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DISSEMINATED FIXED DRUG ERUPTION INDUCED BY CEFOPERAZONE SULBACTAM IN POST-SNAKE BITE CELLULITIS MANAGEMENT: A RARE CASE REPORT

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ABSTRACT Disseminated Fixed drug eruption is a type of rare but significant cutaneous adverse reaction (CADR) characterised by widespread, recurrent erythematous or violaceous plaques at fixed sites upon re-exposure to a causative drug. We present a case of disseminated FDE in a 30-year-old female who developed widespread well-defined erythematous plaques involving multiple body sites following administration of Cefoperazone sulbactam for the management of Post-snake bite cellulitis. The patient was managed with cessation of the offending medications and supportive treatment, leading to resolution of the reaction. This case highlights the importance of recognising Disseminating FDE as a potential adverse effect of commonly used medications, necessitating prompt identification and appropriate management strategies.

KEYWORDS : Fixed Drug Eruption, Disseminated, Cefoperazone Sulbactam, Adverse Drug Reaction.

INTODUCTION

Fixed Drug Eruption is a distinct form of cutaneous adverse drug reaction (CADR), classically defined by the recurrence of well-demarcated, erythematous lesions at same skin or mucosal sites upon re-exposure to the causative drug, eventually resolving to leave characteristic residual hyperpigmentation.[1,2] While typical FDE presents as a solitary patch, the appearance of multiple, widespread lesions across non-contagious sites, known as Disseminated Fixed Drug Eruption (DFDE), represents a challenging variant that requires careful differentiation from other severe CADRs. Antimicrobials, including beta-lactams, sulphonamides, tetracyclines, fluoroquinolones and nitroimidazoles, are well-documented causes of FDE. However, FDE due to Cefoperazone-sulbactam, a third-generation cephalosporin combined with beta-lactamase inhibitor, an antibiotic used to treat a wide range of bacterial infections including various infectious diseases. Here, we report a rare case of Disseminated fixed drug eruption induced by Cefoperazone sulbactam in a 30-year-old female undergoing treatment for post-snake bite cellulitis. This report aims to emphasize the need for clinical awareness, accurate diagnosis and it also highlights the importance of early recognising this ADR in clinical practise.[1]

Case Presentation

A 30-year-old female was admitted to hospital with the complaint of pus-filled, inflammation at the site of snake-bite (10 days ago), which was diagnosed as Right-Foot cellulitis. There was no history of TB, HIV, asthma, or epilepsy in the family.

Vital Sign and Physical Examination

Examination revealed unstable hemodynamic with a temperature of 100°F, blood pressure of 110/70 mmHg, and pulse rate of 99 beats per minute. The respiratory rate remained stable at 23 breaths per minute, with oxygen saturation maintaining at 98% on room air.

Cardiovascular examination demonstrated normal heart sounds without any murmurs or additional heart sounds. ECHO test revealed 60% of ejection fraction. Respiratory examination showed bilateral non-vascular breath sounds, added breath sounds and crepitations.

Lab Investigation

The patient developed a multiple erythematous papule of varying sizes and plaques all over the B/L upper and lower limb, chest, back and abdomen. The total white blood cell count was normal at 4.1 x 10^3 cells/µL. Haemoglobin was 9.3 g/dl and platelet were 35.5 x 10^3/µL.

Biochemical analysis of liver function tests including SGOT – 19, SGPT 9, Total bilirubin was 0.45. Renal function tests including serum creatinine was 0.71 mg/dL and urea was 13 mg/dL, which were within normal limits. The coagulation profile involving Bleeding time – 1'35" and clotting time – 4'40". All serum electrolytes were normal – sodium 139mEq/L, potassium 4mEq/L and chlorine 102 mEq/L.

Course in the Hospital

Patient was treated for cellulitis with drugs: INJ. Cefoperazone sulbactam 1.5g IV BD, INJ. Metronidazole 500mg, INJ. Ranitidine 50mg IV BD, TAB. Paracetamol 500mg TDS, TAB, FST BD and surgical interventions including, foot fasciotomy and wound debridement were done.

