Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/17393
DOI URL: http://dx.doi.org/10.21474/IJAR01/17393

RESEARCH ARTICLE

CARBAMAZEPINE-INDUCED DRESS SYNDROME

E.M. Dirat[1], M.A. Bouidida[1], G. Zouiri[1], H.R Houda[1], Y.K Riouile[1] and Y.B Errada[2]

1. Neuropediatric Unit, Service P2, Children's Hospital, CHU Ibn Sina -Rabat, Morocco, Faculty of Medicine and Pharmacy of Rabat, Mohammed V University.
2. Department of Dermatology and Venereology - Rabat, Morocco.

Manuscript Info

Manuscript History
Received: 10 June 2023
Final Accepted: 14 July 2023
Published: August 2023

Key words:-
Carbamazepine, DRESS Syndrome

Abstract

DRESS (drug reaction with eosinophilia and systemic symptoms) is a severe toxidermia associated with a number of drugs, including carbamazepine. The diagnosis is based on a triad of rash, haematological abnormalities (hypereosinophilia or atypical lymphocytes) and visceral involvement including liver and kidneys. In this case, weillustrate the case of a patient admitted to the children's hospital of Rabat Morocco for DRESS syndrome after the use of carbamazepine.

Introduction:-

Carbamazepine is among the antiepileptic drugs responsible for DRESS syndrome, its severity is related to the systemic manifestations that may evolve into multivisceral and lifethreateningfailure. The probability is estimated at 10%. We illustrate through this observation a case of DRESS syndrome induced by carbamazepine in a child.

Observation:-

W. 12 year old female patient, with a history of hospitalization for cervical myelitis (C2-C6) with sequelea of monoparesis of the right upper limb, with neuropathic pain for which she started carbamazepine (10 mg/kg/d) with progressive ascension. The patient was readmitted 6 weeks after starting carbamazepine for febrile rash. Clinical examination showed an altered patient, febrile at 39˚C, with generalized morbiliform maculopapular exanthema, facial oedema, withoutadenopathies**Figure 1, Figure 2**.

A biological work –up revealed liver cytolysis (ASAT: 206 IU/I, ALAT: 267IU/I), ferritin: 951 ng/ml with a low eosinophilia of 100 elements and no evidence of atypical lymphocytes on the smearmacrophagic activation syndrome. In addition, renal function, pancreatic workup,and cardiac ultrasound were unremarkable. The diagnosis of possible carbamazepine DRESS syndrome was made on the basis of clinical and biological. Carbamazepine was immediately discontinued, and 1mg/kg/d of oral corticosteroids were started with adjuvant therapy (an antihistamine combined with a topical emollient).The evolution was marked by a clinical improvement with normalization of the balance (ASAT: 16 IU/I, ALAT: 37 IU/I, ferritin: 61 ng/ml) and disappearance of fever and rash.

Discussion:-

Carbazepine is an anticonvulsant often incriminated in drug hypersensitivity syndrome with an incidence of 1/5000 [1]. DRESS syndrome is a rare, unpredictable and important entity to recognise, requiring immediate discontinuation of the offending drug due to its potential severity.

Corresponding Author:- E.M. Dirat
Address**:-** Neuropediatric Unit, Service P2, Children's Hospital, CHU Ibn Sina -Rabat, Morocco, Faculty of Medicine and Pharmacy of Rabat, Mohammed V University.

Its pathophysiology was related to an immune response in the context of a reactivation of the Herpes group of viruses, which explains the clinical and biological manifestations of DRESS [2, 3]. A genetic predisposition seems to play an important role in the pathogenesis of this syndrome.

