

LETTER TO EDITOR (VIEWERS CHOICE)

DENGUE FEVER INDUCED APLASTIC ANEMIA-A VERY RARE ASSOCIATION

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Dengue fever has rarely been reported as an etiology for aplastic anemia. Till today, only 8 cases of dengue fever induced aplastic anemia have been reported. (1) A 13-years old male presented with black stools, sub-conjunctival hemorrhage as well as anemia. He had a history of fever and headache 1 month prior to presentation and he was found positive for dengue ns1 at that time. He was pancytopenic right from that time and continued to remain so for 2 months (Table 1). On current admission, a bone marrow aspirate and biopsy showed moderate degree of hypocellularity with predominant lymphocytosis. He had no history of drug abuse or exposure to possible toxic agents or radiation. Tests for hepatitis B and C, human immunodeficiency virus, Epstein - Barr virus, cytomegalovirus and parvovirus B19 were all negative. Flow cytometry (CD55 and CD59) and chromosomal breakage studies were negative for paroxysmal nocturnal hemoglobinuria (PNH) and Fanconi anemia. A diagnosis of dengue virus induced severe aplastic anemia was made. The patient received a transfusions of packed red blood cells and platelets several times and was initially given intravenous Immunoglobulin (IVIG) at a dose of 0.4 gm/kg/day for 5 days plus folic acid, iron, and vitamin B12. The patient's laboratory parameter values did not improve, and he became transfusion dependent after 1 month. Then he was treated with anti-thymocyte immunoglobulin (ATG), methylprednisolone at a dose of 30 mg/kg/day for 5 days and cyclosporine. Finally, he became transfusion independent 6 months later.

Table 1: Serial Complete Blood Count of the patient

| DATE | Hemo-globin (gm/dl) | Total Leucocyte Count (cells/cumm) | Platelet Count (cells/cumm) |
|------------|---------------------|------------------------------------|-----------------------------|
| 15.09.2014 | 4.4 | 2,500 | 30,000 |
| 18.09.2014 | 6.8 | 3,800 | 30,000 |
| 21.09.2014 | 9.9 | 3,600 | 33,000 |
| 13.10.2014 | 8.1 | 3,200 | 1,50,000 |
| 16.10.2014 | 7.3 | 3,000 | 1,20,000 |
| 19.10.2014 | 8.4 | 2,400 | 1,00,000 |
| 22.10.2014 | 7.7 | 3,800 | 60,000 |
| 24.10.2014 | 7.4 | 2,600 | 30,000 |
| 08.11.2014 | 3.6 | 3,400 | 50,000 |

Aplastic anemia (AA) is defined as a peripheral blood pancytopenia with a hypocellular bone marrow. Most cases of the disease can be pathophysiologically characterized as T-cell-mediated organ-specific destruction of bone marrow hematopoietic cells, with a strong association between AA and antigen HLA-DR2. (2) Albuquerque et al (3) and Pallota et al (4) have described similar cases from Latin America and Ramzan et al (5) reported a case from India. Though, leucopenia

and thrombocytopenia are common in dengue infection and the bone marrow is markedly hypocellular with abnormal megakaryopoiesis (6), it is transient. But in our patient, these findings persisted and patient presented to us with hemorrhagic manifestation of aplastic anemia. It is believed that cellular destruction is a direct consequence of both peripheral destruction induced by immune complexes and direct viral injury to bone marrow. (7) Though, HLA compatible stem cell transplantation is the treatment of choice, our patient responded to ATG and cyclosporine therapy.

In summary, dengue virus infection can induce aplastic anemia and immunosuppressive therapy can lead to complete remission.

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