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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/14866
DOI URL: http://dx.doi.org/10.21474/IJAR01/14866

RESEARCH ARTICLE

DAPSONE HYPERSENSITIVITY SYNDROME - A CASE REPORT AT TERTIARY CARE HOSPITAL

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Manuscript Info

Manuscript History
Received: 05 April 2022
Final Accepted: 08 May 2022
Published: June 2022

Key words:-
Dapsone, Hypersensitivity, Leprosy, Glutathione

Abstract

Dapsone a sulfonamide drug used mainly in the treatment of Leprosy and various other several bacterial infections. Rarely Dapsone can lead to hypersensitive reaction characterised by fever, yellowish sclera and other systems involved. We report a 17 year old patient presented with fever, jaundice and generalised edema with a history of borderline tuberculoid leprosy receiving Dapsone, clofizamine and Rifampicin. After confirming Dapsone Hypersensitivity Syndrome, Dapsone is stopped and treated with corticosteroids, antibiotics, Glutathione and patient recovered gradually.

Introduction:-

Dapsone (4, 4' diaminodiphenylsulfone) belongs to class sulfonamides having bacteriostatic, antibacterial, anti-inflammatory properties. Dapsone is mainly used for the treatment of Leprosy caused by Mycobacterium Leprae, Dermatitis herpetiformis, Acne Vulgaris. Dapsone can cause untoward effects like haemolytic anaemia, methemoglobinemia, hepatic involvement (hepatocellular, cholestatic disease or both), cutaneous involvement (exantematous eruptions, steven-johnson syndrome, and toxic epidermal necrolysis), Agranulocytosis, nephritis, pneumonitis, hypothyroidism, lymphadenopathy, insomnia, psychosis and peripheral neuropathy. Dapsone hypersensitivity syndrome (DHS) is a severe and distinct idiosyncratic adverse reaction with multiorgan involvement. DHS can lead to irreversible organ damage or death if not recognised early and managed. A case of borderline tuberculoid leprosy who developed DHS is reported.

Case Report:

This is a case of 17 year old male patient got admitted in medicine ward with complaints of fever, Jaundice and facial edema since 5 days. Patient had a history of taking medication for borderline tuberculoid leprosy for 5 weeks (Rifampicin, Clofazamine, and Dapsone). In the course of hospital stay, peeling of skin appeared (exfoliative dermatitis) involving all the limbs, back, abdomen, face. Without mucosal involvement. Generalised oedema present. Laboratory investigations showed raised bilirubin (28.5 mg/dl), raised alkaline phosphatase (204 IU/ml), microcytic hypochromic anaemia with haemoglobin 8gm/dl, and raised white blood cell count. Ultrasound abdomen showed mild hepatomegaly, Acalculus cholecystitis, moderate splenomegaly and mild ascites. With history and investigation reports patient was diagnosed to have Dapsone hypersensitive syndrome. Dapsone was stopped and treated with antibiotics, corticosteroids, Glutathione. After 5 days of treatment patient became afebrile and symptoms started resolving.

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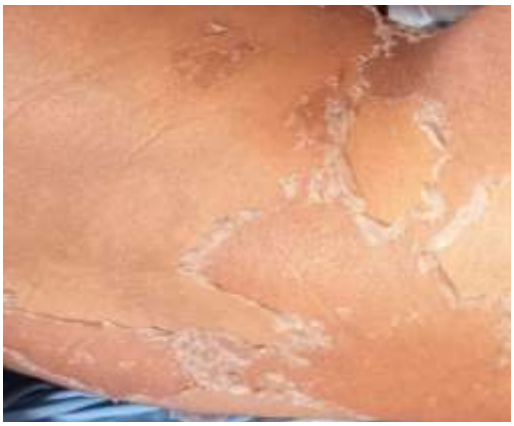

Figure 1:-

Figure 2:-

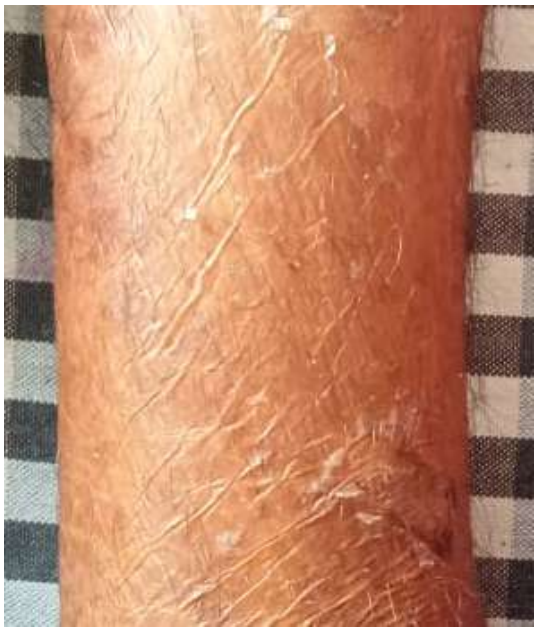

Figure 3:-

Figure 1,2,3:- Exfoliative dermatitis lesions over back, neck, lower limb.

