A Case of Dapsone Syndrome: A Case Report

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INTRODUCTION

The history of dapsone as an oral drug dates back to 1949. Initially it was primarily used for leprosy for
which it is still used, but in addition to that it acts as
an anti-inflammatory agent in many other inflammatory
dermatological conditions.¹ Dapsone hypersensitivity
reaction was known to man since 1950 and was reported
by Lowe. Hypersensitivity to dapsone is deemed to be the
main cause of this syndrome.² In general, dapsone has
good tolerability and is suitable for long term treatment,
but still adverse drug reactions (ADR) may occur.
Haemolytic anaemia and methemoglobinemia are the
known and frequent dose dependent adverse effects.
Major, less known, potentially fatal rare ADRs with
unknown pathomechanisms include hypersensitivity
reactions (HR) to dapsone like dapsone syndrome.³⁻⁵ One
such case lepromatous leprosy which developed dapsone
hypersensitivity syndrome is reported.

CASE REPORT

A 26-year-old female who was on multidrug therapy
treatment for lepromatous leprosy for past one month
presented with the history of yellowish discoloration of
skin and sclera which was associated with intense itching
for 8 days. On admission she was afebrile, normotensive.
She had pallor and pruritic maculopapular exanthematous
rash on extremities and face. Other system examinations
were unremarkable.

Investigations revealed hemoglobin 5.8 gm %, white blood
cells 0.8/mm3, platelets 56000/mm3, serum bilirubin 13.5.
Viral hepatitis B surface antigen, hepatitis E and hepatitis C
were negative. The levels of urea, creatinine, uric acid and
serum electrolytes were normal. Her HIV screening, blood
culture, urine culture was negative. Abdominal ultrasound
showed liver to be normal, gall bladder was well distended,
there was no evidence of portal hypertension or biliary
obstruction. Her chest radiograph was normal.
The symptoms hepatotoxicity (also evident by raised
bilirubin levels) occurred in less than 8 weeks after starting
dapsone therapy, was not attributable to any other drug
which was used concurrently and also the symptoms was
unrelated to leprosy or any other underlying disease. So, a
diagnosis of DHS (Dapsone hypersensitivity syndrome) was
made.

Thus, dapsone was stopped and corticosteroids were given
both orally and parenterally. She was also given blood
transfusion as her hemoglobin were low. Patient’s clinical
condition improved after two weeks and laboratory tests
were also around normal. Her blood counts returned to
normal. The steroids were slowly tapered. Patient was
discharged after her blood investigations became normal
and her serum bilirubin decreased to 1.8. On discharge she
was continued on tablets Clofazimine and Rifampicin as
alternative drug after stopping dapsone. For
corticosteroids, tablet Prednisolone was initially given at
the dose of 40 mg then at discharge it was tapered to 30
mg.

DISCUSSION

Dapsone syndrome occurs five to six weeks after the intake
of dapsone and so sometimes also called as 5 weeks
dermatitis. This syndrome also known by the name of
“sulfone syndrome" consists of exfoliative dermatitis and
or various cutaneous manifestations, lymphadenopathy,
hepato-splenomegaly, mononucleosis, fever, jaundice and
hepatitis. The cutaneous lesions are almost always present
but the presence of the other features may not be there in
all cases.³⁻⁴ According to Richardson and Smith, a true
diagnosis of Dapsone Hypersensitivity Syndrome should have following criteria:

a) Symptoms should occur in less than 8 weeks after starting dapsone therapy and should resolve after withdrawing the drug.

b) Symptoms should not be attributable to any other drug used concurrently.

c) Symptoms should be unrelated to leprosy or any other underlying disease.

In this case the patient had pancytopenia and low haemoglobin which was suggestive of bone marrow suppression and haemolysis due to dapsone. Hyperbilirubinemia seen in dapsone syndrome also occur due to haemolysis in addition to hepatotoxicity. Hepatocellular injury in dapsone syndrome is evident by elevated transaminases, and liver biopsy in such cases may show predominantly eosinophilic lobular and portal infiltration. Hepatitis may progress to hepatic failure and can be fatal. \(^4\) Cholestatic pattern of injury may have less severe course and high alkaline phosphatase level and modest rise in transaminases level is seen. Granulomas may be seen in liver biopsy.

Most patients recovered after dapsone withdrawal, and in few cases with glucocorticosteroids treatment, however approximately 10.2% had a fatal outcome. Most common cause of death being the hepatic coma. Discontinuation of dapsone therapy as early as possible improves the prognosis. It seems likely that the hypersensitivity syndrome to dapsone is a dose-independent drug reaction. Relative higher risk for development of hypersensitivity syndrome is present in first 5 months of treatment. During this period, frequent clinical and laboratory evaluations are important and may help in early prediction and diagnosis. However, there is no reliable way to predict the risk for dapsone hypersensitivity. If suspected, a prompt discontinuation of dapsone therapy happens to be the best way to improve prognosis. \(^3\)

The hypersensitivity syndrome to dapsone must be considered an extremely rare side effect as there are very less reports of the same though the drug is being used frequently.

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