significant role in monitoring patients with adverse drug reactions as they are well aware about the consequential monitoring of respective parameters. They can be placed in healthcare setting and as a conclusion number of drug induced adverse drug reactions can be decreased in conspicuous manner. If patients are getting mouth ulcers due to any drug, then it can be monitored with help of Folic Acid (500 mcg) 1-0-0 and Tab. Vitamin B12 (500 mcg) 0- 0-1.<sup>6</sup>

## Causality Assessment

Scale	Result
WHO	Unclassifiable
Naranjo's algorithm	Probable
Karch and lasagna algorithm	Conditional
Hartwig and Siegel	Mild (Level2)
Shumock and Thornton	Definitely Preventable

WHO: World Health Organization

## CONCLUSION

Finally, from this study we can conclude that Clinical Pharmacists can play a crucial role in patient care by dose adjustment as per patient's comorbidities and demographic details also can extend their hands in reporting of ADRs of particular drugs.

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## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

## ABBREVIATIONS

**PBPs:** Penicillin Binding Proteins; **ADR:** Adverse Drug Reactions; **WHO:** World Health Organization.

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