

Augmentin Induced Exfoliative Dermatitis: Case Report

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ABSTRACT

Exfoliative dermatitis is a very rare form of drug induced hypersensitivity reaction which usually involves skin and mucous membrane, can be seen from a few days to several weeks after the administration of drug.¹ Amoxicillin is a broad spectrum antibiotic, belongs to class amino-penicillin of beta-lactum antibiotics, and it is generally active against gram-positive bacteria, gram-negative bacteria and anaerobes which represent the major species present in the stomach, biliary tract and colorectum. Therefore, it is a preferred choice as a prophylaxis for abdominal surgery. It is usually combined with clavulanic acid which is a beta-lactamase inhibitor, in order to maintain greater efficacy and activity against beta-lactamase-positive strains.² Here is a case of delayed type of hypersensitivity reaction of a 58 years old female who developed multiple erythematous scaly plaques with erosion sign and exfoliation of skin seen all over the four limbs following the administration of Augmentin.

Key words: Augmentin, Erythoderma, Exfoliative Dermatitis, Delayed Hypersensitivity, Aminopenicillin, Severe cutaneous reaction.

INTRODUCTION

Exfoliative dermatitis (ED) is a condition in which skin becomes red and inflamed with different types and degrees of scaling. This condition is also referred as erythoderma. The exact underlying etiology of exfoliative dermatitis is unknown but the most common etiologies are underlying skin malignancy condition (psoriasis, atopic dermatitis, pityriasis, rubra pilaris, lymphoma etc.) Or certain drug reaction (allopurinol, antiepileptic, antibiotics, opiates, calcium channel blockers etc). Exfoliative dermatitis can be a serious medical emergency requiring immediate hospitalization.¹

Amoxicillin is a broad spectrum antibiotic, belongs to class amino-penicillin of beta-lactum antibiotics, and it is generally active against gram-positive bacteria, gram-negative bacteria and anaerobes which represent the major species present in the stomach, biliary tract and colorectum.

Therefore, it is a preferred choice as a prophylaxis for abdominal surgery. It is usually combined with clavulanic acid which is a beta-lactamase inhibitor, in order to maintain greater efficacy and activity against beta-lactamase-positive strains.² It is used for the short term treatment of infections in different parts of body caused by bacteria. Rarely adverse effects such as hypersensitivity reactions like exfoliative dermatitis(ED), Stevens-Johnson syndrome (SJS), hypersensitivity vasculitis are reported.³

Augmentin induced exfoliative dermatitis is rare but very serious skin reaction. The clinical characteristics are pruritis, erythema, and large scales on the skin. It usually occurs in few days to weeks after the administration of drug. The reaction either progresses as maculopapular rash or erythematous patches that leads to desquamation. Treatment includes immediate withdrawal of drug, supportive and symptomatic care, and dermatologic care for wounds, systemic

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corticosteroids and antihistamine for extreme conditions.⁴

CASE DESCRIPTION

Augmentin Induced Exfoliative Dermatitis

A 58-year-old female was admitted to surgical ICU started complaining of skin lesion all over the body associated with itching. She had undergone hernioplasty two days back. She had a history of HTN and T2DM for which she was taking Tab Cdtel-M 25 OD and Tab Zormet P2 BID respectively since 4 months. After her surgery, she was prescribed with Inj. Augmentin (1.2gm) 8 hourly as a post-operative antibiotic. On third day patient developed multiple erythematous scaly plaques with erosion sign and exfoliation of skin seen all over the four limbs Figure 1, 2, 3. On examination patient was conscious, oriented and stable. Systemic and laboratory findings didn't reveal any significant abnormality. Inj Augmentin (1.2gm) was immediately stopped and Inj Avil (3 ml BID), Inj. Dexamethasone (2 cc OD), and Vaseline gauze dressing was advised. After seven days her symptoms gradually improved and later was discharged.



Figure 1: Multiple erythematous scaly plaque erosion sign over bilateral thigh, buttocks, legs, feet and oozing seen over left lower leg.



