

Idiosyncratic ADR Due to Cefpodoxime: A Case Report

Feba Sam¹, Swathy S²

Department of Pharmacy Practice, The Oxford College of Pharmacy Bengaluru, Karnataka, India

Abstract: *Vesiculobullous Rash is an idiosyncratic type B reaction occurring at recommended dose of cefpodoxime. Although it is a common third generation of Cephalosporin, it is rare in newer idiosyncratic ADR. It is a delayed type of hypersensitivity reaction that occurs as a blister formation in skin site due to repeated intake of an offending drug. Common side effects of cefpodoximeproxetil are gastrointestinal disturbance and dermatologic reactions. Here we report a case of formation of vesiculobullous rashes by the type B hypersensitivity reaction due to CefpodoximeProxetil.*

Keywords: Cephalosporin, Cefpodoximeproxetil, Vesiculo bullous rash

1. Introduction

Antibiotic therapy is growing more tortuous, thus making appropriate therapy of antibiotic prescribing increasingly challenging. Among all the antibiotics Cephalosporins are prescribed widely due to its extended spectrum of activity. Among cephalosporin, third generation of cephalosporins are widely prescribed. Beta-Lactams, particularly cephalosporin, may cause several kinds of allergic reactions, which have been classified as immediate, accelerated, or delayed according to their time interval between the last drug administration and their onset. Like penicillins, cephalosporins can cause non-immediate reactions (i.e. occurring > 1 hour and within 7 days after the last drug administration)⁽¹⁾.

Cefpodoximeproxetil has a broad spectrum of activity against both gram-positive and gram-negative bacteria. Cefpodoximeproxetil is an oral third generation cephalosporin antibiotic, used to treat different types of infections caused by bacteria. The commonly observed Cephalosporin side effects includes: GI disturbances, Vaginal infection and headache and the rare side effects includes; Dehydration, Peripheral edema, urticaria, rashes etc.⁽²⁾ The most common side effects of Cefpodoximeproxetil involved gastrointestinal disturbance (4% to 12% of patients) and dermatologic reactions (2% to 8%). The aim of this case report is to inform about the rare adverse effects during the cefpodoximeproxetil therapy.

2. Case Report

A patient of 23-year-old man consulted the physician with complaints of high grade fever, impaired voice and sore throat along with Dysphagia. On physical Examination, The patient had inflamed tonsils, the neck lymph nodes were found to be enlarged and tender. The CBC report was as follows: Hb: 12.8g/dl, TLC: 9800 cells/cumm, Platelet: 2.06 lakhs, Polymorphs: 65%, Lymphocytes: 30%, Eosinophils: 5%, Monocytes: 2%. Hence the patient was diagnosed with Tonsillitis. He had no known allergy to any drugs and was prescribed- Tab. CALPODD- 200mg (CefpodoximeProxetil) (1-0-1), Cap. NEUROLIX PLUS (Vitamins and Minerals) (1-0-1), Tab. PANTAGUT 40mg (Pantoprazole) (1-0-1),

Tab. ZERODOL-P (Aceclofenac 100mg + Paracetamol 500mg) (1-0-1).

On the first day of therapy the patient developed fluid filled lesions on the fingers as well as soles of the feet. It eventually progressed to the scalp and on the back, the next day. He discontinued the medication and sought advice from the physician. Adverse reaction is confirmed by following investigations: Lesions found ~16hrs after administration of the first Dose and by physical examination we found widespread intensive itchiness with vesiculobullous rash. Chicken pox was found to be negative and Intra dermal testing was found to be Positive. Finally by Causality Assessment patient scored 7 in Naranjo scale.



Figure 1



Figure 2

3. Discussion

The Cephalosporin antibiotics have become a major part of the antibiotic formulary for hospitals in many affluent countries. Among all the antibiotics cefpodoximeproxetil is the least prescribed drug compared to other generation of cephalosporins (fig 1). They are prescribed for a broad variety of infections every day. Many open-label studies in Japanese children have shown 90% of bacterial eradication

and clinical efficacy, when **CefpodoximeProxetil** was used to treat for pharyngitis, tonsillitis, pneumonia, otitis media, urinary tract infections, and skin and soft tissue infections. Increasing resistance among many respiratory pathogens has created a big need for new antibiotics with potent microbiologic activity against gram positive and gram negative bacteria.⁽³⁾

Non-immediate manifestations or symptoms (which is occurring more than 1hr after Drug administration) particularly Maculopapular and urticarial eruptions, are rare during beta-lactam treatment.⁽⁴⁾The mechanisms involved in most non-immediate reactions seem to be heterogenous.

