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Drug Reaction with Eosinophilia and Systemic Symptoms (Dress) Syndrome Presenting as Multi-Organ Failure

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Abstract : Introduction: Drug reaction with eosinophilia and systemic symptoms (DRESS) syndrome is a rare and potentially fatal drug-related syndrome. DRESS classically presents with a diffuse maculopapular rash, fevers, and eosinophilia more than three weeks after drug exposure. DRESS can present with multi-organ involvement, with liver damage being the most common and severe. Pulmonary involvement is a less common manifestation and is associated with poor clinical outcomes. Chest imaging is often nonspecific, and symptoms can range from mild cough to acute respiratory distress syndrome (ARDS) . This is a case of a 49-year-old female with a history of recent clostridium difficile colitis status post treatment with oral vancomycin who presented with rash, acute liver and kidney failure, as well as diffuse nodular alveolar lung opacities concerning for DRESS syndrome with multi-organ involvement. Clinical Course: This patient initially presented to an outside hospital with clostridium difficile colitis, acute liver injury, and acute kidney injury. She developed a desquamating maculopapular rash in the setting of recent oral vancomycin, meloxicam, and furosemide initiation. She was hospitalized on two additional occasions with worsening altered mental status, liver injury, and acute kidney injury and was initiated on intermittent hemodialysis. Notably, she was found to have systemic eosinophilia (4100 cells/microliter) several weeks prior. She was transferred to this institution for further management where she was found to have encephalopathy, jaundice, lower extremity edema, and diffuse bilateral rhonchorous breath sounds on pulmonary examination. The patient was started on methylprednisolone for suspected DRESS syndrome. She underwent an evaluation for alternative causes of her organ failure. Her workup included a negative infectious, autoimmune, metabolic, toxic, and malignant work-up. Abdominal computed tomography (CT) and ultrasound were remarkable for evidence of hepatic steatosis and possible cirrhotic morphology. Additionally, a chest CT demonstrated diffuse and symmetric nodular alveolar lung opacities with peripheral sparing not consistent with acute respiratory distress syndrome or edema. Ultimately, her condition continued to decline, and she required intubation on several occasions. On hospital day 25 she succumbed to distributive shock in the setting of probable sepsis and multi-organ failure. Discussion: DRESS syndrome occurs in 1 in 1,000 to 10,000 patients with a mortality rate of around 10%. Anti-convulsant, anti-bacterial, anti-viral, and sulfonamide drugs are the most common drugs implicated in the development of DRESS syndrome; however, the list of offending agents is extensive . The diagnosis of DRESS syndrome is made after excluding other causes of disease such as infectious and autoimmune etiologies. The RegiSCAR scoring system is used to diagnose DRESS syndrome with 2-3 points indicating possible disease, 4-5 probable disease, and >5 definite disease. This patient scored a 7 on the RegiSCAR scale for eosinophilia, rash, organ involvement, and exclusion of other causes (infectious and autoimmune). While the pharmacologic trigger in this case is unknown, it is speculated to be caused by vancomycin, meloxicam, or furosemide due to the favorable timeline of initiation. Despite aggressive treatment, DRESS syndrome can often be fatal. Because of this, early diagnosis and treatment of patients with suspected DRESS syndrome is imperative.

Keywords : drug reaction with eosinophilia and systemic symptoms, multi-organ failure, pulmonary involvement, renal failure
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