

SEVERE DENGUE INFECTION WITH ACUTE HEMOLYTIC ANEMIA AND METHEMOGLOBINEMIA: A CASE REPORT

INTRODUCTION

Methemoglobinemia is an uncommon condition characterised by hypoxic state. Methemoglobinemia as a result of hemolysis can be a non-cardio-respiratory cause of hypoxia which in this case due to Dengue Fever.

CASE DESCRIPTION

A 24-year-old Burmese Man was triaged to Red Zone due to hypoxia with oxygen saturation of 80% under room air. Other vital signs were unremarkable. He presented with fever and abdominal discomfort followed by dark colored urine for 5 days. He was pale, jaundice with moderate perfusion and pulse volume. Lungs was clear with normal heart sound. There was tenderness over lower abdomen. Urine was black in colour.

Arterial blood gas showed respiratory alkalosis with saturation oxygen of 99%. Methemoglobin level raised (14.3%) as well as lactate of 3.8 mmol/L. Full blood counts showed bicytopenia (Hemoglobin 5.8 g/dL, White Cell Count $21.9 \times 10^9/L$, Platelet $77 \times 10^9/L$, Hematocrit 17 L/L) with raised retics (3.86%). Coombs Test was negative. Glomerular filtration rate of 24 ml/min/1.73m² while liver function discloses severe transaminitis, unconjugated hyperbilirubinemia and increased levels of lactate dehydrogenase.

Dengue combo test revealed positive of NS1 Antigen. Blood Films for Microscopy Parasite was negative. Initial G6PD was deficient with peripheral blood film showed reactive feature of oxidative hemolysis. Fluid resuscitation was done systematically as well as blood transfusion commenced. He was then admitted with judicious fluids management, 6 pints of packed cells transfused in total and series of antibiotic coverage. Blood parameters improved. Other viral screening was negative. G6PD upon discharged was normal.

DISCUSSION

The cause of hemolytic anemia in dengue virus infection is a result of transient depression of the bone marrow. Atypical manifestations of dengue infection form transient polyclonal antibodies directly against erythrocytes antigens which in turn result in complement-mediated hemolysis. In this unique case where the co-occurrence of methemoglobinemia and hemolysis can occur secondary to oxidative stress. The recovery process from dengue infection will also result in the resolution of a hemolysis.

CONCLUSION

Dengue fever does not always typical. Severe dengue with complications needs to be encountered promptly for a better prognosis.

KEYWORDS

Dengue Fever, Hemolysis, Methemoglobinemia