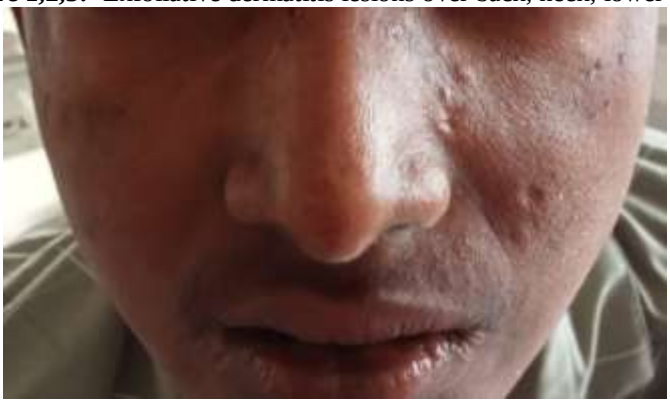

Figure 4:-

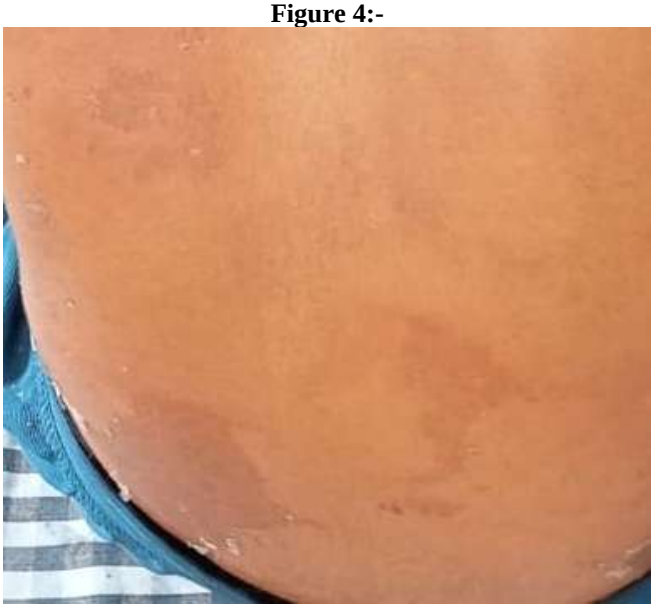

Figure 5:-

Figure 4,5:- Resolving skin lesions after stopping Dapsone.

Discussion:-

In 1951 Aldday and Barnes first described Dapsone hypersensitivity syndrome. Dapsone used for treating many infectious diseases and dermatologoical disorders like leprosy, toxoplasmosis, bullous dermatitis, acne, dermatitis herpetiformis. DHS is a rare adverse effect with dapsone commonly seen in leprosy patients . Incidence is 0.5%-3% DHS develops from weeks to several months after initiation of treatment. DHS presents with fever, jaundice, hepatitis, generalized edema, lymphadenopathy, hepato-splenomegaly, exfoliative dematitis and various other cutaneous manifestations.

Richardus and Smith criteria to diagnose DHS:
1. Symptoms should occur in less than 8 weeks after starting Dapsone therapy and should resolve after withdrawing drug
2. Symptoms should not be attributable to any other drug used concurrently.
3. Symptoms should be unrelated to leprosy or any other underlying disease.

Pathogenesis of DHS is unknown. There is some evidence suggesting metabolic differences in the production (increased activity or quantity of polymorphic enzymes of cytochrome P450) and detoxification of reactive metabolites (glutathione synthetase deficiency). hydroxylamine a toxic metabolite is produced by rapid

hydroxylation is considered to be a risk factor for hemolytic anemia. Cellular immunodeficiency in leprosy patients and history of allergy are other risk factors.

DHS is characterized by fever, skin rash, jaundice, haemolytic anaemia, methemoglobinemia, hepatitis, exantematous eruptions, Agranulocytosis, nephritis, pneumonitis, hypothyroidism, lymphadenopathy, insomnia, psychosis and peripheral neuropathy.

In this case patient presented with fever, edema and jaundice during the hospital stay cutaneous lesions developed (exfoliaive dermatitis) all over the body. Laboratory investigations showed hypochromic hemolytic anemia, hyperbilirubinemia, raised liver enzymes, hepatoslenomegaly. After confirming DHS patient was managed by stopping Dapsone, administering intravenous corticosteroids, oral Glutathione. Patient become afebrile, cutaneous lesions showed improvement

Considering the fatal adverse effects rechallenging test not done.

Conclusion:-

With immediate diagnosis and proper management, Dapsone hypersentivity can be medically treated without any morbidity and mortality.

Conflict Of Interest:
Nil.

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