



Dapsone Induced Agranulocytosis and Hemolytic Anemia in Immune Thrombocytopenic Purpura

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To the Editor: Dapsone is a commonly used second-line drug for immune thrombocytopenia (ITP) in developing countries as it is economical and efficacious [1]. Rarely, dapsone can cause idiosyncratic reaction leading to agranulocytosis [2]. We recently encountered a case who suffered from dapsone induced agranulocytosis (DIA) and severe hemolysis.

A 13-y-old girl was diagnosed as a case of ITP at other center 18 mo ago. She was steroid refractory and put on dapsone (100 mg/d) for symptomatic bleeding. After 6 wk, her platelet counts increased from 12,000/mm³ to 95,000/mm³. However, the other parameters of complete blood counts (CBC) were not monitored. After 1 mo, she presented with high grade fever, cough, dyspnea and pallor to our hospital. She was hemodynamically unstable and was admitted in the PICU.

Her CBC showed Hb – 6.8 g/dl, WBC – 1000/mm³ with absolute neutrophil count of 40/mm³, platelets – 360,000/mm³, corrected reticulocyte count – 2.6%. Peripheral smear showed polychromasia. Liver function test showed unconjugated hyperbilirubinemia. Chest radiograph revealed left lobe consolidation. Blood culture grew *Klebsiella pneumoniae*.

Bone marrow examination showed marked suppression of myeloid series and maturation arrest consistent with agranulocytosis. She was treated with granulocyte colony stimulating factor for 6 d and appropriate antibiotics. She also required mechanical ventilation and inotropic support. After 10 d, her clinical recovery coincided with neutrophil count recovery.

Agranulocytosis and hemolytic anemia were attributed to dapsone which was withheld.

Various hematological adverse effects of dapsone have been reported, like hemolysis, methemoglobinemia and pulmonary eosinophilia. Although dapsone has been reported to cause agranulocytosis during the treatment of dermatitis herpetiformis and leprosy, there are no case reports of DIA during the management of ITP [3].

DIA is a rare but catastrophic complication, observed 4–12 wk after the initiation of dapsone [2]. There are no guidelines for the maximum dose of dapsone in pediatric age group, however, a dose of >100 mg/d is associated with high risk of toxicity in adults [4]. Hydroxylamine, a metabolite of dapsone is implicated in maturation arrest of neutrophils which leads to agranulocytosis [3]. Although dapsone is known to induce mild hemolysis, in our case, patient developed significant hemolytic anemia.

This case emphasizes that patients receiving dapsone should be regularly monitored for neutropenia and hemolytic anemia.

Compliance with Ethical Standards

Conflict of Interest None.

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