In our study we confirm that cefpodoximeproxetil was the cause of cutaneous reactions like itchy and bumpy skin and it should be diagnosed using particular skin test before administration. Third generation cephalosporins, cefuroxime is one of the most widely prescribed drug, In rare cases or due to any development of resistance, cefpodoximeproxetil can be opted as a drug.⁽⁵⁾

Vesiculobullous Rash is an adverse drug reaction of

cefepodoxime. It appears on almost all areas of the skin of human body. These rashes can also arise on skin regions where the mucous membrane is present. The major symptoms of vesiculobullous include: rashes, Itchiness and the rashes appear as elevated sacs on the skin. It is diagnosed by intradermal testing, patch test and prick test.⁽⁶⁾

Vesiculobullous rash is not a very serious condition in itself. In case of positive allergic reactions, Beta-lactam therapy should be avoided. Patients with mild symptoms, But, in majority of cases, it is a sign of some severe infection or complicated Health condition so it is better to start treatment at the earliest.⁽⁷⁾ Treatment will ensure a fast recovery from the adverse drug reaction with minimal pain and discomfort. It will also help you avoid any future health complication in itself. But in most cases, it is a sign of some severe infection or complicated Health condition so it is better to start treatment at the earliest. Treatment will ensure a fast recovery from the adverse drug reaction with minimal pain and discomfort. It will also help you avoid any future health complications.

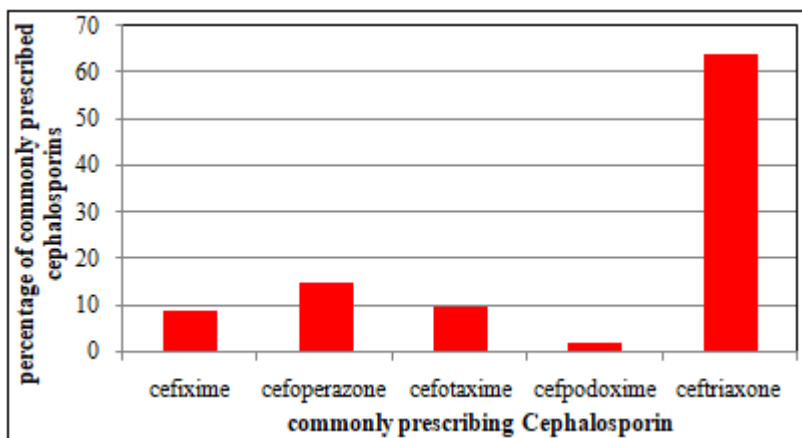


Figure 3: Prescription Pattern of Cephalosporin

4. Conclusions

Since Cephalosporins are a class of drugs which are widely prescribed for various disease conditions (such as pneumonia, sepsis etc.), there are a lot of studies which are done and have reported the adverse effects related to Cephalosporins, but there are hardly few studies which have reported the rare adverse effects caused by the usage of CefpodoximeProxetil, in particular. This study concludes that there are adverse effects even to less commonly prescribed Cephalosporin, so further studies should be conducted to report various adverse effects. Recommendations should be done to avoid cefpodoximeproxetil treatment when possible in case of patients with a history of IgE mediated hypersensitivity.

5. Financial Support and Sponsorship

Nil

6. Conflicts of Interest

There are no conflicts of interest

References

- [1] CefpodoximeProxetil. Del Beccaro, Mark A, MD pediatric. *Annals; Thorofare* vol.22, iss.3 (Mar 1993):187-188, 190-192, 195-196.
- [2] Safety Of Cefuroxime as an alternative in patients with a proven hypersensitivity to penicillins: A DAHD cohort survey. *Caimmis et al*2010; 153 (1):53-60.
- [3] Scott DD. Diagnosis and Management of Immediate hypersensitivity Reactions to cephalosporins. *clinic Rev allerg Immunol* 2013; 45:131-42.
- [4] William Fm, Janis E B. Thecephalosporins. *Mayo clinic proceedings*.1999 Feb 74; 187-95.
- [5] Active Monitoring of adverse drug reactions in children.Menniti-ippolito et al.vol 355, iss.9215, (May 6, 2000):1613-4.
- [6] CefpodoximeProxetil: First report of acute interstitial nephritis and immune haemolytic anaemia. Case report.

- Anonymous Reactions weekly; Auckland iss.1492, (Mar 15, 2014).
- [7] The cephalosporins. Marshall, William F; Blair, JanisE.Mayo clinic proceedings; Rochester vol.74, iss 2, (feb 1999): 187-95.
- [8] Cefpodoximeproxetil (vantin) wong, Tiffany. Infectious Disease alert. Atlanta vol.36, iss 4, (jan 2017)
- [9] Interstitial concentrations of Cefpodoxime Liu, ping et al. The Journal of Anti microbial chemotherapy, suppl. cefpodoxime fighting bacterial resistance. Oxford vol.50, iss .1, (jul 2002)
- [10] When to use the newer beta lactam antibiotics .Rosenfeld et al patient care; Oradell vol.29, iss.14, (sep 15, 1995):119.
- [11] Changes in fecal flora and comparative multiple dose pharmacokinetics of ceftibuten, cefpodoximeproxetil and amoxicillin/clavulanate. Hamacher et al. Clinical Microbiology and infection; Basel vol.5, iss.6, (jun 1999):339.
- [12] Occupational skin Infections Harries, MJ: Lear, j T. Occupational Medicine; Oxford vol.54, iss.7, (oct 2004):441.9.
- [13] Fixed drug reaction. Monroe et al Dermatology Nursing; pitman vol.17, iss.2, (Apr 2005):146