

HDN ABID CASE #1

1. Is the antibody identification of the outside laboratory confirmed? If not, what is the phenotype of the additional cells you would like to test?

If we can assume that the 2 screening cells were Fy^a positive the antibody identification is complete. However, it might be useful to select single dose Fy^a positive cells (phenotype Fy(a+,b+) in order to determine if crossmatches with the patient's serum would be suitable for selecting Fy^a negative donor RBCs, should she need transfusion.

2. Does this antibody cause hemolytic transfusion reactions? Yes.
Hemolytic disease of the newborn? Yes.

3. What is the titer? Is anti-Fy^a of this titer likely to cause anemia in the fetus?

The titer, according to our criteria, is 4 (the last dilution at which a macroscopic reaction is seen with a single dose titrating cell). Although there are multiple case studies of HDN due to this and other blood group antibodies which include the mother's antibody titer, such reports frequently do not include the conditions under which the titer was performed (e.g. incubation times, phenotype of titrating cell), and definitive studies are lacking due to the infrequency of affected cases. In the absence this knowledge the critical titer for significant in utero HDN is often assumed to be 16.

4. What is the probable source of the immunizing stimulus in this case?

Her previous transfusion at age 8.

5. Is there any further testing that could be performed to evaluate the latter possibility? (Hint: could the fetus be antigen negative?)

Since her immunization derived from a source other than a pregnancy with her current partner, it is possible that he is Fy^a negative and cannot father a Fy^a positive child. Therefore, one might determine his Duffy phenotype. If the father of this pregnancy could transmit a Fy^a allele to the fetus, or if this fact were unknown, most laboratories would perform serial titers of the mother's antibody and intervene with more specific invasive tests if the titer increased significantly.

6. What percentage of Caucasian donors are expected to be compatible with this recipient? 34%
African-American donors? 90%

Follow-up testing:

A specimen was drawn from the patient's husband for determination of his Duffy phenotype. He was Fy^a neg, Fy^b pos. No further titration was performed.