Case Report

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DRESS Syndrome: An Unusual Side Effect

Paediatrics Section

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ABSTRACT

Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) syndrome is often an overlooked entity manifesting as fatal hypersensitivity response associated with use of aromatic anti-epileptic drugs. This case report shows a case of a nine-year-old male child presenting with DRESS syndrome associated with the use of oral carbamazepine. The patient presented with high grade fever, rashes in exposed areas of face and all extremities not involving palms, soles, or oral mucosa, periorbital oedema, and cervical lymphadenopathy. Patient was managed with oral prednisolone 1 mg/kg/day. Later the drug was changed to oral levetiracetam. Clinicians should always consider the possibility of DRESS syndrome with the use of anti-epileptic drugs.

Keywords: Anti seizure drugs, Drug reaction, Eosinophilia, Drug hypersensitivity

CASE REPORT

A nine-year-old male child was admitted in paediatric ward of a tertiary hospital with history of continuous, high grade fever for seven days, itching maculopapular rash with swelling of periorbital region for five days. Patient had history of seizures that started six weeks before admission to hospital which was managed with oral carbamazepine 100 mg twice daily as prescribed by private practitioner.

On physical examination at admission, the child was toxic looking, had temperature of 104.4°F. There were rashes in exposed areas of face and all extremities not involving palms, soles, or oral mucosa. The rashes were macular and morbiliform in nature. There was difficulty while opening the eyes due to oedema in periorbital region. There were tender bilateral cervical lymph nodes of size more than 3.5 cm.

On systemic examination, per abdomen, liver was enlarged 6 cm below the subcostal margin and was tender on palpation with liver span of 13 cm. Rest of the systemic examination was unremarkable.

Differential diagnoses of drug-induced hypersensitivity, infectious mononucleosis and erythema multiforme, were made. On lab examination, complete haemogram showed Hb-9.5 gm%, TLC-18000/cu.mm, DLC-N-39%, L-55%, B-1%, E-5%. Absolute eosinophil count was 940 eosinophils per cu.mm. Peripheral smear also showed thrombocytopenia i.e., platelet count of 80000/cu.mm, and activated lymphocytes. Liver function tests were deranged with AST 169 U/L; ALT 340 U/L, ALP 338 U/L. CRP was 17.2 mg/L, ESR was 22 mm at 1st hour. Renal functions were within normal limits, blood culture was sterile.

On USG abdomen liver was 15.8 cm with normal echotexture and thick-walled gall bladder. Viral Markers were negative. Considering this work up, possibility of drug reaction was kept and all medications were stopped. Patient was started on oral prednisolone 1 mg/kg/day in two divided doses and on day three of steroids, patient started showing dramatic response in the form of decreased temperature and improvement in general appearance. On day five, Patient's liver function tests improved and patient was discharged on oral prednisolone for further two weeks and tapered over another week. Patient was kept on regular follow-up and antiepileptic drug was changed to Tab levetiracetam. Three months after discharge, patient reported no new episode of any seizure, rash, or any other symptoms. Serum transaminases levels were normal.

DISCUSSION

Drug-induced hypersensitivity syndrome was first described in 1936 during treatment with anticonvulsant drugs [1]; Bocquet H et al., named it 'DRESS syndrome' later and association with other drugs was established [2]. The syndrome is characterised by rash, fever, lymphadenopathy and internal organ involvement (single or multiple). The aromatic anticonvulsant (phenytoin, phenobarbital, carbamazepine, etc.,) and sulphonamides are the most common associated drugs [3-5]. The onset of the disease usually ranges from two to six weeks after the initiation of the therapy. The first symptoms are usually fever and rash; the skin involvement is characterised by a morbilliform macular rash that appears first in the face, abdomen and upper limbs, becoming purpuric later on, especially in lower limbs.

The index patient was on carbamazepine and presented after six weeks on this drug. He came to us with extensive maculopapular rash and high grade fever. The systemic involvement, that is thought to be the result of the eosinophilia, is not associated with the severity of skin lesions. Lymphadenopathy is present in 75% of the cases [6], which was present in index case. These findings were consistent with those observed by Gancheva T et al., [7].

The liver is the most common affected organ in DRESS syndrome. The findings may range from a transitory increase in liver enzymes to liver necrosis with fulminant hepatic failure, which is thought to be mediated by infiltration of eosinophils, resulting in death or liver transplantation [8]. Index patient had cholestasis pattern of liver involvement. As per RegiSCAR scoring guidelines developed by Kardaun SH et al., this patient is a definitive case of DRESS syndrome with a total score of six [9]. One the most frequently involved drug is carbamazepine that our patient was taking for focal cognitive seizure. Cessation of the implicated drug and use of steroids has both diagnostic and therapeutic value in these patients [10,11].

CONCLUSION

As reported previously in literature, DRESS syndrome is associated with significant mortality if not diagnosed early, so clinicians should consider the possibility of hypersensitivity reaction in response to any anti-seizure medication.

REFERENCES

[1] Saltzstein SL, Ackerman LV. Lymphadenopathy induced by anticonvulsant drugs and mimicking clinically pathologically malignant lymphomas. Cancer. 1959;12:164-82.
[2] Bocquet H, Roujeau JC. Les reactions cutanéessévèresinduites par les médicaments. Ver Fr Allergol. 1997;37:651-59.
[3] Tas S, Simonart T. Drug rash with eosinophilia and systemic symptoms (DRESS syndrome). Acta Clin Belg. 1999;54:197-200.
[4] Roujeau JC. Treatment of severe drug eruptions. J Dermatol. 1999;26:718-22.
[5] Callot V, Roujeau JC, Bagot M, Wechsler J, Chosidow O, Souteyrand P, et al. Drug-induced pseudolymphoma and hypersensitivity syndrome. Two different clinical entities. Arch Dermatol. 1996;132:1315-21.
[6] Gentile I, Talamo M, Borgia G. Is the drug-induced hypersensitivity syndrome (DIHS) due to herpesvirus 6 infection or to allergy-mediated viral reactivation? Report of a case and literature review. BMC Infect Dis. 2010;10:49. Available on http://www.biomedcentral.com/1471-2334/10/49.
[7] Gancheva T, Gancheva D, Troeva Z, Velev V, Hristakieva E, et al. Carbamazepine-Induced DRESS Syndrome: A case report. J Pharmacol Clin Toxicol. 2017;5(1):1066.
[8] Hall DJ, Fromm JS. Drug reaction with eosinophilia and systemic symptoms syndrome in a patient taking phenytoin and levetiracetam: a case report. Journal of Medical Case Reports. 2013:7:2.
[9] Kardaun SH, Sidoroff A, Valeyrie-Allanore L, Halevy S, Davidovici BB, Mockenhaupt M, et al. Variability in the clinical pattern of cutaneous side-effects of drugs with systemic symptoms: does a DRESS syndrome really exist? Br J Dermatol. 2007;156(3):609-11.
[10] Velema MS, Voerman HJ. DRESS syndrome caused by nitrofurantoin. Neth J Med. 2009;67:147-49.
[11] Tennis P, Stem RS. Risk of serious cutaneous disorders after initiation of use of phenytoin, carbamazepine, or sodium valproate: a record linkage study. Neurology. 1997;49:542-46.

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