

Case Report

Drug rash with eosinophilia and systemic symptoms syndrome, a uncommon but fatal illness, paediatricians should be aware of: a case of 13 year old female child

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ABSTRACT

Drug rash with eosinophilia and systemic symptoms (DRESS) syndrome is a fatal illness manifested by fever, morbilliform rash, multi systemic involvement and eosinophilic leucocytosis with about 10% mortality. Authors report DRESS syndrome in an adolescent girl due to anti-depressant and anti-psychotic which improved dramatically after withdrawal of offending drugs and starting of steroids

Keywords: Antipsychotic, Adolescent girl, Drug rash with eosinophilia and systemic symptoms syndrome, Steroids

INTRODUCTION

DRESS syndrome manifested by fever, rash, lymphadenopathy, transaminitis and eosinophilic leucocytosis with mortality rate of 10%.¹ DRESS syndrome though uncommon but not rare and often misdiagnosed. Incidence of DRESS is between 1:1000 to 1:10,000 drug exposure.²

Moreover, low prevalence in pediatric age group is another reason for insufficient awareness among pediatricians. Medications associated with DRESS are anticonvulsants in about 35%, allopurinol in 18%, sulphonamide and dapsone in 12% and other drugs including antibiotics and antidepressants in 11% of cases.^{3,4}

A case of DRESS syndrome secondary to anti-depressant and antipsychotics in an adolescent girl with objective of highlighting the sign and symptoms, diagnostic tool to identify it and treatment modalities has been reported.

CASE REPORT

A 13 year old female child presented with high grade fever with multiple spikes for 10 days, generalized maculopapular rash (Figure 1), yellowish discoloration of eyes and body and generalised swelling for 4 days. On day 6 of fever, itchy maculopapular rash appeared on face and gradually involved whole body. Generalised anasarca with prominent facial puffiness and lymphadenopathy were present. Mucosal surface were not involved. There was history of treatment with fluoxetine, olanzapine, haloperidol for psychiatric and behavioural problem one month back.

Investigations revealed eosinophilic leukocytosis (21% eosinophil). LFT showed conjugated hyperbilirubinemia with transaminitis. Serum Procalcitonin was negative. Blood culture was sterile. USG abdomen revealed normal hepatic echotexture. Viral assay (PCR for EB virus, CMV, HHV6) and autoimmune screening was negative. Skin biopsy revealed eosinophilic infiltration. Score of 7 in RegiSCAR scoring (Table 1) was consistent with

DRESS syndrome likely due to antidepressants and anti-psychotics received by the patient.⁵ All those drugs were withdrawn immediately, and child was started on pulse methyl prednisolone (30mg/kg/day for 3 days). Following which there was rapid defervescence and dramatic resolution of rash (Figure 1) and generalised

edema in next 48 hours. After IV steroid, child was continued on oral steroids. Child was discharged after 7 days on tapering dose of steroid for next 6 weeks when all symptoms and laboratory parameters normalized. On follow up after 1 month, child was absolutely fine.

Table 1: RegiSCAR diagnosis score for DRESS syndrome.

Features	No	Yes	Unknown	
Fever (>38.5 degree C)	-1	0	-1	
Enlarged Lymph nodes (>2 sites, >1 cm)	0	1	0	
Atypical lymphocytes	0	1	0	
Eosinophilia	700-1499 or 10-19.9%	0	1	0
	>1500 or >20%	0	2	0
Skin rash	Extent>50%	0	1	0
	At least2: -edema, infiltration, purpura, scaling	-1	1	0
	Biopsy suggesting DRESS	-1	0	0
Internal organ involvement	One	0	1	0
	Two or more	0	2	0
Resolution in more than 15 days	-1	0	-1	
At least 3 biological investigations done and negative to exclude other diagnosis (ANA, blood culture, serology for HAV/HBV/HCV, Chlamydia/ Mycoplasma	0	1	0	

Final score interpretation:- <2-No, 2-3- Possible, 4-5- Probable, >5-Definite diagnosis of DRESS



Figure 1: Maculopapular rashes, generalized edema before treatment and resolution after treatment.

DISCUSSION

DRESS syndrome typically presents after latency of 2 weeks to 3 months of exposure to drug and sometimes have a lengthy recovery even after drug discontinuation.⁶ The etiopathology of DRESS is not clear, but it is postulated that the condition is multifactorial, may involve an immune mediated hypersensitivity which is result of interaction between drug metabolite and genetic susceptibility.⁷ Viral infections like HHV-6, 7, EBV, CMV are also believed to play a part in pathogenesis.⁴ Relationship has also been demonstrated between certain HLA haplotypes and predisposition to develop DRESS syndrome with some drugs.⁶

DRESS usually presents with prodrome of fatigue and fever associated maculopapular rash which usually starts on face and trunk before becoming generalized. DRESS to be considered if rash involve more than 50% body surface area and has two or more features out of 3 (Facial edema, desquamation and purple coloured).³ Multi organ dysfunction may occur. Liver is the most common organ involved and liver failure is the primary cause of death in DRESS syndrome.⁶ Renal, GI, pulmonary, cardiac, CNS can also be involved.

Laboratory investigations usually reveal eosinophilic leucocytosis with eosinophil constituting up to 20% in peripheral smear. Atypical lymphocytes may be seen. Conjugate hyperbilirubinemia and transaminitis may reflect the hepatic involvement as in our case. Differential diagnosis includes acute viral exanthem, viral hepatitis, sepsis, autoimmune diseases and hematological disorders because of its highly variable presentation.⁷ Other severe cutaneous adverse reactions like SJS, TEN, Generalized exanthemic pustulosis should also be ruled out.

Two most used diagnostic criteria are The European register of severe cutaneous adverse reaction (RegiSCAR) scoring and Japanese research committee criteria.⁸ RegiSCAR scoring is based upon clinical finding, extent of lesion, internal organ involvement and clinical course. Adding on each parameter score, it is classified as definitive, probable or possible (Table 1).⁵ Case had a score of 7 which denotes definite DRESS.

Japanese committee criteria include HHV-6 reactivation highlighting its importance in pathogenesis.

Most important step in treatment of DRESS is withdrawal of possible offending drugs which lead to resolution of symptoms in many.⁹ IV corticosteroids administered alone or followed by oral steroid t have been very effective in DRESS.¹⁰ In this therapy IV methyl prednisolone pulse therapy was used and then change to oral steroid on tapering dose over 6 weeks. Intravenous Immunoglobulin can also be used in severe cases.

CONCLUSION

DRESS syndrome is very rare in pediatrics and potentially fatal if not recognized early and should be considered in children with exanthemous fever, lymphadenopathy and systemic manifestations. Diagnosis is clinical and supported by laboratory investigations. Stopping the offending drugs often resolves the symptoms. Some cases may require systemic corticosteroids. Early diagnosis usually leads to excellent recovery.

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