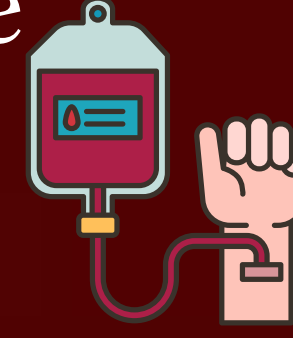


How did we find a cross match compatible blood for a child with allo-antibody and serum in short supply?



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Ten months old male child with malaria (*P. vivax*), thrombocytopenia and anemia (Hb <5.0 g/ dl) was admitted to hospital for treatment. His blood specimen was referred to our blood center with request to provide 120 ml red cells for transfusion. He was grouped as O, Rh.D+; DAT and the auto control tests were negative, antibody screen test was showed 4+ in saline phase was 4+ preferentially reacting at cold temperatures. Cross-match test with random 12 blood units was incompatible (+4 in saline phase). As the patient was in pediatric age group, and with little amount of serum left and no more blood sample was available for further cross match, we adopted the following strategy to identify first the specificity of the antibody involved and then to perform cross-match test with scarcely available serum of the patient. As antibody reacted in saline phase but was not with the RBCs pretreated with tested using enzyme treated cells to understand the nature of antibody involved.

As antibody reacted with untreated RBCs but not if the cells treated with enzyme indicated to its specificity to antigens sensitive to enzyme, e. g. antigens of the MNS, Duffy or Indian blood group systems. The specificity within the Duffy blood groups was ruled out as it anti-Fy antibodies do not react in saline phase. The patient's red cell were tested with anti-M and anti-N reagents and were typed as NN homozygote and such individuals have potential to develop naturally occurring anti-M. We took RBCs of the 10 random group O units from our inventory and tested with known anti-M reagent, of which 3 units lacked M antigen. The RBCs of these 3 units were tested with available few drops of the patient's serum and all were found compatible. One of these compatible unit was issued and transfused with no untoward reaction.

Comments: Patient's serum in scarce supply needs to be utilized through some conservative approaches.1 Saving the test supernatant (TS) and judicial use alongside appropriate positive control helps us in screening with a reasonably large number of blood units to find a compatible blood unit for transfusion. In present case, we aspirated the TS from the reaction chamber from the gel-card and tested, that shows strong reactivity. This approached has provided yet another unique approach to conserve the serum with antibody when is in short supply. As the patient was positive for *P. vivax* parasitemia and was on active anti-malarial drug regimen. In order to avoid iatrogenic drug induced hemolysis if the selected blood unit co-incidentally happens to be G6PD deficient, efforts were made to confirm its G6PD enzyme status that was found to be normal.

References: 1. Joshi Sanmukh R., Vekariya Mayuri M, Rajapara Manisha M. A conservative approach in finding compatible blood for a patient with sickle cell disease having multiple alloantibodies. Asian J Transfus Sci 2023;17(1):121-4.