Patient developed itching all over the limbs after injecting Cefoperazone sulbactam on the first day. But patient was continued with the same regimen for a week in spite of the complaint. Upon examination, the patient exhibited multiple erythematous, well-defined papules distributed across her B/L limbs, chest, back and abdomen. The papules ranged in varying sizes, later developed into plaques [Figure 1]. A thorough review of patient's medical and medication revealed no previous episodes of similar skin reactions or known drug allergies.

The patient was referred to the dermatologist for opinion. With the given clinical presentation and temporal relationship between the initiation of antimicrobial therapy and the onset of skin lesions, the reaction was diagnosed as Disseminated Fixed Drug Eruption induced by Cefoperazone-Sulbactam. This serious adverse reaction was reported to Adverse drug monitoring centre, Government Medical College, Nagapattinam.

The decision made was to stop the drug and casualty assessment was done using Naranjo scale and was found to be Probable. The patient was provided with supportive treatment including TAB. Prednisolone 5mg OD, TAB. Cetirizine 10mg HS, Liquid Paraffin, Betamethasone ointment to alleviate symptoms. Over the next 5 days, there was marked clinical improvement in patient. The patient was discharged on day 17, after partially recovering from the reaction.

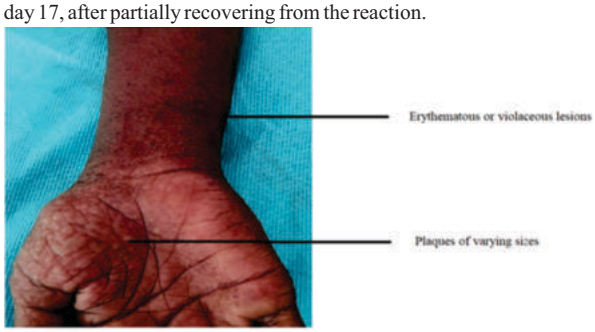

FIGURE 1: *This picture shows the erythematous or violaceous lesions and plaques of varying sizes: which was attributed to Disseminated Fixed Drug Eruption induced by Cefoperazone sulbactam.*

DISCUSSION

Fixed drug eruption (FDE) is a well-recognized cutaneous adverse drug reaction characterized by the sudden appearance of well-demarcated erythematous patches or plaques following re-exposure to causative drug.[1] The hallmark feature of FDE is its recurrence at the same anatomical sites upon re-exposure to the offending agent, and the lesions often heal with post-inflammatory hyperpigmentation. The pathogenesis of FDE involves Type IV (delayed) hypersensitivity

reactions, mediated by drug-specific CD8+ T cells residing in the epidermis of previously affected sites. Upon re-exposure to the causative drug, these T cells are reactivated, releasing cytokines that trigger keratinocyte apoptosis and local inflammation [3].

In the present case, the patient developed itching and erythematous papules within 24 hours of initiating cefoperazone–sulbactam therapy but continued receiving the drug for five more days for the management of post–snake bite cellulitis. This re-exposure led to the development of disseminated fixed drug eruption (FDE). The lesions appeared as erythematous papules that later coalesced into plaques involving multiple body regions such as the Limb, chest, abdomen, and back, consistent with a disseminated pattern. The absence of systemic involvement, normal haematological and biochemical parameters, and prompt resolution after drug withdrawal further supported the diagnosis of FDE rather than other severe drug reactions like Stevens–Johnson syndrome or DRESS.

Cephalosporins are widely used β-lactam antibiotics with a favourable safety profile; however, they have been implicated in hypersensitivity reactions ranging from mild exanthematous rashes to anaphylaxis [4]. Among cephalosporins, cefoperazone-sulbactam–induced FDE is exceedingly rare, with only isolated reports documented in the literature. For example, Bhattacharya et al. reported a similar reaction following cefoperazone use, highlighting that even newer-generation cephalosporins can provoke immune-mediated cutaneous eruptions [5].

