Varied Hematological Manifestation Of Parvo Virus Infection

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Abstracts: Background & Objective: Human parvovirus B19 infections may cause a widespread benign and self-limiting disease in children known as erythema infectiosum or fifth disease. Infections caused by human parvovirus B19 can result in a wide spectrum of manifestations, which are usually influenced by the patient's immunologic and hematologic status. Patients with underlying hematologic and immunologic disorders who become infected with this virus are at risk for aplastic anemia. We studied different hematological manifestations of Parvovirus infection like anemia, thrombocytopenia , eosinophilia and pancytopenia. Methodology: It was a retrospective study in which we studied 17 patients with parvo B 19 virus positivity their clinical presentation, predisposing diseases , CBC parameters and response to treatment. Parvo virus infection was diagnosed by parvo IgM titer(>11NTU considered as positive) .Also BM histopathology was done whenever possible. Results: Out of 17 patients studied with parvo virus B 19 positivity 12(70.58%) were male and 5(29.42%) were female .The age of presentation was between 2.5 to 14year,with mean of 8.7year.Parvo virus infection was seen amongst patients with HIV n=8(47.05%), Hemolytic anemia n=4(23.52%),ITP n=2(11.76%) and eosinophilia n=1(5.88%), plasmodium falciparum infection n=1(5.88%) & patient with acute lymphocytic leukemia n=1(5.88%).Commonest hematological manifestations were unexplained anemia n=16(94.11%) , thrombocytopenia n=5(29.41%), eosinophilia n=1(7.7%) , bicytopenia n=6(35.29%) , pancytopenia n=2(11.76%). Out of 17 patients 7(41.17%) were treated with IvIg and rest 10 required only supportive care as infection was transient. Conclusion: Parvo virus infection induced anemia is more severe and persistent in immunocompromised patients. Patients with hemolytic anemias may present with transient aplastic crisis due to parvo virus infection. Parvo virus infection may be considered as a possible etiologic agent for ITP. Coexistent Parvo virus infection in patients with P.falci malaria may be a cause for severe anemia. The hematological manifestations of parvovirus infection results from direct consequences of the ability of parvovirus B19 to target the erythroid cell lineage. However, accumulating evidence suggests that this virus can also affect other cell lineages pathogenesis of which remains to be fully elucidated.[Makwana G NJIRM 2015; 6(6): 59-60]

Key Words: Hematological Manifestation, Parvo Virus, Infection

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Introduction: Human parvovirus B19 (PV-B19) was discovered in the United Kingdom in 1975 by Cossart et al[1] and has been associated with a variety of clinical manifestations, including rash, thrombocytopenia, leukopenia, fetal wastage, hypocomplementemia, autoimmune hemolytic anemia, arthritis, and vasculitis.[2,3]We studied different hematological manifestations of parvo virus infection in patients admitted to hematology oncology division of our Pediatric department.

Material and Methods: It was a retrospective study.We studied 17 patients with parvo virus infection admitted to our institute.Inclusion criteria was patients with parvovirus IgM titer>11NTU and or bone marrow findings consistent with Parvovirus infection.We studied clinical presentation, predisposing conditions, CBC parameters, Reticulocyte count ,ESR and Biochemical markers.All patients were treated appropriately for underlying disease along with supportive care. Only 7 patients received IvIg for parvo virus infection with severe anemia.

Results: Out of 17 patients studied with parvo virus B 19 positivity 12(70.58%) were male and 5(29.42%) were female .The age of presentation was between 2.5 to 14year,with mean of 8.7year.Parvo virus infection was seen amongst patients with HIV n=8(47.05%),Hemolytic anemia n=4(23.52%),ITP n=2(11.76%) and eosinophilia n=1(5.88%), plasmodium falciparum infection n=1(5.88%) & patient with acute lymphocytic leukemia n=1(5.88%).Amongst patients with hemolytic anemia one was thalassemia intermedia , one was herediatory spherocytosis one with autoimmune hemolytic anemia and another patient was to be evaluated for hemolytic anemia. Commonest hematological manifestations were unexplained anemia n=16(94.11%) , thrombocytopenia n=5(29.41%), eosinophilia n=1(7.7%) , bicytopenia n=6(35.29%) , pancytopenia n=2(11.76%). Out of 17 patients 7(41.17%) were treated with IvIg and rest 10 required only supportive care as infection was transient.

Discussion: In our study out of 17 patients with parvo virus positivity 8 patients were HIV positive. Out of 8

patients with HIV 2 patients required transfusions more than 3 times and in one patient even after treatment with immunoglobulins infection was chronic & required very frequent transfusions and took more longer time for complete recovery.Suggesting that parvo virus infection is more severe and persistent in immunocompromised patients.One patient with plasmodium falciparum who was evaluated for unexplained anemia found positive for parvo virus infection.In a case report by R Gupta et all[4] also found co infection with parvo virus as a cause of severe anemia in a patient with plasmodium falciparum infection.[4] One patient with B cell acute lymphocytic leukemia was on maintanace therapy and evaluated for unexplained anemia as was requiring frequent blood transfusions found positive for parvo DNA PCR and treated with Imunoglobulins also responded to treatment.

Conclusion: Parvo virus infection induced anemia is more severe and persistent in immunocompromised patients. Patients with hemolytic anemias may present with transient aplastic crisis due to parvo virus infection. Parvo virus infection may be considered as a possible etiologic agent for ITP. Coexistent Parvo virus infection in patients with P.falci malaria may be a cause for severe anemia. The hematological manifestations of parvovirus infection results from direct consequences of the ability of parvovirus B19 to target the erythroid cell lineage. However, accumulating evidence suggests that this virus can also affect other cell lineages pathogenesis of which remains to be fully elucidated.

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