**INTRODUCTION**

Dapsone (4,4- diamino- diphenyl sulphone) is used in the treatment of hypersensitivity disorders, variety of infections. It is most widely used as an anti-leprosy drug in the treatment of Hansen's disease [1]. Common side effects associated with the dapsone include hemolytic anemia, methemoglobinemia, nausea, and Jaundice, whereas severe life-threatening adverse effects include dapsone hypersensitivity syndrome (DHS) or sulfone syndrome and Toxic Epidermal Necrolysis. DHS is a hypersensitivity reaction that occurs due to Dapsone intolerance and was first reported in 1950 by Lowe and named by Allday and Barnes [2]. It is associated with fever, skin eruptions, and hemolytic anemia that progress to jaundice with systemic organ involvement like the liver. The present case report emphasizes the 35-year-old female with DHS who was on the multibacillary leprosy multidrug treatment (MB-MDT) regimen.

**CASE REPORT**

A 35-year-old female patient who was on an adult MB-MDT regimen for 4 weeks presented to Government General Hospital, Kadapa with complaints of yellowish discoloured of the eyes, generalized swelling all over the body with loss of appetite. Her medical history signifies that she is a known case of Hansen's disease and has used dapsone 100 mg daily as a part of the treatment regimen for 4 weeks. During her admission after clear examination, it was found that lesions are multiple popular lesions over the body with icterus in the eyes. Her laboratory investigations were normal except for Hb – 6 g%, direct bilirubin – 0.7 mg/dl, total protein – 5.5 mg/dl, and blood urea – 41 mg/dl. The condition was diagnosed as dapsone syndrome with Jaundice and the offending drug was dapsone.

**OUTCOME AND FOLLOW-UP**

After suspecting the condition, the patient was advised to stop dapsone and started treatment to DHS. She was prescribed with ceftriaxone injection 1 g OD, IV fluids, injection pantoprazole 40 mg OD, tablet doxycycline 100 mg OD, acemetaminophen tablet 500 mg TID, and glycerine lotion, Ursodeoxycholic acid 300 mg BD. After 8 days of treatment, the patient showed significant improvement in her condition and got discharged with medications T. Amoxicillin 500 mg BD, T. Ursodeoxycholic acid 300 mg BD, T. Ondansetron 8 mg BD, and T. Acetaminophen 500 mg BD.

**DISCUSSION**

Dapsone was used in the treatment of leprosy since 1947 and considered as safest drug in anti-leprosy drug regimen, but whereas the first report of hypersensitivity to dapsone was first published in 1949 [3]. The anti-inflammatory effects of dapsone were mainly due to the inhibition of neutrophil recruitment as well as the formation of oxidants which not only kill the bacteria but also damages the tissues. It starts with a triad of symptoms such as fever, skin eruption, and internal organ involvement [4]. This was very similar to our presentation, where the patient also had a triad of signs. The other possible mechanisms which cause DHS are altered hepatic metabolism including the acetylation and hydroxylation with toxic metabolite N-Hydroxyamine production through N-Hydroxylation pathway is thought to be responsible for Dapsone syndrome with hemolytic anemia [5]. Here, the patient also had deceased hemoglobin levels which are due to the hemolysis of red blood cells. Evidence suggests that hepatic involvement is observed more in form of hepatomegaly, cholangitis, and liver failure. HLA-B* 13:01 single nucleotide polymorphism is a possible predictor of DHS among leprosy patients [6]. As the patient is presented with hepatomegaly and increased direct bilirubin levels (Fig. 1. Eyes of patient revealing yellowish color) which were the possible predictors for the occurrence of Jaundice, as it was one of the classical signs of DHS syndrome. In contrast to the safety of Dapsone in the MB-MDT regimen apart from DHS, it was highly associated with other severe fatal adverse effects such as agranulocytosis, toxic epidermal necrolysis, and bone marrow suppression particularly in leprosy patients [7]. Our patient responded well with the symptomatic treatment and got discharged after 8 days.

**CONCLUSION**

This case reported the rare and fatal adverse event of dapsone therapy and a careful vision is needed on the patients who are on the dapsone treatment. This work also signifies the managing of adverse drug reactions in MB-MDT for the successful establishment of an anti-leprosy regimen. Early withdrawal of the causative agent is essential to prevent the progression of the reaction. Hence, awareness should be created among the people using the MB-MDT regarding their use and side effects of drugs which would also be helpful as a part of the pharmacovigilance program.
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CONFLICTS OF INTEREST
Nil.

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REFERENCES

Fig. 1: Eyes of patient revealing yellowish color