WORLD JOURNAL OF CURRENT MEDICAL AND PHARMACEUTICAL RESEARCH

www.wjcmpr.com ISSN: 2582-0222

# A Case Report on Ceftriaxone Induced Maculopapular Rash

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ABSTRACT

Ceftriaxone, a third-generation cephalosporin, is being commonly prescribed since 1984. It is used as an antibiotic across almost all specialties for various conditions. Ceftriaxone induces different hypersensitivity type of reactions and maculopapular rash is one among those adverse drug reactions. This is a case report of 50year old female patient who was admitted in medical ward with a chief complaint of fever since 2 months and also the patient was NACO +ve since one month and now she is diagnosed as cervical TB lymphadenitis. Before diagnosing as TB based on patient's symptoms, physician prescribed Inj. Ceftriaxone as a prophylactic treatment along with Inj. piperacillin + tazobactum and both of the drugs administrated simultaneously. As a clinical pharmacist intervention, it was a mechanism duplication therapy and the ADR was induced by one of the suspected drugs and because of that Ceftriaxone was stopped and they continued treatment symptomatically for ADR and after 5 days symptoms are cured and finally they were diagnosed by the dermatologist as Maculopapular rashes. We conclude that ADR might have been possible with same dynamic activity medication duplication therapy of Ceftriaxone and Piperacillin + Tazobactum. We should monitor the prescription always with drug relevant problems (DRP's) to avoid drug induced complications in a patient. This prescription monitoring will assure us to give safest and effective therapy with best economic cost.

Key words:
Ceftriaxone,
Maculopapular Rash,
Adverse Drug Reaction.

Article History:
*Received On: 02.01.2020*
*Revised On:05.03.2020*
*Accepted On:16.03.2020*

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DOI: https://doi.org/10.37022/WJCMPR.2020.2201

## INTRODUCTION

Ceftriaxone, a cephalosporin is used for variety of infections. This drug is known to be associated with rare and mild side-effects such as Utricaria, skin rash, diarrhoea, vomiting, transient neutropenia, and haemolysis. Drug hypersensitivity reactions are immunologic responses to medications. The World Allergy organization recommends categorizing hypersensitivity reactions on the basis of timing of the appearance of symptoms as immediate (ie, develops within 1 hour of drug exposure) or delayed-type (i.e., onset after 1 hour of drug exposure) reactions. Delayed-type reactions most commonly present as rashes or skin lesions[1].

Incidence of Ceftriaxone related hypersensitivity reaction is between 1-3%[2]. Drug rashes usually are caused by an allergic reaction to a drug. Typical symptoms include redness, bumps, blisters, hives, itching, and sometimes peeling, or pain. Every drug a person takes may have to be stopped to figure out which one is causing the rash. Most drug rashes resolve once the drug is stopped, but mild reactions may be treated with creams to decrease symptoms and serious reactions may require treatment with drugs such as epinephrine (given by injection), diphenhydramine, and/or a corticosteroid to prevent complications. The word "rash" refers to changes in skin color (such as redness) and/or texture (such as bumps or swelling). Many rashes itch, such as those that often develop after an allergic reaction, but some rashes are painful or cause no symptoms. Drugs can cause rashes in several ways[3].

## CASE REPORT

A 50 year old female patient was admitted in female medical ward in King George Hospital, Visakhapatnam with a chief complaint of fever since 2 months. She had a past medical history of known NACO +ve and on anti-retroviral therapy since 1 month and had a history of swelling over right side of neck since 2 months and history of itching all over the body since 4 days. She was prescribed with inj. Ceftriaxone, tab. Azythromycin, tab. Citrizine, inj.avil, inj. Pantop, inj. Zofer, syp.ambroxyl, inj. Pipzo, inj. Metronidazole, tab. B complex and anti tubercular therapy which was continued for 3days. On next day she developed maculopapular rash all over the body associated with itching, facial puffiness, difficulty in speaking and swallowing and lip swelling. Inj. Ceftriaxone was stopped after 3 days of appearance of these complaints so we suspect that it is a condition of Ceftriaxone induced maculopapular rash. Fine needle aspiration of right cervical lymph node shown necrotising granulomatous lymphadenitis compatible with tubercular etiology. She was diagnosed with cervical TB lymphadenitis.

## ADR HISTORY

Patient was administered with Ceftriaxone from 22/11/2019 to 24/11/2019 prophylactically and piperacillin+tazobactum were given as emperical therapy. Maculopapular rashes were observed on 2nd day of treatment. After 3 days physician stopped Ceftriaxone and the patient was administered with supportive therapy which included Inj. Dexamethasone 2mg TID and Calamine+ Liq.Paraffin lotion BD. After 5 days the patient was discharged against medical advices .We suspect that the ADR occurred due to Ceftriaxone as per analysis of **Hartwig severity assessment scale and WHO-causality assessment scale.** Symptoms include: Maculopapular rash all over the body associated with itching, facial puffiness,

difficulty in speaking and swallowing and lip swelling.

**ADR MANAGEMENT**

ADR management includes withdrawal or suspension, dose reduction of suspected drug and administration of supportive therapy. In this case the suspected drug Ceftriaxone was discontinued.

**ADR ANALYSIS**

| Suspected drug and reactions | Hartwig severity assessment scale | WHO-causality assessment scale |
|---|---|---|
| Ceftriaxone induced Maculopapular rash | Moderate level-3 | Probable |

**CLINICAL PHARMACIST PRESCRIPTION EVALUATION**

The prescription had a duplication therapy involving Ceftriaxone and piperacillin+tazobactum where both drugs have same mechanism of action which acts on beta lactum ring. So we suspect that ADR has occurred because of this duplication therapy.

**DISCUSSION**

Ceftriaxone, a third-generation cephalosporin, is being commonly prescribed since 1984. It is used as an antibiotic across almost all specialties for various conditions. Ceftriaxone-induced urticaria, rash, exanthema, and pruritus are the most common adverse effects[4].While comparing our work with Ceftriaxone Induced Rash Dermatitis: A Case Report Vageeshwari Devuni, we observed that the suspected drug was discontinued and additional supportive therapy like inj. Dexamethasone and calamine lotion was prescribed to reduce the rash.

**CONCLUSION**

Ceftriaxone is commonly prescribed antibiotic to treat infections. Physician must suspect if such reaction occurs during therapy involving Ceftriaxone and should carefully evaluate drug associated reaction. It is important that skin reactions are identified and documented in the patient record and patient should be explained properly not to use that drug so that their recurrence can be avoided in future and close monitoring of patients is very important and prescription must be analysed carefully. This will assure us to give safest and effective therapy with best economic cost.

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