Cross-reactivity among β-lactams is often attributed to structural similarities in the β-lactam ring or side chains. In this case, however, the patient had no prior history of drug allergy, suggesting sensitization occurred during the current course. The rapid onset of symptoms after the first dose also suggests previous sensitization through unnoticed prior exposure to related β-lactam antibiotics.[4] The management of DFDE primarily involves immediate withdrawal of the offending drug, symptomatic treatment with oral antihistamines, and topical corticosteroids to alleviate symptoms and require close monitoring for potential complications. Patient counselling on drug avoidance and documentation of the adverse reaction in medical records are essential to prevent re-exposure. Regular follow-up visits were scheduled to monitor the resolution of skin lesions and assess for any signs of disease progression. [1]

This case adds to the limited body of evidence regarding cefoperazone-sulbactam–induced DFDE, emphasizing the importance of clinical vigilance during antibiotic therapy, especially in polypharmacy settings such as cellulitis management. Recognizing early signs of cutaneous drug reactions allows timely intervention and reduces the risk of recurrence or complications.[6]

CONCLUSION

This case highlights a rare presentation of Disseminated fixed drug eruption (FDE) induced by Cefoperazone-Sulbactam, administered for the management of post-snake bite cellulitis. Despite being a widely prescribed β-lactamase inhibitor combination, cefoperazone-sulbactam can rarely trigger immune-mediated cutaneous reactions.[3-5,7] Thus, this case highlights the importance of vigilant monitoring for cutaneous adverse reactions in patients receiving antimicrobial therapy and emphasizes the need for prompt recognition and appropriate management of DFDE to ensure favourable outcomes.[6]

The diagnosis was supported by the temporal relationship, absence of systemic features, normal laboratory parameters, and rapid recovery after drug withdrawal. [3,5] Early identification and prompt discontinuation of the suspected drug remain the cornerstone of management.[6]

Clinicians should maintain a high index of suspicion when patients on antibiotic therapy develop new skin lesions, even in the absence of systemic symptoms. [2,7] Documentation of such reactions and patient education are vital to prevent recurrence. This case underscores the importance of pharmacovigilance and reporting of rare adverse drug reactions to strengthen clinical awareness and patient safety data regarding commonly used antimicrobial agents. [1]

REFERENCES

1. Saurabh, Praveen Kumar Rathore, Pushpendra Singh, Ashwin Charaniya, Akanksha Singh. Disseminated fixed drug eruption: unmasking a rare presentation of furazolidone and metronidazole combination therapy. Int J Health Sci Res. 2024; 14(5):210-214. DOI: 10.52403/ijhsr.20240525
2. Criado PR, Avancini J, Santi CG, Marques GF, Mello S, Costa CS, et al. Fixed drug eruption: state of the art. Clin Dermatol. 2018;36(2):201–6. Available from: https://doi.org/10.1016/j.clindermatol.2017.10.009
3. Mahboob A, Haroon TS. Drugs causing fixed eruptions: a study of 450 cases. Int J Dermatol. 1998;37(11):833–8. Available from: https://doi.org/10.1046/j.1365-4362.1998.00442.x
4. Romano A, Gaeta F, Arribas Poves MF, Valluzzi RL. Cross-reactivity among β-lactams. Curr Allergy Asthma Rep. 2016;16(3):24. Available from: https://doi.org/10.1007/s11882-016-0600-9
5. Bhattacharya A, Ghosh R, Barua S, Sarkar S. Cefoperazone-induced fixed drug eruption: a rare case report. Indian J Pharmacol. 2014;46(2):234–6. Available from: https://doi.org/10.4103/0253-7613.129356
6. Sehgal VN, Srivastava G. Fixed drug eruption (FDE): changing scenario of incriminating drugs. Int J Dermatol. 2006;45(8):897–908. Available from: https://doi.org/10.1111/j.1365-4632.2006.02718.x
7. Korkmaz S, Altunay I, Demirci GT, Yalcin B. Fixed drug eruption induced by beta-lactam antibiotics: a case series and literature review. Dermatol Ther. 2020;33(6): e14010. Available from: https://doi.org/10.1111/dth.14010