Cefuroxime axetil induced DRESS in a pregnant patient

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ABSTRACT

Drug reaction with eosinophilia and systemic symptoms (DRESS) was coined by Bocquet in who described a condition induced by drug reaction which was characterized by fever, rash, lymph node enlargement, hematological, hepatic and other systemic involvement. A 38 year old pregnant patient presented with fever, rash and other systemic manifestations. Clinical work up was done to evaluate amongst various differential diagnosis. Patient was finally diagnosed as DRESS and successfully managed with good maternal and fetal outcome.

Keywords: DRESS, cefuroxime, pregnancy, rash, steroids.

The purpose of the present report is to demonstrate the importance of early clinical diagnosis and management of drug reaction with eosinophilia and systemic symptoms (DRESS). DRESS was coined by Bocquet in who described a condition induced by drug reaction which was characterized by fever, rash, lymph node enlargement, hematological, hepatic and other systemic involvement.1,2

DRESS incidence varies from 1/1000 to 1/10,000 cases. It has a typical incubation period of about 2–8 weeks from the drug exposure and can last for months even when the offending drug has been discontinued.3 It carries significant morbidity with a mortality rate of approximately about 10% due to organ failure and sepsis.3 Commonest drugs to induce DRESS are anticonvulsants, antimicrobial agents, and anti-inflammatory medications.4,5

We report a case of DRESS induced by cefuroxime axetil in a pregnant patient which was successfully managed.

Case

A 38 year old primigravida woman came to emergency with history of fever and generalized rash and pruritis since last 4 days. She gave history of urinary tract infection 1 week back for which she was started on cefuroxime axetil 500mg BD. On examination there was presence of maculopapular rash seen involving the face, trunk and bilateral upper and lower limbs (figure 1). Patient was febrile (temperature 39.6 °C) with tachycardia (108/min) with normal blood pressure. Rest of her general physical examination was unremarkable. No significant lymphadenopathy was seen. Cardiovascular examination was unremarkable. Abdominal examination revealed height of uterus corresponding to period of gestation with positive fetal heart sound. Mild hepatosplenomegaly was seen. Based on clinical findings a differential diagnosis of viral exanthema, dermatosis and DRESS were kept.

Laboratory examination showed urea 64 mg/ dl and creatinine 1.8 mg/dl. Her liver assays were deranged suggestive of hepatic dysfunction with alkaline phosphatase 258 U/L, aspartate aminotransferase, 109 U/L, alanine aminotransferase 202. Her total bilirubin was raised 2.7 mg/dL (0.2-1.0 mg/dL) with reduced albumin 2.47(3.5-5.0 mg/ dL). Erythrocyte sedimentation rate and C-reactive protein were raised with a value of 80 and 120 mg/dL respectively. Complete hemogram revealed hemoglobin 11.7 gm/dl with leukocyte count of 60000/ul and markedly raised eosinophil count of 500/ µL. Viral markers work up for HSV, HHV6, EBV, CMV, HBV, HIV, VZV were negative. Ultrasound abdomen revealed mildly hepatosplenomegaly with single live intrauterine fetus at period of gestation (POG) of 33 wk 4 days.

Based on the clinical presentation of rash, hepatic and...
renal involvement and peripheral eosinophilia the diagnosis of DRESS was considered. Cefuroxime axetil was stopped. Patient was started on prednisolone 1mg/kg/day due to the severity of presentation. Patient showed adequate response with resolution of rash over next 10-12 days (figure 2). Her peripheral eosinophil counts dropped to normal levels at 2 weeks. Subsequently she had a caesarean section at POG of 34 wk 6 days due to preterm rupture of membranes and meconium staining and delivered a baby girl with weight 2136 grams with good Apgar score (8 and 9). She was finally discharged on tapered doses of prednisone and kept on follow up.

Figure 1: Extensive erythematous maculopapular rash is seen involving the face, limb and trunk.

Figure 2: Marked resolution of the rash and erythema seen after 10-12 days on the face, limb and trunk.

Discussion

DRESS is a rare drug reaction seen as a side effect of certain drugs commonly the anticonvulsants, antibiotics and anti-inflammatory drugs. It is often associated with fever, lymph nodal enlargement and hematological/multisystem involvement. The exact pathogenesis of DRESS is unknown however role of HHV-6 and defective drug metabolism triggering an immune reaction have been implicated.

List of implicated drugs for DRESS include anticonvulsants (such as phenytoin, and carbamazepine), antidepressants (such as amitriptyline), antibiotics such as (cephalosporins, sulpha drugs), anti-inflammatory drugs and antivirals and antihypertensives. Many other drugs have been implicated in multiple case reports. Cefalosporins have also been implicated as causative drugs for DRESS in multiple case reports.

Cefuroxime axetil induced DRESS is rare and has been described before with successful management. To our knowledge, we present the first case of cefuroxime induced DRESS in a pregnant patient which was managed successfully with steroids.

High grade fever followed by rash is seen in majority of patients. The typical rash is morbilliform and may be preceded by pruritus. Frequently involved areas of rash involvement are face, trunk, and limbs. The rash can persist for months even after the offending drug is discontinued. Generalized lymphadenopathy can be seen in upto 2/3rd of patients. Multisystemic organ involvement with features of hepatitis, myocarditis, pneumonitis, nephritis, and other systemic injury may be seen in milder or severe forms.

DRESS is frequently misdiagnosed owing to a variety of causes. Some of them are unfamiliarity with drug reaction with patients appearing sick and febrile, history of offending drug intake may be remote from weeks to months and worsening of symptoms after withdrawal of the offending agent. These features may mislead to other diagnosis such as sepsis, viral infection, or dermatological condition. At least 3 different criteria’s have been made for diagnosis of DRESS. Simplest criteria is the Bocquet criteria which includes presence of 1 skin eruption, 2 eosinophilia more than 1500/μL, and 3 multiple organ involvement depicted by transaminase elevation twice the normal, lymph nodes more than 2 cm in diameter, nephritis, pneumonia, or myocarditis. Steven Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) may mimic DRESS however presence of lymph nodes, edema, eosinophilia, and internal organ involvement in DRESS may be useful pointers in distinguishing from these entities.

Laboratory investigations in DRESS must include complete hemogram including differential counts for eosinophils, liver and renal functions, and urine examination. Eosinophilia can be seen in upto 95% of cases and may be as high as 2000 cells/μL. Liver enzymes may be elevated in 70% to 90% of cases with nephrological and pulmonary involvement in about 30%.

Management strategies for DRESS syndrome include early diagnosis and stopping the precipitating drug.
Corticosteroid administration is required for immune reaction control for almost all patients with serious or systemic involvement. Early initiation of prednisone in a dose of 1 mg/kg/day or the equivalent is required. In refractory cases or severe reaction, additional of intravenous immunoglobulin and antivirals have been recommended. A long term follow up should be done as relapses are frequent.15

**Conclusion**

Early clinical suspicion and diagnosis in DRESS cases is the key for successful clinical outcome in pregnant patients.

**Conflict of interest:** None. **Disclaimer:** Nil.

**References**


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