

# Aplastic Anemia in a Patient with Factor IX Deficiency

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## Introduction

Hepatitis associated aplastic anemia (HAAA) is a well documented entity. The disorder mainly affects children and young adults<sup>1</sup>. Pancytopenia is usually noted within 2-6 months time after an acute attack of hepatitis<sup>1</sup>. Most cases have been described in association with hepatitis A or hepatitis C Virus<sup>1-3</sup>. The report describes, an unusual case of acquired aplastic anemia in a patient with hemophilia and acute hepatitis C.

## Case Report

The patient, a 16-year old boy was diagnosed to have Hemophilia-B of moderate severity (Factor IX level of 2%) at the age of 3 years. He received cryosupernatant for symptomatic bleeds and has never been given lyophilized factor IX concentrate. In October 1998, the patient presented with nausea and dull abdominal pain, followed by jaundice two weeks later (total bilirubin 9.2 mg/dl, direct bilirubin 6.4 mg/dl, ALT 2642 Units/L and AST 940Units/L). The liver was palpable 3 cm and was tender to touch. Viral serology was negative for hepatitis A, B, C and HIV 1 and 2. He was positive for Hepatitis C-RNA, as detected by polymerase chain reaction. His blood counts were normal. A two weekly follow up revealed declining liver enzymes and clinical improvement.

In January 1999, the patient developed increased frequency of bleeding that could not be controlled with standard doses of cryosupematant. Inhibitor screen was negative. The patient was also anaemic. Full blood counts showed HB 7.2 gm/dl, MCV 105 fl, WBC  $1.3 \times 10^9/L$ , absolute neutrophil count  $0.46 \times 10^9/L$  and platelets of  $9 \times 10^9/L$  Reticulocytes were 4%. His liver enzymes were still abnormal (ALT 260, AST 140). Hepatitis C antibody turned reactive. Bone trephine confirmed the diagnosis of severe aplastic anemia with overall cellularity of 15%, absence of megakaryocytes and majority of cells being lymphocytes and an increase in plasma cells. Patient subsequently had increased episodes of bleeding. The patient was not taking any drug that may be incriminated in the causation of aplastic anemia. Twice, he bled intracranially and was admitted in an intensive care unit of neurosurgery but recovered without operative intervention. Oxymetholone was given for 3 months, but he did not respond. Immunosuppressive treatment could not be given for financial constraints. The patient is alive on supportive therapy (packed red cells, platelets and cryosupernatant).

## Discussion

This patient had typical features of HAAA. The double hemostatic defect, congenital and acquired, caused increase in bleeding episodes and also bleeding in sensitive disorder and an imbalance of lymphocyte sub-population (Helper/Suppressor) and T lymphocyte (CD 8+) activation has been found to have pathogenetic role<sup>4</sup>.

Prevalence of hepatitis C and other hepatitis causing viruses appears high in most hemophiliacs (and other chronically transfused patients such as thalassaemics), particularly in developing countries, where donor screening is not adequate at most centres. But no case of acquired Aplastic anemia has previously been reported in this high risk patient population<sup>5</sup>. The possibility that the genotype of hepatitis C virus in patients with HAAA is different as compared with hepatitis C virus affecting haemophiliacs and other transfusion dependent patients need further investigation.

The increased bleeding tendency and bleeding in sensitive areas is understandable in the light of double haemostatic defect. Immunosuppressive treatment would have been worth trying considering the immune mediated mechanism of disease, however it could not be given for financial reasons.

The possibility of acquired aplastic anaemia should be kept in mind in chronically transfused patients, if they develop bicytopenia or pancytopenia within six months of an acute attack of hepatitis irrespective of their seropositivity for common blood borne viruses since the etiologic agent may well be non A, non B and non C virus<sup>3,6</sup>.

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