J Med Sci 2022;42(5):242-244
DOI: 10.4103/jmedsci.jmedsci_82_21

CASE REPORT

Quetiapine-induced Drug Rash with Eosinophilia and Systemic Symptom Syndrome

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Drug rash with eosinophilia and systemic symptoms (DRESSs) syndrome is an adverse cutaneous reaction characterized by fever, skin eruption, hematological abnormalities, and internal organ involvement. Although many drugs are known to cause DRESS syndrome, quetiapine-induced DRESS syndrome case is rare. We report a case of a 78-year-old male who developed DRESS syndrome presented with rashes, eosinophilia after taking quetiapine for 2 weeks.

Key words: Drug-induced reaction, eosinophilia, quetiapine, maculopapular rashes

INTRODUCTION

Drug rash with eosinophilia and systemic symptoms (DRESSs) syndrome is a rare potentially life-threatening reaction characterized by fever, skin eruption, hematological abnormalities including eosinophilia, and internal organ involvement.[1] Liver is the most commonly affected internal organ, followed by the kidney and lungs. Incidence is estimated to be around 1/1000–10 000.[2] Drugs that induce DRESS syndrome include anticonvulsants, anti-inflammatory agents, antidepressants, sulfa drugs, angiotensin-converting enzyme inhibitors, antibiotics, and beta-blockers, although certain other drugs are also rarely implicated.[3] Diagnosis could be challenging due to wide differential skin reactions, polypharmacy involved, and lack of unified diagnostic criteria. This syndrome usually presents symptoms after 2–6 weeks of starting the offending medication. The mainstay of treatment usually involves supportive therapy and discontinuation of the responsible drug.[4,5] Here, we present a case of a 78-year-old male who developed DRESS syndrome after taking quetiapine for the past 2 weeks.

CASE REPORT

A 78-year-old male patient with a history of pain in the lower abdomen was presented with high-grade fever, associated with rigors, chills, and maculopapular rashes over the trunk and abdomen. The patient had COVID pneumonia prior to 1 month. He has had a known history of bipolar disorder for the past 3 years for which olanzapine was prescribed which was later switched to quetiapine 12.5 mg during his COVID care hospital stay in the past 2 weeks due to its less anticholinergic profile. The patient also had a history of obsessive–compulsive personality disorder, hypothyroidism, hypertension, hyperuricemia, and prostatomegaly for which thyronorm, atenolol, cilnidipine, and colchicine were prescribed. He was admitted under the urology department, cultures were obtained and intravenous meropenem and paracetamol were started.

On physical examination, he was noted to be febrile (102.4°F), with tachycardia (109/min), multiple reddish itchy lesions on the trunk and upper extremities, thighs, and face for 1 week. The laboratory findings were as follows: total leucocyte count 13.7 K/uL, Hb: 14.1 gm/dl, C-reactive protein: 108 mg/dl, platelet count: 278 K/uL, monocytes: 12.8%, eosinophils: 19.6%, neutrophils: 64.7%, absolute neutrophil count: 2.69 K/uL, and peripheral blood smear showed leukocytosis with neutrophilia and eosinophilia. The liver function showed direct bilirubin 0.4 mg/dl, serum glutamic oxaloacetic transaminase: 62.5 U/L, serum glutamic

Received: March 07, 2021; Revised: June 05, 2021; Accepted: July 12, 2021; Published: October 15, 2021
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How to cite this article: Biju RA, Davis S, Sanal G. Quetiapine-induced drug rash with eosinophilia and systemic symptom syndrome. J Med Sci 2022;42:242-4.

pyruvic transaminase: 119.8 U/L, alkaline phosphatase: 79.3 U/L, total protein: 6.3 g/dl, albumin: 2.7 g/dl, globulin: 3.6 g/dl, and albumin/globulin ratio: 0.7. Creatinine level was 1.6 mg/dl. Blood culture showed no organism. However, the patient developed oral ulcers in the following days.

On dermatology consultation, the patient was initially suspected to have post-COVID pityriasis rosea and oral candidiasis. In view of fever, rash, and elevated eosinophil count, the possibility of a drug rash was also considered. For rashes, desloratadine tablet 5 mg, halobetasol 30 g cream, and derma soft liquid local application were given. Fluconazole tablet 200 mg and candid mouth paint 25 ml local application were prescribed for oral candidiasis. The erythematous maculopapular rash gradually progressed to involve palms and soles and earlier lesions were coalescing. Later, the erythema was reduced after applying emollients and topical steroids, but considering the rise in eosinophilia count and liver enzymes, the possibility of DRESS was strongly considered. Polypharmacy makes it extremely difficult to find the offending drug; however, while going through the past medication records and drug history by his wife, quetiapine seems to be a possible offending drug.

DRESS syndrome due to quetiapine was diagnosed by the European Registry of Severe Cutaneous Adverse Reactions (RegiSCARs) scoring system. Quetiapine was stopped after psychiatric and dermatology consultations and olanzapine 2.5 mg was started orally. Skin biopsy was done under local anesthesia from erythematous plaque from the abdomen. Microscopy showed diagnostic features of spongiotic dermatitis, possible drug hypersensitivity syndrome. On discharge, the patient's condition was stable, fever subsided with normal laboratory values. He was prescribed prednisolone 30 mg/day for 7 days and on review outpatient department, rashes subsided and skin started improving.

DISCUSSION

DRESS syndrome is a hypersensitivity drug reaction that manifests with a latency period of about 2–8 weeks. It is characterized by rashes, hematologic abnormalities, lymphadenopathy, and organ involvement, including liver and kidney. Since many medical conditions mimic similar clinical manifestations, it poses a challenge for timely diagnosis. Currently, DRESS syndrome is diagnosed on the basis of clinical and laboratory abnormalities, and diagnostic criteria available. In this case, the patient met the RegiSCAR criteria with a score of 5 out of 7 suggestive of a diagnosis of DRESS syndrome.[6]

Among the common drugs that cause DRESS syndrome include anticonvulsants, antidepressants, sulphadrugs, nonsteroidal anti inflammatory drugs, antibiotics like minocycline, linezolid, doxycycline, piperacillin-tazobactam and antivirals like abacavir, telaprevir.[7] To our knowledge, this is the first report on a probable case of quetiapine-induced DRESS syndrome. Though the pathogenesis of DRESS is not clear, a proposed mechanism is eosinophil activation due to failure of detoxification of drugs leading to accumulation of toxic metabolites triggering immunological response through CD4+T and CD8+T cells.[8]

The treatment for DRESS syndrome involves the withdrawal of the offending drug and the use of glucocorticoids. The response may take 4–6 weeks and symptoms may last for several weeks to months. However, steroid administration can worsen the preexisting psychotic symptoms, therefore be cautious while prescribing steroids with patients with psychiatric disorders.[9]

CONCLUSION

Drug-induced skin reactions are common while treating different patients. Timely diagnosis and cessation of the offending drugs can be lifesaving.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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