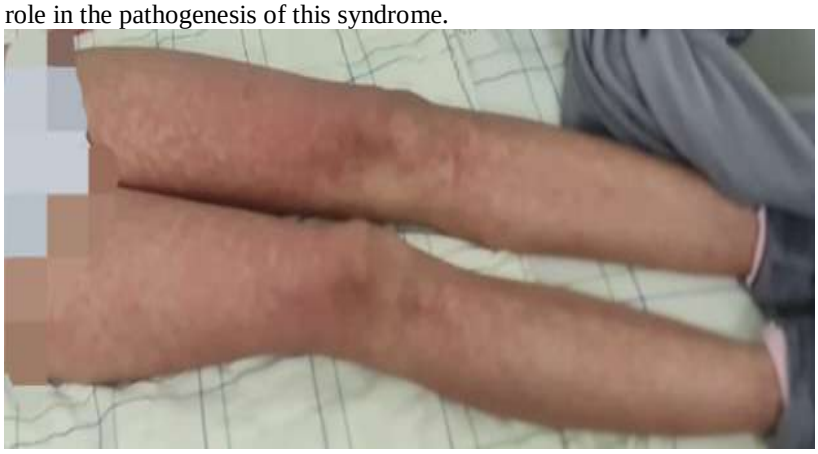

Fig1:- Generalized morbiliform maculopapular Exanthema with facial edema.

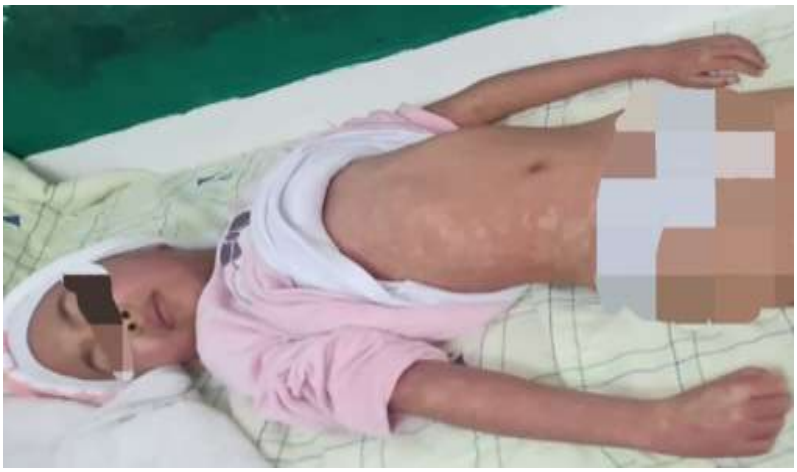

Fig2:- Generalized morbiliform maculopapular exanthema.

In most cases skin involvement is present: there may be a macular erythematous rash that is often pruritic and progresses to erythroderma. Pustular lesions, purpura and rarely vesicular-bullous lesions may also be present [4, 5]. Involvement of the oral cavity is possible, as well as adenopathy. In our patient, initial symptoms included fever, maculo-papular rash and facial edema. In DRESS syndrome, several organs are affected, but the most common visceral involvement is in the liver in the form of hepatocellular necrosis, which may progress to multisystem failure [6]. Symptoms often appear between two and eight weeks after the introduction of carbamazepine. This delay in onset is longer for other toxidermias and is a diagnostic guide, but also a cause of delayed diagnosis [7]. Initially the clinical picture may look like a viral infection (fever, asthenia, maculopapular rash, often facial oedema and pharyngitis) [4, 8].

In most cases skin involvement is present: there may be a macular erythematous rash that is often pruritic and progresses to erythroderma. There may also be pustular lesions, purpura and rarely vesicular-bullous lesions [4, 5]. The oral cavity may be affected, as well as adenopathy.

In DRESS syndrome, several organs are affected, but the most frequently observed visceral involvement is hepatic in the form of hepatocellular necrosis, which may progress to multisystem failure [6].

The validation criteria for DRESS syndrome are based on the RegiSCAR score, which classifies DRESS syndrome as certain, probable, possible or excluded(**table 1)**. The biological work-up is used to confirm the diagnosis, to assess the severity of the systemic involvement and to follow the evolution [4]. Skin biopsy does not confirm the

diagnosis but rather excludes other diagnoses [4]. Biologically, there is a leukocytosis with atypical lymphocytes, an eosinophilia is often absent in the first 14 days but present in 70% of cases [9], with elevated transaminases.

Table 1:- Validation criteria for the regiSCAR group (final score 2, excluded; final score 2-3, possible; final score 4-5, probable; final score 5, certain) [10].

