LETTER TO EDITOR (VIEWERS CHOICE)

DENGUE FEVER INDUCED APLASTIC ANEMIA-A VERY RARE ASSOCIATION

Ram Prakash Saha, SK Rousan Zaman**, Namita Chandra*, Hemant Kumar**

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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-conjuctival 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 megakaryopoesis (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 born 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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From: Department of Pediatrics, Patna Medical College and Hospital, Patna, Bihar, India, **Department of General Medicine, NRS Medical College and Hospital, Kolkata, West Bengal, India.

Address for Correspondence: Dr. Ram Prakash Saha, Room No -304, New PG Boy's Hostel, Patna Medical College and Hospital, Ashok Rajpath, Patna-800004, Bihar, India.

Email: ddrrocky87@gmail.com

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