Figure 2 and 3: Multiple erythematous scaly plaque erosion sign over bilateral hands and purpura seen over right arm.

Medication Chart

Drug (Brand Name)	Generic Name	Dose	Frequency
IVF DNS + Optineuron	Multivitamin B complex(B ₁ ,B ₆)	3Amp in 0.9% DNS(500ml)	8 hourly
Inj Heparin	Heparin	5000IU	8 hourly
Inj. HAI	Human Act rapid Insulin	4U-6U-6U-4U	1-1-1-1
Inj Augmentin	Amoxicillin/ Potassium Clavulanate	1.2 gm	8 hourly
Inj Emset	Ondansetron	2 cc	SOS
Inj Pan	Pantoprazole	40 mg	BID
Inj Dexona	Dexamethasone	2cc	OD
Inj Clindamycin	Clindamycin	600 mg	1-1-1
Inj Avil	Pheniramine Maleate	2ml	BID
Tab. Cdtel-M 25	Telmisartan / Metoprolol	40 gm / 20 mg	OD
Tab. Zormet P2	Glimepiride/ Pioglitazone/ Metformin	2 mg / 15 mg / 500 mg	1-0-1

DISCHARGE MEDICATION

Drug (Brand Name)	Generic Name	Dose	Frequency
Tab. Cdtel-M 25	Telmisartan / Metoprolol	40 mg / 25 mg	OD
Tab. Zormet P2	Glimepiride/ Pioglitazone/ Metformin	2 mg / 15 mg / 500 mg	1-0-1
Cap.Autrin	Multivitamin	15 mcg	1-0-1

CAUSALITY ASSESSMENT

Causality and severity assessment have been done with the help of five different scales and results are as follows:

Scale's Name	Result
Naranjo's algorithm	Probable
Hartwig and siegel	Severe (Level 5)
Karch and lasagna	Probable
Who probability	Probable

DISCUSSION

Amoxicillin is a broad spectrum antibiotic, it is usually combined with clavulanic acid which is a beta-lactamase inhibitor, in order to maintain greater efficacy and activity against beta-lactamase-positive strains.² It has been found that skin reactions are higher in amoxicillin than its combination. But serious cutaneous reaction like SJ, TEN, and EM were more commonly associated with Amoxicillin/clavunate combination.³ The presence of amino group at alpha position plays a major role in both immediate and delayed type of hypersensitivity reactions.⁵ It has been found that both beta lactam and its side chain are being recognized by T-cell which results in inflammatory response in the body.⁵ Most of the side effects of augmentin are mild in nature and are generally well tolerated. The adverse reactions includes Gastrointestinal (GI) such as nausea, vomiting, indigestion, gastritis, diarrhoea stomatitis, glossitis. Hypersensitivity Reactions like skin rashes, pruritus, urticaria, and severe cutaneous reactions like erythema multiforme (EM), rarely Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN). In our study exfoliative dermatitis was a result of delayed type of hypersensitivity reaction. In such cases culprit drug should be stopped and under physician's advice antihistamine and systemic corticosteroid should be started if necessary. Skin testing and patch testing for allergic dermatitis should be used to prevent such event.

CONCLUSION

Augmentin is one of the most widely prescribed and consumed drug. Most of the time it is well tolerated in the patients. Physician should properly monitor and evaluate

such drug induced reactions. A proper documentation and counselling should be provided to patient to avoid such recurrence in future. Patch testing and skin testing of allergic dermatitis should be done to prevent such event.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

ED: Exfoliative Dermatitis; **SJ:** Steven-Johnson Syndrome; **TEN:** Toxic Epidermal Necrolysis **EM:** Erythema Multiforme; **ADR:** Adverse Drug Reaction; **GI:** Gastrointestinal; **DH:** Delayed Hypersensitivity; **AP:** Aminopenicillin; **OD:** Once daily; **BID:** twice a day; **SOS:** as and when required.

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