

Case report: Lamotrigine-induced uncommon DRESS syndrome

Abstract

DRESS Syndrome (Drug Rash with Eosinophilia and Systemic Symptoms) is defined as a several symptoms and signs that appear as an a result of a delayed hypersensitivity reaction mediated by T lymphocytes to certain drugs included anticonvulsants, non-steroidal anti-inflammatory drugs (NSAIDs), antibiotics and antiretrovirals among others, with low prevalence but a significant mortality (10%). Clinical features include fever, skin rash and eosinophilia, sometimes accompanied by decrease in liver or kidney function. We are presenting a case report of DRESS syndrome in 47 year old female, who developed fever, rash and facial edema due to lamotrigine. Early diagnosis and treatment led to her rapid recovery. This case is presented to highlight the importance of early detection of uncommon severe syndrome.

Keywords: fever, rash, DRESS syndrome, drugs, lamotrigine

Volume 14 Issue 1 - 2024

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Received: March 09, 2024 | **Published:** March 18, 2024

Introduction

DRESS Syndrome (Drug Rash with Eosinophilia and Systemic Symptoms) is a uncommon but severe adverse drug-induced idiosyncratic reaction occurring 2-6 weeks after the beginning of some treatments and is characterized by fever and skin rash accompanied by hematological abnormalities (eosinophilia) and impaired function of several organs (liver and kidneys).¹ The first case was described in 1938 by Merritt and Putnam.¹ In 1996, the acronym DRESS introduced by Bocquet et al.,² was adopted. Drugs involved include anticonvulsivants (lamotrigine, phenytoin, phenobarbital and carbamazepine), NSAIDs (ibuprofen), several groups of antibiotics (sulphonamides, sulphasalazine, trimethoprim, isoniazid), antiretrovirals (abacavir, nevirapine,) and others (gold salts, diltiazem, atenolol, captopril, allopurinol, azathioprine and dapsone).^{3,4}

Clinical case

Female patient, 47 years old, with diagnosis of generalized anxiety disorder five years ago in treatment with lamotrigine (25 milligram per day since two years). After dose increase by physician (25 to 75 milligram per day) during three weeks, was admitted at Emergency Service of our hospital with symptoms consisting of fever (38,5°C), occurring with maculopapular cutaneous eruption in trunk, which progressed to arms and legs and facial oedema. Laboratory test demonstrated eosinophilia (9%) abnormal liver function with increase in liver enzymes (Aspartate Transaminase, AST = 265 U/L; Alanine Transaminase, ALT = 460 U/L), with cholestasis (Alkaline Phosphatase, ALP= 175 U/L; gamma glutamyl transpeptidase, GGT= 138 U/L) (see Table 1). Blood urea, creatinine and urine examination were normal and viral serologies (included HIV, hepatitis B and C virus, cytomegalovirus and Epstein Barr virus) were negative. Patient was diagnosed with DRESS syndrome based on the above findings and received parenteral antihistaminic and steroids during clinical income and drug lamotrigine was stopped. On discharge patient was given oral steroids (prednisone, 1 milligram/kg per day) with resolution of symptoms after 5 days.

Discussion

DRESS Syndrome should be suspected in presence of fever, rash and eosinophilia that appear 3 to 12 weeks after starting a drug or dose

increase, or within the first hours if there is previous sensitization.⁵ Some cases have been described with the presence of myocarditis, pancreatitis and acute renal failure, in association with several drugs treatment, mostly anticonvulsants, as in the case of our patient.⁶ In order to make the diagnosis, some criteria must be met, which were present in the case described: fever, skin rash and liver affectionation with elevated transaminases that appear after intake lamotrigine (one of the drugs described as a trigger), despite do not present with severe eosinophilia. The clinical features and the biochemical biomarkers of liver involvement have allowed its adequate management with right medication (antihistaminics and corticosteroids), achieving complete remission of symptoms and normalization of liver function.^{7,8}

Table 1 Laboratory values at clinical onset

| Laboratory test | Results |
|--------------------|-----------|
| Blood eosinophilia | 9% |
| AST | 265 UI/ml |
| ALT | 460 UI/L |
| ALP | 175 UI/L |
| GGT | 138 UI/L |

AST, aspartate transaminase; ALT, alanine transaminase; ALP, alkaline phosphatase; GGT, gamma glutamyl transpeptidase

Conclusion

DRESS syndrome is defined as drug-induced hypersensitivity syndrome with rash, eosinophilia and impaired liver and kidney function, more associated with anticonvulsants, antibacterial and non-steroidal anti-inflammatory drugs (NSAIDs). In this patient, diagnosis of drug associated rash with fever and liver dysfunction (DRESS) syndrome due to lamotrigine intake was made. Treatment with antihistaminic and oral corticosteroid was well with rapid clinical resolution. Drugs that commonly cause DRESS syndrome include phenytoin, phenobarbital, carbamazepine and lamotrigine. DRESS syndrome usually begins several weeks after exposure to the involved drug. Diagnosis of this disease is of particular importance, as the mortality rate is around 10%. The most common differential diagnoses for DRESS syndrome are viral eruption, vasculitis, allergic diseases, angiolymphoid hyperplasia with eosinophilia, collagen vascular diseases, atopic dermatitis and malignancy with secondary eosinophilia.

Acknowledgments

- a) (DRESS) syndrome is an uncommon but severe disease due to sensibility reaction to some drug as anticonvulsants (lamotrigine among others).
- b) Main symptoms are fever, rash, eosinophilia and multi-organic failure (liver or renal failure).
- c) Management of DRESS syndrome consist in recognize the presence of clinical features, stop related-drug and use of steroids for fast symptoms' remission.

Conflicts of interest

Authors declare that there is no conflict of interest.

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