

A Case Report on Ceftriaxone Induced Hypersensitivity Reaction

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ABSTRACT

Cephalosporin's are the most widely used antibiotic for the treatment of common infections consisting of two ring system which includes a beta lactam ring condensed with dihydrothiazine ring. Ceftriaxone is a third generation cephalosporin which are active against gram negative bacilli. This drug is known to be associated with rare and mild side-effects such as urticaria, skin rash, diarrhoea, vomiting, transient neutropenia and haemolysis. Drug hypersensitivity reactions are immunologic responses to medications. The hypersensitivity reactions to ceftriaxone is mainly treated with corticosteroids, antihistamines and symptomatic treatments.

Keywords: Ceftriaxone, Cephalosporin, Rash, Urticaria, hypersensitivity reaction

I. INTRODUCTION

Cephalosporin's are third generation cephalosporin which are more active against Gram negative bacilli than the first and second generation cephalosporin². Cephalosporin's are one of the most commonly prescribed antibiotics along with penicillin's, because of their broad spectrum of activity. As the therapeutics used of cephalosporin's are increasing, reports of hypersensitivity reaction are also on the increasing¹. Ceftriaxone selectively and irreversibly inhibits bacterial cell wall synthesis by binding to transpeptidase also called transaminase, which are penicillin binding protein (PBP) that catalyze the cross linking of peptidoglycan polymers forming bacterial cell wall³. This drugs is known to be associated with rare and mild slide effect such as Urticaria, skin rash, diarrhea, vomiting, transient neutropenia and haemolysis⁴. Drugs hypersensitivity reactions are immunologic response to medications. The World Allergy Organization recommend categorizing hypersensitivity reactions on the basis of timing of the appearance of symptoms as immediate (i.e., onset after 1 hour of drug exposure) reactions.

Delayed- type (i.e., onset after 1 hour of drug exposure) reactions most commonly present as rashes or skin lesions⁵.

II. CASE REPORT

A 28 years old female patient was admitted with complaints of breathlessness, cough and fever, and was diagnosed with lower respiratory tract infection. They undergo treatment with Ceftriaxone, Acetaminophen, Acetyl cysteine, Syp.Ascoryl (Terbutaline), Pantoprazole and Theophylline neb. She is having history of cough with expectoration for one week, with sputum white in color mucoid in consistency not fowl smelling. Haematological parameters showed Hb 11.9 (12-16g/dl), Total WBC count 12100 (4500-1100), ESR 28 (0-20mm/hr), chest x ray increase bronchovascular marking B/L left lung homogenous capacity.

The patient developed rash with bullous lesion due to Fixed Drug Eruption- secondary to Ceftriaxone on second day and it was take to the physician, and ceftriaxone was stopped on third day, and was given with the alternative of Levofloxacin 500mg along with inj. Dexamethasone, Calamine lotion.

At the time of discharge, the complain of cough with expectoration decreased, breathlessness decreased, and fever was relieved.

Rash which was the hypersensitivity towards Ceftriaxone was resolved once the drug was withdrawn.



Fig 01 : Ceftriaxone induced Skin Rash

III. DISCUSSION

Ceftriaxone is a third generation Cephalosporin, being commonly prescribed since 1984, having broad spectrum of activity¹. Ceftriaxone mainly causes side effects like Hypersensitivity reactions, Diarrhea, Vomiting, Transient neutropenia and hemolysis. Hypersensitive reactions that occur immediately within the first hour of administration are characterized by Urticaria, angioedema, rhinitis and anaphylactic shock¹. Pharmacovigilance is defined as the signs and activities involving to the detection, understanding, assessment and prevention of adverse drug reaction or any other drug related problems. Adverse drug reactions can occur due to the use of multiple or concurrent drugs, drug interaction³. While comparing our work with ceftriaxone induced rash dermatitis: In the case report, we observed that the Ceftriaxone has caused hypersensitivity reaction: Rash, the drug was withdrawn after two days of administration and additional supportive therapy like Inj. Dexamethasone and Calamine lotion was prescribed to treat skin rash.

IV. CONCLUSION

Ceftriaxone is a commonly prescribed Antibiotic for inpatients, but have multiple potential adverse effects. Clinicians should be aware of the possibility of anaphylaxis occurring with the test dose of ceftriaxone, especially because such a reaction could go unnoticed in patients with life threatening infections and unstable vital signs. Hence, it is important to recognize it rapidly and treat it effectively.

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