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Ofloxacin induced fixed drug eruption: A case report

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Abstract

Fluoroquinolones are widely used antimicrobial in treatment of various bacterial infections and Fixed Drug Eruptions are common cutaneous Adverse Drug Reactions (ADR) in children. However, very few cases of ofloxacin induced Fixed Drug Eruptions in paediatric population have been reported. Here we have a case of 14-year-old patient with a fixed drug eruption due to ofloxacin which developed few hours after intake of an ofloxacin tablet.

Keywords

Fixed drug eruption; ADR; hyperpigmentation; ofloxacin; paracetamol; rechallenge

Abbreviations

FDE: Fixed drug eruption; ADR: Adverse drug reaction; NSAIDs: Non-steroidal anti-inflammatory drugs; UTI: Urinary tract infection; OD: Once daily; CDR: Cutaneous drug reactions.

Introduction

Fixed Drug Eruption (FDE), a commonly seen cutaneous ADR in children and adolescents, is characterised by recurrent eruption at the same site upon administration of the offending drug and heals with residual hyperpigmentation [1]. Cutaneous drug eruptions are common with an incidence of 2-3% in hospitalised patients and FDE accounts for 16-21% of all cutaneous drug eruption. Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), antibiotics and antiepileptics have drug eruption rates approaching 1–5% [2,3].

Fluoroquinolones are commonly used, well tolerated antimicrobials used in the treatment of various bacterial infections [4]. Ofloxacin, a first-generation fluroquinolone, is widely prescribed to combat various infections like UTI, acute bacterial diarrhoea, enteric fever, STDs and other soft tissue infections [5]. Its commonly reported side effects include fever, acute renal failure, agranulocytosis and other dermatolo-

gical reactions [6].

Early detection of cutaneous lesions and immediate withdrawal of the offending drug can prevent progression of such reactions to their more severe variants thereby reducing morbidity and mortality. We have reported a case of ofloxacin induced fixed drug eruption.

Case Summary

A 14-year-old male patient was prescribed ofloxacin 200mg and paracetamol 650 mg for fever and headache by a private practitioner. Within a few hours of first dose the patient experienced itching and a burning sensation on the face and trunk. The patient was referred to the department of paediatrics for management of rash, high grade fever and headache.

Medical history revealed that a similar reaction developed about 2 years before with drugs which had been prescribed for fever and the parents were unable to recall the drug name. The patient develops rashes after administration of medication which later turned into blisters and left hyperpigmentation. Lesions were initially itchy and itching subsided with medication.

The suspected drugs (ofloxacin, paracetamol) were stopped and the patient was treated symptomatically with levocetirizine tablets, 10mg OD. This oral treatment was also supplemented with intravenous fluids. Laboratory findings did not reveal any significant abnormality. Later, a re-challenge was done with parental consent with paracetamol under continuous observation and there was neither any occurrence nor any progress of the adverse reaction. The treatment was continued and the lesions and symptoms improved gradually.

Considering the history, clinical features, re-challenge results, laboratory findings and the evidence from similar case reports, it was concluded this was a case of ofloxacin induced fixed drug eruption.

ADR Management

General management of ADR includes withdrawal/suspension, dose reduction of the suspected drug and administration of supportive therapy. In this case the suspected drugs were withdrawn and the patient was treated symptomatically.

ADR Analysis

Suspected drug: Ofloxacin	**Reaction:** fixed drug eruption	
Causality Assessment	Naranjo's Scale	Probable
	WHO Probability Scale	Possible
Severity	Hartwig &Siegels Scale	Level 4a
Preventability	Modified Schumock&Thorntons Scale	Definitely Preventable

Discussion

A drug induced reaction should be considered in any patient who is taking medications and who suddenly develops a cutaneous eruption [9]. But the paediatric population experiences a significant number of ADRs compared to adults. A lack of clinical trials in children's, paediatric dosage form and difference in pharmacokinetic and pharmacodynamics are some of the reasons that place children at risk of ADRs [7]. As per a recent meta-analysis, an average incidence of ADRs in paediatric population is 9.5% and incidence of paediatric hospital admissions related to ADRs is 2.1% [8].

FDE represents a unique CDR pattern characterized by skin lesion(s) that recur at the same anatomic site(s) upon repeated exposures to an offending agent. The skin lesions may be associated with a burning sensation and may be present in multiple numbers or progress to the development of central vesicles and bullae, particularly after the repeated use of an agent [10]. However, the lesions can also be generalized or random. Different presentations may include non-pigmented, giant (>20 cm), urticarial, and papular lesions. Thus, FDE may mimic lichen planus, erythema multiforme, Stevens Johnson syndrome, paronychia, cheilitis, and psoriasis.

