

# DAPSONE-INDUCED METHEMOGLOBINEMIA IN HANSEN'S DISEASE

No 298

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## INTRODUCTION

Methemoglobinemia is a well-known complication of Dapsone, a drug which has been prescribed for multiple dermatological conditions. We present two cases of Dapsone-induced methemoglobinemia in patients taking Dapsone for treatment of Hansen's Disease or Leprosy.

## CASE DESCRIPTION

### Case 1:

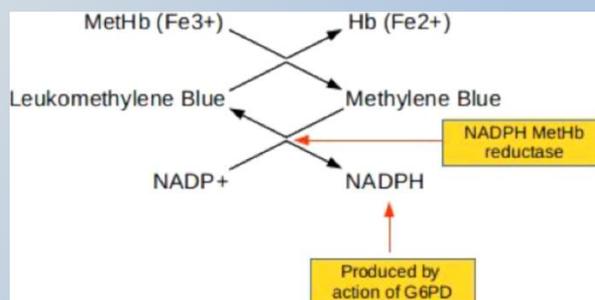
A 59-years-old Female with underlying newly diagnosed Leprosy; 2 weeks on treatment with Dapsone, presented with fever and lethargy for the past one week. On assessment, she appears pink, tachypneic with 90% oxygen saturation on room air. Saturation increased to 96% on high flow oxygen 15 Liters. Arterial Blood Gas (ABG) analysis showed PaO<sub>2</sub> of 179 mm Hg and Methemoglobin level of 4.0%. She was given Intravenous (IV) methylene blue and admitted. Repeated Methemoglobin level was 1.4% and she was discharged well after 4 days.

### Case 2:

A 54-years-old Male with underlying Multibacillary Leprosy on Multidrug Therapy (MDT) blister pack (Dapsone, Rifampicin and Clofazimine), presented with shortness of breath for 1 month. On assessment, he appeared cyanosed, not tachypneic with oxygen saturation of 93% on room air. He was put on high flow oxygen 15 Liters and ABG analysis showed PaO<sub>2</sub> of 502 mm Hg and Methemoglobin level of 4.5%. He was given IV Methylene blue, admitted and discharged well after 3 days. He was later changed to 2<sup>nd</sup> line MDT.

## DISCUSSION

Methemoglobinemia occurs due to conversion of iron from reduced ferrous (Fe<sup>2+</sup>) state to oxidized Ferric (Fe<sup>3+</sup>) state, making it incapable of binding oxygen molecules. Dapsone is a sulfone antibiotic and anti-inflammatory agent that inhibits folate synthesis. In our first case, patient was not presented with clinical cyanosis, making recognition challenging as cyanosis only occur when 10-20% of total hemoglobin turns into methemoglobin. While methemoglobin levels are readily available in modern ABG analysis, clinicians need to be aware of the "saturation gap" that may occur in these cases. IV Methylene blue is considered the first-choice treatment, along with other alternatives including high dose Vitamin C, hyperbaric oxygen therapy and even exchange transfusion.



## CONCLUSION

Methemoglobinemia is potentially fatal if left untreated and not addressed in a timely manner. High index of suspicion and detailed medication history is crucial for prompt recognition and early treatment.

## REFERENCES:

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