

## **Female Patient with Ceftriaxone-Induced Drug Eruption with Eosinophilia and Systemic Symptoms in Second Level Care. Case Report**

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### **ABSTRACT**

Drug reaction with eosinophilia and systemic symptoms (DRESS) is a hypersensitivity reaction. Therefore, the case of a 51-year-old woman with no history of drug allergies is presented. In empirical treatment with Ceftriaxone, presenting 15 days later pruritic maculopapular rash on the chest, abdomen and extremities accompanied by temperature rises of up to 39°C. Laboratories with leukocytes of 47.38/uL, with eosinophils of 27.07/uL, and skin biopsy report with inflammatory infiltrate in the dermis at the expense of eosinophils. regiSCAR and J-SCAR with results of 8 and 6 points respectively. Administering methylprednisolone 250 mg every 24 hours for 3 days, continuing with prednisone 50 mg per day. Improvement of skin lesions and laboratory abnormalities at 72 hours. DRESS induced by this antibiotic is rare. Appropriate assessment of the indications and diagnostic assumption of side effects is important because the manifestations are potentially reversible. of rash, fever, facial edema, lymphadenopathy, hematologic abnormalities, and visceral involvement.

**KEYWORDS:** Drug hypersensitivity, Ceftriaxone, Eosinophilia.

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### **INTRODUCTION**

Drug reaction with eosinophilia and systemic symptoms (DRESS) is a severe, idiosyncratic, T-cell-mediated hypersensitivity reaction characterized by varying combinations of rash, fever, facial edema, lymphadenopathy, hematologic abnormalities, and visceral involvement<sup>1</sup>.

### **BACKGROUND**

The estimated incidence of DRESS is 1 in 1,000 - 10,000 drug exposures<sup>2,3</sup>. Symptoms usually develop after 2 to 8 weeks and may persist with a series of remissions and relapses. It has been associated with aromatic antiepileptic drugs, antimicrobials such as sulfonamides, allopurinol, minocycline, sulfasalazine, mexiletine, among others<sup>4</sup>. After drug discontinuation, the average recovery time is 6 to 9 weeks. Also, its appearance could be associated with the human herpes virus 6 and 7 and the Epstein-Barr virus and the participation of several specific HLA alleles has been identified<sup>5</sup>.

The diagnosis is guided mainly by dermatological manifestations (morbilliform or maculopapular lesions) together with eosinophilia, with liver involvement observed

in 75 to 94% of cases<sup>6</sup>. The immediate withdrawal of the triggering drugs is the most important action to be carried out in the treatment. Systemic corticosteroids are the main treatment for patients with DRESS since the main causes of death are acute liver failure, multiple organ failure or fulminant myocarditis<sup>7</sup>. It is a complex disease that is made up of complicated interactions between drugs, viruses and immune responses<sup>8</sup>. More specific prognostic indicators include bacteremia and fungemia. Its clinical presentation is heterogeneous, which makes its diagnosis difficult, because a clinical case report associated with the use of ceftriaxone is presented<sup>9,10</sup>.

### **CASE DESCRIPTION**

A 51-year-old female with a history of type II diabetes mellitus without management and systemic arterial hypertension managed with losartan 50 mg daily with poor adherence, denies drug allergies. Her condition began with dysuria, bladder tenesmus, low-grade fever, for which empirical management was initiated with ceftriaxone 1 gr intramuscularly every 24 hours for 5 days. Fifteen days later, she presented a pruritic maculopapular rash on the chest,

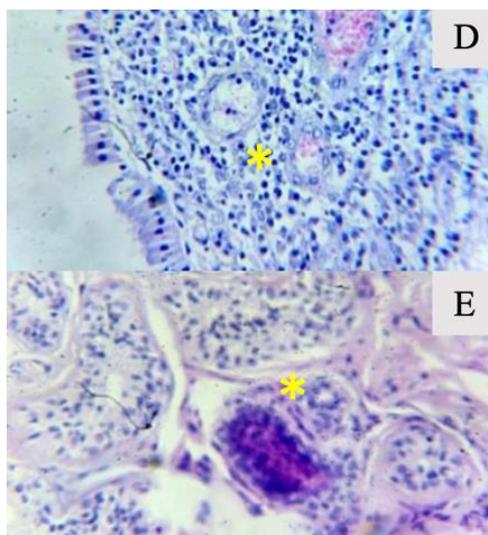
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abdomen, and extremities (Fig 1. A, B, C), accompanied by temperature rises of up to 39°C, and went to the emergency department. Reporting laboratories with leukocytes of 47.38/uL, with eosinophils of 27.07/uL, neutrophils 9.83/uL, lymphocytes 6.40/uL; urea 170 mg/dL, creatinine 2.25mg/dL, AST 111 IU/L, ALT 225.8 IU/L. And skin biopsy report (Fig 2. D, E). The regiSCAR and J-SCAR are

calculated with results of 8 and 6 points, respectively. Administering methylprednisolone 250 mg every 24 hours for 3 days followed by prednisone 50 mg per day and intravenous hydration therapy. Skin lesions and laboratory abnormalities improved at 72 hours, so steroid dose reduction was continued for the next 4 weeks with remission of DRESS.



**Figure 1. (A, B, C) Morbilliform erythema with follicular accentuation in more than 50% of the total body surface, facial edema, and painful bilateral cervical lymphadenopathies.**



**Figure 2. D) Chest skin: epidermis with discrete spongiosis, mixed inflammatory infiltrate in the perivascular and peradnexal papillary dermis with up to 45 eosinophils per field, lymphocytes and polymorphonuclear cells.**

**E) Leg skin: focal hyperkeratosis, moderate acanthosis, inflammatory infiltrate with lymphocytes and polymorphonuclear cells, with predominantly perivascular and adnexal interface dermatitis with 35 eosinophils per field.**

### DISCUSSION

DRESS syndrome is a severe drug hypersensitivity reaction with prominent cutaneous and systemic manifestations. Its pathophysiology is not completely understood at this time, but is likely related to drug metabolic enzyme deficiencies, lymphocyte activation, reactivation of herpesviruses, and genetic predisposition associated with specific HLA alleles<sup>11</sup>. Clinicians must be aware of this potentially fatal reaction and its common culprit medications. No se debe administrar tratamiento empírico con antibióticos o antiinflamatorios durante la enfermedad aguda, ya que pueden confundir o empeorar el cuadro clínico de los pacientes debido a una reactividad cruzada inexplicable entre fármacos. Shiohara et

al<sup>12</sup> recommend that all patients should be hospitalized even when the initial presentation is mild.

### CONCLUSIONS

Ceftriaxone is commonly prescribed in clinical practice and DRESS syndrome induced by this antibiotic is rare. Adequate assessment of indications and diagnostic presumption of side effects is important because the manifestations are potentially reversible.

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No financial support was received for this study.

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### CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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