Ind J Dermatol Venereol Leprol 1994; 60 : 298-9

ABSOLUTE EOSINOPHILIA AS DAPSONE HYPERSENSITIVITY

V K Somani, Shailaja Hari, K V Emmanuel
Saud Ali Alquaity, V N V L Sita, Govind Raj

A case of lepromatous leprosy (L L) on multibacillary multidrug therapy (MBMDT) presented with oedema of the acral parts and marked eosinophilia. The case is being reported because of this extremely rare manifestation of dapsone hypersensitivity.

Key Words : Hypersensitivity, Dapsone, Eosinophilia

Introduction

Dapsone is the sheet anchor in the treatment of leprosy because it is cheap, has very high peak serum concentration to minimal inhibitory concentration (MIC) ratio and has minimal side effects.[1] The various side-effects reported with the use of dapsone are haemolytic anaemias, headaches, gastrointestinal complaints, skin rashes, psychosis, fever, nephrotic syndrome, DDS syndrome, agranulocytosis, hepatitis, peripheral neuropathy, methaemoglobinemia and hypoalbuminemia.

Eosinophilia as an allergic manifestation is reported[2] but the pronounced eosinophilic response which virtually accounted for all leukocytes is hitherto not reported to the best of our knowledge.

Case Report

A 44-years-old male patient of lepromatous leprosy was put on MBMDT. 7 months later he discontinued the treatment for about 1 month. 20 days after restarting the treatment, the patient developed oedema of the hands and feet which was not associated with fever, itching, skin rash, arthralgia or respiratory distress. Except for the acral oedema clinical examination was unremarkable. There was no history suggestive of atopy.

All the drugs were stopped and the investigations done were: CBP, ESR, reticulocyte count, G 6 PD level estimation, liver function tests, X-ray chest, complete urine examination, stool examination including test for occult blood, thyroid tests and blood urea. All the investigations were normal except CBP which showed an eosinophilia of 82% (total WBC count being 19,500 cells/cu.mm). Immunoglobulin E (IgE) level was normal. Within 10 days of stopping treatment the oedema subsided and eosinophilia dropped to 70%. A course of prednisolone and diethylcarbamazine was given for one month. The eosinophil count came down to 45% (TWBCC-15,400 cells/cu mm). On reintroduction of clofazimine and rifampicin the patient remained asymptomatic and eosinophil count dropped to 42% (TWBCC: 12,400 cells/cu mm).

Dapsone was then added to the regime. Within 2 days the patient developed acral oedema, with an increase in eosinophils to 56% (TWBCC : 12,400 cells/cu mm) thereby confirming dapsone causality. IgE level was normal.

The patient is now on rifampicin, clofazimine and pefloxacin. The oedema has resolved completely and the eosinophil count is now 20%.

From the Departments of Skin & V D, Deccan College of Medical Sciences, Princess ESRA Hospital, Shah Ali Bunda, Hyderabad, AP, India.

Address Correspondence to Dr V K Somani 2-1-438/A Nallakunta, Hyderabad - 500 044.

Comments

Eosinophilia is reported as one of the features of dapsone syndrome.[2] In this case, we not only found eosinophilia in the absence of other classical features of DDS syndrome but we detected absolute eosinophilia sometimes accounting for almost the whole blood picture.

The intriguing feature was the induction of reaction on reinstituting therapy after a gap of 1 month. Has the gap in the treatment allowed the antibody formation to reach the zone of equivalence with the circulating antigens, thus triggering the complement cascade?[3] The idiosyncratic host response resulting in abnormal or delayed metabolism of dapsone could also have played a part in precipitating the reaction.[4]

The absence of raised IgE levels in the presence of marked eosinophilia pointed to an anaphylactoid response.[5]

References

1. Anthony Bryceson, Roy E Pfaltzgraff Treatment Leprosy, 3rd edn., Edinburgh: Churchill Livingstone, 1990; 77-92.
2. Gokhale N R, Sule R R, Gharpure M B, Dapsone syndrome, Ind J Dermatol Venereol Leprol 1992; 58 : 376-8.
3. Assem E S K, Drug Allergy and Tests for its detection, IN: Text book of adverse drug reactions, (D M Davies, Ed) 4th edn. New York; Oxford University Press 1991, 689-732.
4. Wintroub B U, Stern R S, Cutaneous Drug Reactious. In : Current Perspectives in Immunodermatology (Rona M Mackie, ed) Ediburgh: Churchill Livingstone 1984; 75-97.
5. Parish W E. Clinical immunology and allergy. IN: Text book of dermatology (R H Champion, J L Burton, F J G Ebling, eds) 5th edn. Oxford: Black Scientific Publications, 1992; 253-304.