Lamotrigine-induced Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS)

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Accepted 21 May 2015

DESCRIPTION

A 59-year-old woman was transferred from another hospital for evaluation of fever and systemic rash. The patient stated that she noticed the morbilliform rash, 3 weeks earlier, diffusely throughout her body, sparing her palms and soles. Her primary care provider started her on levofloxacin 500 mg daily. She took no other medications. The rash progressed in the next 2 weeks with subsequent desquamation and painful, erythaematous blister formation. She also reported of systemic symptoms including malaise, fatigue and dyspnoea. She revealed that 3 weeks prior to onset of the rash, she was started on lamotrigine and was taking 50 mg daily at the time of her presentation. On physical examination, a desquamating erythaematous rash was seen over her face, lips, torso and extremities (figure 1). She was febrile to 38.2°. There was no lymphadenopathy, facial oedema or respiratory distress. Laboratory results revealed peripheral eosinophilia (14.8%), alanine and aspartate transaminase elevations of 128 and 69, respectively, and creatinine of 1.9. Allergy testing was not performed. A skin biopsy was obtained from her right leg, which revealed subepidermal bullous formation with increased eosinophils and neutrophils (figure 2). She was diagnosed with Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) based on RegiSCAR inclusion criteria. These criteria include fever >38°C, enlarged lymph nodes at a minimum of two sites, involvement of at least one internal organ, blood count abnormalities, hospitalisation, a reaction suspected to be drug-related, acute rash, lymphocytes or eosinophils above the laboratory limits and platelets below the laboratory limits; at least three of the first four of these criteria are required to make the diagnosis.[1] Her lamotrigine was discontinued and she was started on systemic steroids, initially intravenous methylprednisolone 60 mg twice daily and later oral prednisone 1 mg/kg/day. The case was reported to the Food and Drug Administration. Her symptoms improved dramatically 2 days after presentation. Her Cr trended down to 1.3, and her diffuse rash began to resolve, with decreasing fatigue and malaise. By 6 weeks, her rash had resolved completely and she was back to her usual state of health.

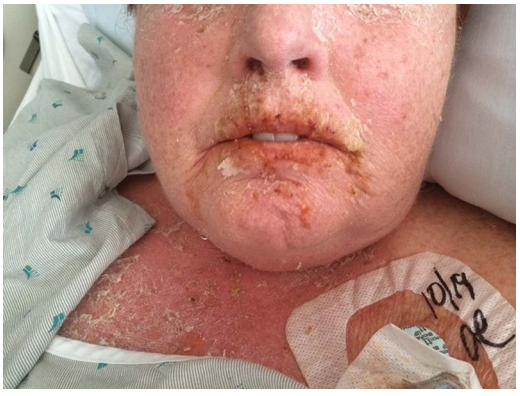

Figure 1 Desquamating rash (erythroderma) involving the face and chest.

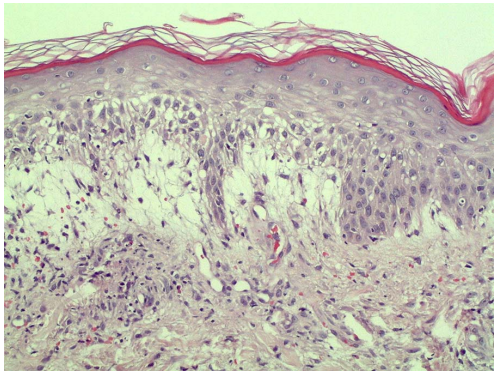

Figure 2 Spongiosis in basal epidermis with vacuolisation of cells near base of epidermis (compare to squamous epithelium on right side of picture), as well as superficial dermal oedema (×200, H&E).

Learning points

- Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) syndrome is an often difficult to diagnose condition; it has myriad manifestations and can involve virtually any organ. It is associated with numerous drugs, including lamotrigine, which is one of the first line treatments for epilepsy.[2]
- Histologic findings in DRESS are non-specific and may include lymphocytic infiltrate with or without eosinophils.[3]
- DRESS syndrome may have a mortality of up to 10% if untreated. Management consists of identifying and halting the offending agent, as well as prompt initiation of systemic corticosteroids. Patients should be followed-up for resolution of organ involvement.[4]

Acknowledgements The authors thank Adil Mansoor, Medical Student, Rowan School of Osteopathic Medicine.

Contributors MM prepared the histological images and wrote the accompanying captions.

To cite: Nathan K, Agarwal A, Gable B, *et al*. *BMJ Case Rep* Published online: [*please include* Day Month Year] doi:10.1136/bcr-2014-209170

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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