Items	Score			Comments
	−1	0	1	
Fever ≧ 38.5 °C	N/U	Y		
Enlarged lymph nodes		N/U	Y	>1 cm and ≧ 2 different areas
Eosinophilia ≧ 0.7 × 10^9/L or ≧ 10% if WBC < 4.0 × 10^9/L		N/U	Y	Score 2, when ≧ 1.5 × 10^9/L or ≧ 20% if WBC < 4.0 × 10^9/L
Atypical lymphocytosis		N/U	Y	
Skin rash				Rash suggesting DRESS: ≧ 2 symptoms: purpuric lesions (other than legs), infiltration, facial edema, psoriasiform desquamation
Extent > 50% of BSA		N/U	Y	
Rash suggesting DRESS	N	U	Y	
Skin biopsy suggesting DRESS	N	Y/U		
Organ involvement		N	Y	Score 1 for each organ involvement, maximal score: 2
Rash resolution ≧ 15 days	N/U	Y		
Excluding other causes		N/U	Y	Score 1 if 3 tests of the following tests were performed and all were negative: HAV, HBV, HCV, Mycoplasma, Chlamydia, ANA, blood culture

ANA: anti-nuclear antibody; BSA: body surface area; HAV: hepatitis A virus; HBV: hepatitis B virus; HCV: hepatitis C virus; N: no; U: unknown; WBC: white blood cell; Y: yes.

Treatment consists primarily of carbamazepine avoidance. In the absence of serious signs, inpatient treatment is necessary: dermocorticoids, emollients, type 1 antihistamines; in the presence of serious signs (transaminases > 5 times normal, organic renal failure, pneumopathy, haemophagocytosis, cardiac damage, etc.):general corticosteroid therapy at 1mg/kg per day of prednisone. In the presence of a threat to life, general corticosteroid therapy associated with intravenous immunoglobulins (IVIG) at a dose of 2 g/kg per course to be spread over five days [7].

Conclusion:-

In spite of its unpredictable character and its rarity, it is important to recognize the DRESS syndrome in association of carbamazepine when there is a febrile eruption and an alteration of the biological assessment considering its gravity, in order to stop immediately the incriminated drug and associate or not a corticotherapy according to the systemic attack.

Références:-

1-Shiohara T, Lijima M, Ikezawa Z, Hashimoto K, (2007) the diagnosis of a DRESS syndrome has been sufficiently established one the basis of typical clinical features and viral reactivations .Br J Dermatol 156: 1083-1084

2- Descamps V, Ben Said B, Sassolas B, Avenel. Audrane M, (2010). Priseen charge du Drug reaction with Eosinophilia and systemic symptoms. Ann Dermatol Venereol 137:703-708

3-Eshki M, Allonore L, Musette P(2009) Twelve –year analysis of severe cases of drug reaction with Eosinophilia and systemic symptoms: a cause of severe of unpredictable multiorgan failure .Arch Dermatol 145: 67-72

4-Descamps V, Ranger-Rogez S. DRESS syndrome. Joint Bone Spine 2012 ; 81-15-21

5-Husain Z, Redddy BY, Schwartz RA. DRESS syndrome: Paart I. Clinic perspectives. J Am Acad Dermatol.2013; 68:693.

6- Peyriere H, Dereure O, Breton H, et al. Network of French Pharmacovigilance Centers. Variability in the clinical pattern of cutaneous side-effects of drugs with systemic symptoms: does a DRESS syndrome really exist? Br J Dermatol. 2006; 155:422-428.
7-W. Sellami. Syndrome DRESS à la carbamazepine
8-Manu CM, Buss G, Feldmeyer L, Formes sévères d'hypersensibilité médicamenteuse retardée. Rev Med Suisse 2013;9:803-11
9- Kardaun SH, Sidoroff A, Valeyrie-Allanore L, and Variability in the clinical pattern of cutaneous side-effects of drugs with systemic symptoms: Does a DRESS syndrome really exist? Br J Dermatol 2007; 156:609-11.