Case Report

Abo-incompatible blood transfusion in a case of autoimmune hemolytic anemia - A case report

Kh. Yoihenba[1], Sadanand Kamble[1*], S Kenny[2], Santosh Singh[1], Parmeshwar Junare[1], Kalpesh Saswade[3]

{[1]PGT, [2]Assistant Professor, Department of Medicine} {[3]PGT, Department of Surgery} Regional Institute of Medical Sciences Imphal, Manipur, INDIA.
Email: sadakamble@gmail.com

Abstract

Autoimmune hemolytic anemia is a heterogeneous disease with respect to the type of the antibody involved and the absence or presence of an underlying condition. Treatment decisions should be based on careful diagnostic evaluation. And when the need of blood transfusion become eminent, it is a challenges to the treating physician as well as to transfusion medicine specialist. Here, is case report of blood transfusion in a patient of AIHA where repeated blood of AB+ve was given though later on she was found to be O+ve. And reporting this case, we would like to emphasis on the responsibility for treating physician as well as for the transfusion medicine service especial in regards to blood transfusion in any case of AIHA.

Keyword: Autoimmune Hemolytic anemia, Incompatible blood transfusion, clinician responsibility.

[*]**Address for Correspondence:**
Dr. Kamble Sadanand, PG Student, Department of Medicine, Regional Institute of Medical Sciences Imphal, Manipur, INDIA.
Email: sadakamble@gmail.com
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INTRODUCTION

Autoimmune hemolytic anemia (AIHA) consists of a group of acquired hemolytic anemia which result from the development of auto antibodies directed against antigens on the surface of patient's own red blood cells[1]. Patients with autoimmune hemolytic anemia (AIHA) frequently have anemia of sufficient severity as to require a blood transfusion. However, it is impossible to find compatible blood when, as is frequently the case, the autoantibody in the patient's serum reacts with all normal red blood cells. Further, the autoantibody may mask the presence of a red cell alloantibody capable of causing a hemolytic transfusion reaction[2].

CASE REPORT

A 57 years old lady presented to the Out Patients Department with 10 days history of jaundice, vomiting, generalized weakness and fever for 2 days, with no history of any chronic illness in the past like DM, HTN, TB, or Remittent jaundice. On examination, the patient was found to be severely pale, mildly jaundiced. There was no lymphadenopathy, edema, rash, petechiea or bruises. A non-tender soft hepatomegaly with a span of14 cm and a soft spleen 3 cm below the left costal margin was noted. Lung fields were clear and neurological examination was normal. Laboratory Report on presentation are as follow: (Table 1) Hb-3.5 g/dl; total RBC-1.10m/cumm; TLC-8100 cumm (57% neutrophil, 40% lymphocyte, 2% monocytes, 1% eosinophil); nucleated RBC-6%100 wbc; Platelet count-2.5 lakhs/cu mm; reticulocyte count-56; ESR-140. Agglutination of red blood cells was noted on peripheral smear examination with separationon warming the slide smear showed anisopoikilocytosis with predominant macrocytes, hypochromia, few microcytes and nucleated red blood cells. Direct anti globulin test (DAT) was strongly positive but tests for anti-nuclear antibodies (ANA) and rheumatoid factor were negative. Total bilirubin 7.5 mg/dl, with indirect bilirubin6.4 mg/dl and increased LDH 2435 IU/L. Clinical presentation and laboratory parameters were consistent with hemolysis and

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a working diagnosis of AIHA was made. The patient was given intravenous ceftriaxone in view of fever. Severe anemia necessitated transfusion with packed red cells. Cross-matching was done and patient's blood group came out to beAB+ve. One unit of packed cell was transfused and patient developed mild chest pain and shortness of breath after 10-15 minutes of blood transfusion. On auscultation, mild crepitation was present bilaterally. Symptom was relieved with inj. of pheniramine maleate and 20mg of furosemide. Transfusion was then continued and went uneventful. Next day, cross matching was done again and another unit of AB+ve packed cell was transfused and this time also similar symptom developed but just after completion of transfusion. Blood sample was taken and discussed with faculties of transfusion medicine regarding the events occurred during and after blood transfusion. Blood grouping was re-check using reverse typing with gel card. The patient's blood group turns out to be O+ve. Then, patient was managed in the line of ABO-incompatible transfusion. Oral Prednisolone at the dose of 2mg/kg/day was started on the 3rd day. One more unit of blood of least incompatible O+ve packed cell was given and this time transfusion was uneventful. Hb raised to 7.9% after 10 days of starting oral prednisolone. Kidney function were monitored daily on the fear of the development of acute kidney injury due to ABO-incompatible blood transfusion but patient didn't have any kidney dysfunction till the day of discharge from hospital. Patient came for follow up after 4 weeks of discharge and Hb was raised to 11.7%: total bilirubin-0.5mg%; serum creatinine-0.8mg%. Steroid was gradually tapered to a 0.5mg/kg/day.

