

Cefuroxime axetil induced glossitis: a case report**Asha Pathak¹, Achyut K. Pandey^{2*}, Atul K. Mishra³, Arun K. Mishra⁴**

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ABSTRACT

Cefuroxime axetil is a semi synthetic cephalosporin antibiotic, which is prescribed for different types of infections such as lung, ear, throat, urinary tract, and skin. This is the drug of choice in the treatment and prevention of streptococcal infections. In this case, the patient was prescribed cefuroxime axetil, diclofenac, and paracetamol for pharyngitis. The patient developed glossitis 3 hrs after ingestion of above drugs which improved after withdrawing the offending drug. Glossitis is an uncommon, but serious adverse drug effect of cefuroxime axetil. It is important to recognize and manage it to prevent fatality. The case has been reported to the Pharmacovigilance Center Uttar Pradesh Rural Institute of Medical Sciences and Research Saifai, Etawah.

Keywords: Adverse drug reaction, Glossitis, Pharyngitis, Pharmacovigilance center

INTRODUCTION

Glossitis is a condition in which the tongue is swollen and changes color, often making the surface of the tongue appears smooth having multifactorial etiology. Tongue inflammation has been reported by people with osteoporosis, asthma, high blood pressure, rheumatoid

arthritis, and chronic obstructive pulmonary disease also.¹ There are multiple systemic and local etiological factors responsible for glossitis, including nutritional deficiency, anemia, infections, trauma, irritants, and malignancy. Various drugs are also listed to cause glossitis. Cefuroxime axetil is one of those drugs though rarely (0.04%), which cause glossitis.²

Here, we report a case of cefuroxime axetil induced glossitis during treatment of pharyngitis.

CASE REPORT

Mr. AB 65-year-old patient admitted in emergency department of our institute with the chief complaint of pain and swelling of tongue. The patient was suffering from sore throat, fever, anorexia, chills, malaise, headache, and pain in upper neck region for the last 3-4 days. The patient was advised tablet cefuroxime axetil 250 mg at 12 hrs interval and diclofenac (50 mg) and paracetamol (500 mg) as fixed dose combination at 8 hrs interval for his upper respiratory tract infection. The patient took two doses of above drugs around interval of 6 hrs. He developed swelling of tongue in between both doses and worsened after the second dose, lead to respiratory compromise around 2 hrs after second dose. The patient has no history of asthma, prior history of drug reaction, high blood pressure, and joint pain. Socio-economic condition and family history were not contributory.

On examination of the patient, his vital parameters were within the normal limits. Systemic examinations were within the normal limits. On local examination, tongue was red, swollen, and tender, but there were no white patches or rhomboid-shaped plaque or linear fissures on dorsum of tongue. His investigations revealed: hemoglobin - 9.7, total leucocyte count=5400; N 52%, L 38%, M 3%, E 3%; serum electrolyte sodium: 140 mE/L, potassium: 3.99 mE/L. HIV, hepatitis B surface antigen, hepatitis C virus, malaria, and Widal tests were negative.

Cefuroxime axetil 250 mg was stopped and the patient was given injection ceftriaxone 1 g/initialization vector (iv)/12 hrs, injection pheniramine maleate 1 amp/iv/24 hrs, injection Dexamethasone 2 ml/iv/12 hrs, injection pantoprazole 40 mg/iv/24 hrs; tablet diclofenac and paracetamol/12 hourly, nebulized with salbutamol and budesonide. The patient was given syrup digene 2 tsf/12 hourly for symptomatic relief and adequate intravenous fluid (dextrose normal saline) was also given as supportive treatment. Patient started showing improvement approximately 4 hr after treatment and successfully discharged on 7th day of admission.

DISCUSSION

Cefuroxime axetil is absorbed from the gastrointestinal tract and rapidly hydrolyzed by non-specific esterases in the intestinal mucosa and blood to cefuroxime. Cefuroxime is subsequently distributed throughout the extracellular fluids. The axetil moiety is metabolized to acetaldehyde and acetic acid. Absorption of the tablet is greater when taken after food (absolute bioavailability increases from 37% to 52%). Time of peak plasma concentration is 2.5 hrs. Cefuroxime is excreted unchanged in the urine; in adults, approximately 50% of the administered dose is recovered in the urine within 12 hrs.³

On rigors search on PubMed, Medline and Food and Drug Administration (FDA) sites no case report, case series or any systemic review could be found relating cefuroxime axetil with glossitis. Though, some unauthenticated data on "e Health Me.com," report glossitis caused by cefuroxime axetil in elderly female, while our case is elderly male. They studied 4031 people who had side-effects, while taking cefuroxime axetil from FDA and social media. Among them, 12 had glossitis.

Though, very low (<1% to >0.1%) incidence of swollen tongue is described as one of the adverse drug effects of cefuroxime axetil, but it is with multiple dose-dosing regimens.³ However, in our case signs of glossitis appeared approximately 3 hrs after the first dose of cefuroxime axetil, which corresponds to time of peak plasma concentration. It suggests that single dose may cause glossitis.

Though, in literature, there are multiple systemic and local etiological factors are described to cause glossitis, but they were not found in our patient.¹ In our case, patient was receiving other drugs also which may cause glossitis.^{2,4} However, the sign of glossitis worsened on second dose of cefuroxime axetil. Again it started resolving after withdrawal of cefuroxime axetil though other drugs were continued as same.

As glossitis developed with reasonable time relationship to cefuroxime axetil intake, other attributing diseases and drugs ruled out and the patient responded well to withdrawal of cefuroxime axetil reasonably. As the glossitis was so severe, rechallenge was not required. World Health Organization (WHO) guideline for causal assessment (WHO-Uppsala Monitoring Centre causality categories) also substantiates the probable/likely association of cefuroxime axetil with glossitis.⁵

This may be concluded that even single dose of cefuroxime axetil may cause glossitis, which should promptly recognized and offending drug should be withdrawn to prevent serious complications. This case again proposes that this adverse effect is not limited to females only.

Limitations

This is a single case report only. There is a need for systematic study to prove the causality of cefuroxime axetil with glossitis.

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