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Red Cell Alloimmunization In Rh D Positive Women: A Rare Case Report.

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ABSTRACT

Rh D antigen is the most important cause of alloimmunization in pregnant females. Anti-K, anti-c, anti-Fy[a] and Anti-E are the most serious causes of HDFN after anti-D . The present case emphasizes the need of screening of other minor antibodies like Anti-C antibody in pregnant woman who gives a suggestive history but no evidence of anti-D**.** Herewith we reported a case of , 26 year old female was admitted with complaint of weakness and fever for 4 days in Medicine department. On investigation , Hemoglobin was found to be 6gm/dl and blood group was B positive by tube method. Request for one unit of PRBC was received in our blood bank. Blood grouping was re-confirmed and AHG phase cross matching was performed with B positive PRBC by gel technique. Cross match result was found to be 4+ incompatible. On detailed history, patient conceded history of one normal healthy baby and IUD in next pregnancy 3 months back and also history of breathlessness on transfusion of only 2-5ml of blood that was transfused 3 months back after IUD. Further work up was done by performing coombs test, antibody screening and identification. Random cross matches with 12 units of B positive were done and 2 units were found to be compatible**.** Results showed positive indirect coombs test and anti-C antibody. Phenotype of patient was DcE/DcE. Her husband phenotype was DCe/DCe**.** Based on our observation in this case, we conclude that RhD positive pregnant women should also be considered for antibody screening to identify the antibodies against other minor antigens especially the high risk pregnancies and multigravida**.**

Keywords: Red cell alloimmunization, Rh D positive women

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INTRODUCTION

Hemolytic disease of the fetus and newborn (HDFN) due to alloimmunization is a result of the transfer of IgG1 or IgG3 through the placenta from the mother to the fetus [1,2]. Mixing of blood between the mother and fetus can occur due to miscarriages, ectopic pregnancy, ante-partum bleeding. It can also occur due to procedures like amniocentesis/cordocentesis or due to external factors like, abdominal trauma. The mother may also get sensitized due to blood transfusion during pregnancy [3] and it is the most common risk factor for alloimmunization. Rh D antigen is the most important cause of alloimmunization in pregnant females. Anti-K, anti-c, anti-Fy^a and Anti-E are the most serious causes of HDFN after anti-D. The present case emphasizes the need of screening of other minor antibodies like Anti-C antibody in pregnant woman who gives a suggestive history but no evidence of anti-D.

CASE REPORT

A 26 year old female was admitted with complaint of weakness and fever for 4 days in Medicine department. On investigation , Hemoglobin was found to be 6gm/dl and blood group was B positive by tube method. Request for one unit of PRBC was received in our blood bank. Blood grouping was re-confirmed and AHG phase cross matching was performed with B positive PRBC by gel technique. Cross match result was found to be 4+ incompatible. On detailed history, patient conceded history of one normal healthy baby and IUD in next pregnancy 3 months back and also history of breathlessness on transfusion of only 2-5ml of blood that was transfused 3 months back after IUD. Further work up was done by performing coombs test, antibody screening and identification. Random cross matches with 12 units of B positive were done and 2 units were found to be compatible.

Results showed positive indirect coombs test and anti-C antibody. Phenotype of patient was DcE/DcE. Her husband phenotype was DCe/DCe.

DISCUSSION

The management of minor RBCs alloimmunized pregnant women is similar to anti-D alloimmunization [4]. Since anti-kell has the ability to cause bone marrow suppression in addition to RBC hemolysis at any titer serial middle cerebral artery peak systolic velocity of blood flow (MCA-PSV) Doppler should be performed regardless of antibody titer done. Among the Rh-negative pregnant women anti-D remains the most common cause of alloimmunization. The widespread use of protective anti-D immunoglobulin program against Rh-D alloimmunization has an impact of reducing alloimmunization due to anti-D and unmasking the risk of minor RBC antibodies alloimmunization, making them a significant cause of hydrops fetalis and hemolytic disease of fetus and newborn [5,6]. Hence, determining the prevalence of minor antibodies to RBC antigens in Rh positive pregnant women is an important step in determining the magnitude of alloimmunization and the complications among Rh-positive pregnant women [7].

CONCLUSION

Based on our observation in this case, we conclude that RhD positive pregnant women should also be considered for antibody screening to identify the antibodies against other minor antigens especially the high-risk pregnancies and multigravida.

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