DISCUSSION

AIHA is one such group of acquired hemolytic anemia which results from the development of auto-antibodies directed against antigens on the surface of patient's own red blood cells. Majority of the cases are mediated by warm reactive auto-antibodies while AIHA due to cold reactive antibodies are less common[3]. Diagnosis of AIHA is based on evidence of hemolytic anemia consisting of anemia, jaundice, splenomegaly, reticulocytosis, raised serum bilirubin and a positive DAT[1]. It is quite unusual for a patient to have AIHA of life-threatening severity when first seen. However, uncertainty as to appropriate management, whether both in the laboratory and on the clinical practices often leads to delays which allow the development of severe and even life-threatening anemia, which then becomes a medical emergency. Prompt evaluation and management will generally avoid the need of transfusing the patient on an emergency basis[4]. Transfusion of patients with autoimmune hemolytic anemia (AIHA) presents a unique set of potential problems. When the patient has a broadly reactive autoantibody, as is generally the case, the transfusion medicine service is likely to find that all units of red blood cells (RBCs) are incompatible, thus adding an element of uncertainty to the risk-benefit ratio of transfusion. The management of such patients is one of the most critical responsibilities of the transfusion medicine service in conjunction with clinicians who have primary care responsibility. To make appropriate clinical decisions in this setting, there should be a good communication between clinicians and transfusion medicine personnel. Clinicians have a responsibility to understand the principles of compatibility test procedures in patients with AIHA and to understand their significance while transfusion medicine service personnel have an obligation to provide to the clinician information concerning the extent and effectiveness of the compatibility test procedures employed[2].

Responsibilities of the clinician

A discussion between the attending physician and the transfusion medicine service should take place as soon as it is evident that a patient with AIHA is being considered for transfusion. The clinician should indicate the urgency of the transfusion and discuss with the transfusion service personnel the time required for the more detailed than usual serologic studies that will be necessary. The clinician should also discuss the compatibility tests to be undertaken by the laboratory using the outline of compatibility test procedures provided below as a guide to adequate pre-transfusion testing and seek assurance that appropriate testing is to be performed.

Responsibilities of the transfusion medicine service

In some instances, it will be the responsibility of the transfusion medicine service to initiate the communication since the diagnosis of AIHA may first be made during compatibility testing for a requested transfusion. In any case, the transfusion medicine service personals should share with the clinician, the information about the compatibility test procedures performed. After appropriate testing, the clinician should be assured that the transfused RBCs are unlikely to cause an acute hemolytic transfusion reaction even though the RBCs cannot be expected to survive normally because of the patient's autoantibody. The attending physician can then proceed to make a decision regarding transfusion on the basis of the clinical need. In the present case, the patient was diagnosed to be suffering from AIHA based on the history, the objective examination, and the laboratory findings. Because of the severe anemia on presentation, blood transfusion was given hurriedly which turn out to ABO-incompatible but patient didn't develop any severe transfusion reaction or organ failure. Then after approaching together, the clinician and the transfusion

medicine personal, blood transfusion could be achieved without any transfusion reaction.

CONCLUSION

Transfusion of patients with autoimmune hemolytic anemia (AIHA) presents a unique set of potential problems. When the patient has a broadly reactive autoantibody, as is generally true, the transfusion medicine personals is likely to find that all units of red blood cells (RBCs) are incompatible. Therefore its evaluation and management should be a multidisciplinary approach especially the attending clinician and the transfusion medicine personals.

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