Antibiotics, antiepileptics, NSAIDs, and phenothiazines are the major causative agents of FDE, although numerous other agents and certain foods such as cashews and licorice have also been reported as causative agents [12]. The fluoroquinolones as a class are generally well tolerated; most adverse effects are mild in severity, self-limiting and rarely result in treatment discontinuation [13]. Ofloxacin is usually well tolerated and is devoid of serious adverse reactions. However, in 2004 the US-FDA requested new warning label to be added to all the fluoroquinolones regarding peripheral neuropathy, tendon damage, QTc prolongation, Steven-Johnson syndrome and Toxic Epidermal Necrolysis [14]. Considering the widespread use of ofloxacin, a fluoroquinolone, in the management of various bacterial infections, it is important to consider these drugs as possible etiologic agents of FDE.

The exact pathogenesis of FDE is unknown. The offending drug is thought to function as a hapten that preferentially binds to basal keratinocytes, thereby releasing lymphokines and antibodies thus damaging the basal cell layer. According to one hypothesis FDE is classified as a type IVc immunologic reaction because of latent cytotoxic T cells in the lesions, which may become reactivated. There is also an association with HLA class I antigens, suggesting that there may be a genetic predisposition to these reactions [11]. Recent findings show that intraepidermal CD8+ T cells with an effector memory phenotype resident in fixed drug eruption lesions have a major contributing role in the development of localized tissue damage. Although any age may be affected, ratio of male: female incidence is generally equal.

ADR Causality assessment, severity and preventability for this was made using Naranjo causality assessment scale, WHO Probability Scale, Hartwig & Siegels Scale, Modified Schumock & Thorntons Scale respectively.

Conclusion

Ofloxacin is a widely prescribed antibiotic and there are very few cases of ofloxacin induced fixed drug eruption reported in paediatric patients. Identifying the drug reactions, their patterns, morphology and its severity as well as prescribing medications on the basis of history will reduce the prevalence of such adverse reactions. Early detection and immediate withdrawal of the offending drug can prevent further progress of the reaction to its severe variants.

References

1. Lee AY. Fixed drug eruptions. Incidence, recognition, and avoidance. Am J ClinDermatol. 2000; 1: 277-285.

2. Raipurkar SV, Patel P, Mucchal V, Khurana R, Wadagbalkar P. Paracetamol induced fixed drug eruptions: case report. Int J ContempPediatr. 2015; 2: 257-259.

3. Butler DF. Fixed Drug Eruptions. Available athttp://emedicine.medscape.com/article/1336702-overview. 2016.

4. Hager JL, Mir MR, Hsu S. Fluoroquinolone induced generalized fixed drug eruption. Dermatol Online J. 2009; 15: 8.

5. Smythe MA, Rybak MJ. Ofloxacin: A review. DrugIntell ClinPharm. 1989; 23: 839-846.

6. Kaur I, Jindal S, Grover IS. Cutaneous Adverse Drug Reaction with Ofloxacin. J Pharmacovigilance. 2014; 2: 144.

7. Temple ME, Robinson RF, Miller JC, Hayes JR, Nahata MC. Frequency and preventability of adverse drug reactions in paediatric patients. Drug Safety. 2004; 27: 819–29.

8. Impiccatore P, Choonara I, Clarkson A, Provasi D, Pandolfini C, Bonati M. Incidence of adverse drug reactions in paediatric in/outpatients: a systematic review and meta-analysis of prospective studies. Br J Clin Pharmacol. 2001; 52: 77–83.

9. Iannini P, Mandell L, Felmingham J, Patou G, Tillotson GS. Adverse cutaneous reactions and drugs. a focus on antimicrobials. J Chemother. 2006; 18: 127-139.

10. Svensson CK, Cowen EW, Gaspari AA. Cutaneous drug reactions. Pharmacol Rev. 2000; 53: 357-379.

11. Weedon D. The lichenoid reaction pattern ('interface dermatitis'). In: Weedon D, eds. SkinPathology. 2nd ed. London: Churchill Livingstone. 2002: 42-43.

12. Sehgal VN, Srivastava G. Fixed drug eruption (FDE): Changing scenario of incriminating drugs. IntJ Dermatol. 2006; 45: 897-908.

13. Ball P, Mandell L, Niki Y, Tillotson G. Comparative tolerability of the newer fluoroquinolone antibacterials. Drug Saf. 1999; 21: 407-421

14. Tanne JH. FDA adds- black box warning label to fluoroquinolone antibiotics. BMJ. 2008; 337: 135.

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