

ABID CASE #22

1. What is the probable identity of this antibody? (Hint: Look up neutralization of blood group antibodies.)

The pattern of variable reactivity with most RBCs, as well as the mixed field reactivity seen in the PEG panel is characteristic of anti-Sd^a. This specificity is proved by the urine neutralization test.

2. How is the neutralization done? What does the saline control demonstrate?

The unknown serum is incubated for 15 minutes at room temperature with at a 1:1 ratio with boiled, dialysed urine containing Sd^a. Urine is obtained from guinea pigs, from individuals known to have strong expression of the antigen, or pooled from multiple individuals. A tube of the urine is placed in boiling water for 10 minutes and then dialysed against saline to produce an isotonic solution containing the antigen. The dilution control demonstrates that the loss of reactivity in the treated plasma is not simply due to the 1:1 dilution.

3. How would you provide compatible RBCs in this case?

As seen in the last table, the patient's serum failed to react in an IAT using saline-suspended RBCs, so this system can be used for crossmatches.

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

Anti-Sd^a is reported to have caused hemolysis in two cases in which the donor RBCs had very strong expression of the antigen. The antigen is not expressed on the RBCs of newborns and has not been reported to cause HDN.

5. What is the biochemical nature of the antigen?

Sd^a antigenicity is carried by oligosaccharides expressed on a variety of tissues in addition to RBCs, and on the Tamm-Horsfall glycoprotein secreted into urine.