

Azithromycin Induced Erythema Multiform – A Case Report

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Background: Erythema Multiforme (EM) is an acute, immune-mediated skin condition characterized by the sudden onset of distinctive, target-like lesions. While EM can occur due to various causes, including infections and autoimmune disorders, drug-induced EM is a significant and increasingly recognized cause.

Drug-induced EM is a rare condition, with an estimated incidence of 1-5 cases per 100,000 persons per year. However, this condition is likely underreported, and the true incidence may be higher.

Various drugs have been implicated in causing EM, including:

- Antibiotics (e.g., penicillins, sulfonamides)
- Anticonvulsants (e.g., phenytoin, carbamazepine)
- Nonsteroidal anti-inflammatory drugs (NSAIDs) (e.g., ibuprofen, naproxen)
- Antihistamines
- Chemotherapeutic agents

The exact mechanisms of drug-induced EM are not fully understood. However, it is thought that drugs can trigger an immune response, leading to the activation of T cells and the release of cytokines, which cause skin damage and the characteristic target lesions.

Drug-induced EM typically presents with:

- Sudden onset of target-like lesions, often on the palms, soles, and extremities
- Lesions may be accompanied by systemic symptoms, such as fever, fatigue, and arthralgias
- Mucous membrane involvement, including oral and genital ulcers, may occur.

Early recognition of drug-induced EM is crucial to prevent long-term complications, such as scarring, disability, and even mortality. A thorough medical history, physical examination, and laboratory tests are essential for diagnosis.

Discussion: A 48 year old male diagnosed with lower respiratory tract infection was presented with fever, wet cough persisting for the last one week, difficulty in breathing for the last five days followed by poor appetite, fatigue and colour of the sputum was found to be yellow colour since 3 days. His medical consultant suggested to undergo laboratory investigations such as chest x ray, complete blood count. The family history of this patient was found to be father was known case of COPD since 15 years for which he has been receiving Allopathic system of medications since 15 years and mother was known case of hypertension with osteoporosis since 5 years for which she has been receiving Ayurveda system of medicine since 5 years. The family allergic history of this patient reflects nothing significant. The allergic history of this patient reflected that he is allergic to diclofenac sodium and albendazole since one year. His past allergic history revealed that diclofenac sodium had induced angioedema for which he had received for skeletomuscular pain. Patient chest x-ray revealed that he had bilateral lower consolidation to confirm that he was suffering from lower respiratory tract infection. Complete blood count revealed that RBC indices had reflected that he was suffering from normocytic normochromic anemia and leukocytosis. Based on comprehensive medical history of this patient, medical consultant made final diagnosis of this patient has acute bronchitis. His medical consultant ruled out pulmonary tuberculosis, pneumonia based on physical examination findings of this patient. His medical consultant finally prescribed medications Tablet acetaminophen 500mg BD as SoS, Syrup Ambroxyl two teaspoon SoS, and Tablet Azithromycin 500mg OD for five days. Patient fever and cough gradually subsided after receiving symptomatic management for 3 days and after receiving 4th dose of azithromycin on 4th day, patient had developed erythematous rashes on

upper and lower trunk within 2 hours of oral administration. Patient immediately noticed skin allergic reactions and approached to his medical consultant, based on physical examination of this patient it was given medical impression as erythema multiform. Patient was prescribed with antihistamines to treat this allergic reaction in according to the severity of symptoms. Patient erythematous rashes gradually subsided after receiving tablet levocetirizine 10mg OD SoS. There are lot of case reports established to ascertain that azithromycin can cause erythema multiform with time temporal relationship to precipitate this skin reaction within span of one to two weeks. The offending drug in this medical case had caused dermatological reaction within one week after oral administration, it had been suspected and suggested to withdraw this offending agent with immediate effect.

Several case reports have documented the association between azithromycin and Erythema Multiforme (EM), with symptoms resolving upon discontinuation of the medication Kaur, S., et al. (2018). A case-control study found that azithromycin was significantly associated with EM, with an odds ratio of 4.3 Mockenhaupt, M., et al. (2019). These findings suggest a causal relationship between azithromycin and EM.

Conclusion: Erythema multiform usually caused by viral infections such as herpes simplex virus, cytomegalovirus, influenza virus etc and mycoplasma pneumonia, certain medications such as broad spectrum antibiotics, antiepileptic medications etc. . Since this patient had been ruled out with viral infections and pneumonia, it had clearly reflected that azithromycin is offending agent in this case and this patient had been provided with red alert card so that any prescriber prospectively should never prescribe azithromycin and any medicinal product containing azithromycin ingredient.

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