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CASE REPORT ON ADVERSE DRUG REACTION DUE TO CIPROFLOXACIN-A CASE OF FIXED DRUG ERUPTION

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Abstract

A 45-year-old female presented to the dermatology department with complaints of uterine itching and a burning sensation during micturition. Ciprofloxacin 500mg PO BD was prescribed to alleviate the symptoms. However, within two hours of initiating treatment, the patient developed red lesions on her right forearm and left hand, associated with fluid-filled lesions on an erythematous base. Ciprofloxacin was identified as the causative agent of this adverse drug reaction (ADR). Given the potential severity of ADRs associated with Ciprofloxacin, it is crucial to closely monitor patients for early signs of reactions. Early recognition, prompt dechallenge, and effective management strategies are necessary to ensure patient safety.

Keywords: Ciprofloxacin, fixed drug eruption, ADR, erythematous.

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Introduction

Ciprofloxacin is a broad-spectrum antibiotic that belongs to the quinolone class. It is commonly used to treat various bacterial infections by inhibiting bacterial DNA replication. However, it is important to note that Ciprofloxacin, like other antibiotics, can cause adverse reactions, particularly in the skin. Fixed drug eruption (FDE) is one such reaction, characterized by recurrent red lesions in the same site upon re-administration of the offending drug. This report describes a case of fixed drug eruption induced by Ciprofloxacin, emphasizing the need for careful monitoring and quick intervention.

Case Report: A 45-year-old female patient presented to the dermatology department with a chief complaint of itching in the uterus and a burning sensation during urination. To manage these symptoms, Ciprofloxacin 500mg was prescribed to be taken twice daily (PO BD).

Within two hours of administration, the patient developed red-colored lesions on her right forearm and the left hand's latex region. The lesions on the right forearm were fluid-filled and were located on an erythematous base. Additionally, the patient developed left axillary lymphadenopathy. The laboratory investigations revealed:

- **Complete Blood Count (CBC):** Eosinophils 101 (14%),
- **Liver Function Test (LFT):**
 - **Aspartate aminotransferase (AST):** 84 U/L (normal range 10-35 U/L),
 - **Alanine aminotransferase (ALT):** 67 U/L (normal range 10-40 U/L),
- Ultrasound of abdomen showed splenomegaly, prostatomegaly, and lymph node enlargement (>2 cm).

Given the clinical presentation, the patient was referred to the head of the department to confirm the causality of the ADR. A dechallenge test was conducted by withdrawing Ciprofloxacin from the treatment regimen. The symptoms gradually subsided, confirming that Ciprofloxacin was indeed the causative agent.



Figure: 01 Red lesions on her right forearm and left hand

Discussion

Fixed Drug Eruption (FDE) is a type of allergic reaction that typically presents as localized red lesions, often in the same area upon re-exposure to the drug. In this case, Ciprofloxacin, a commonly used antibiotic, was identified as the cause of the skin reaction. According to the World Health Organization, ADRs are toxic or unintended responses to drugs administered at normal doses for prophylaxis, diagnosis, or treatment.

FDE is a well-documented adverse reaction to various drugs, including Ciprofloxacin, and is characterized by erythematous macules or papules, often with vesicular or bullous lesions. The condition tends to recur in the same site after repeated exposure to the causative drug. Although the precise mechanism of Ciprofloxacin-induced FDE is not fully understood, it is believed to involve immune-mediated processes, such as the activation of T-cells and eosinophils.

In our case, the patient presented with erythematous and fluid-filled lesions, which is typical of FDE. The drug was withdrawn, and the lesions began to resolve, further supporting the diagnosis of an ADR caused by Ciprofloxacin.

Causality Assessment

To assess the causality of the ADR, we applied both the WHO-UMC and Naranjo's scales. According to the WHO-UMC scale, the ADR was classified as "Probable," while the Naranjo scale indicated a "Likely" association between Ciprofloxacin and the reaction.

The causality assessment results are summarized as follows:

- **WHO-UMC Scale: Probable**
- **Naranjo's Scale: Likely**

Additionally, the severity of the reaction was categorized as moderate, and the reaction was deemed "probably preventable." The predictability of the ADR was identified as Type A, suggesting it was a dose-related, expected reaction.

Results and Discussion: Ciprofloxacin is associated with various cutaneous adverse reactions, including FDE, photosensitivity, erythema multiforme, and even severe conditions such as toxic epidermal necrolysis (TEN). The incidence of FDE associated with Ciprofloxacin has been documented, particularly in Asian populations, and is often related to the presence of hypersensitivity reactions.

Treatment options for FDE include the immediate withdrawal of the offending drug, followed by symptomatic management such as the use of antihistamines, corticosteroids, or other immunosuppressive agents in severe cases. Despite the lack of randomized controlled trials, some case reports suggest that intravenous immunoglobulins, plasmapheresis, and systemic corticosteroids may offer benefits in managing severe reactions.

Acknowledgment: The clinical team involved in the patient care and causality assessment is greatly acknowledged for their contribution to this case.

Table 1: Causality Assessment of Suspected ADR

| ADR Scale | WHO-UMC | Naranjo's |
|------------|----------|-----------|
| Assessment | Probable | Likely |

Table 2: Analysis of Observed ADR

| Severity Assessment | Moderate Level (4a) |
|---------------------|----------------------|
| Preventability | Probably Preventable |
| Predictability | Type A |

Conclusion

This case highlights the importance of vigilance in recognizing and managing adverse drug reactions. Ciprofloxacin, though effective in treating bacterial infections, can lead to serious skin reactions such as fixed drug eruption. Timely recognition, early dechallenge, and careful monitoring are critical to minimizing harm. Clinical pharmacists play a key role in educating healthcare providers and patients about the risks of ADRs, ensuring that drug-related reactions are managed effectively. Early detection and prompt withdrawal of the offending drug can significantly reduce the severity of ADRs and improve patient outcomes.

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Conflict of interest

Author arte declared that no conflict of Interest

Ethical Statement and Inform Consent

Author has taken consent from the author.

Author Contribution

All authors are contributed equally.

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