PathMD™: Board Review Letter

Author: Douglas Blackall, M.D. **Blood Bank – Part 2** Volume 1, Number 5

Clinical Scenario:
The patient is a 2-year-old boy who was admitted to the hospital for treatment of intra-abdominal wounds secondary to blunt trauma. He has no history of transfusion. His admission hematocrit was 43.2% but his hemoglobin/hematocrit later fell to as low as 8.6/25.3. A blood sample was sent to the Blood Bank for a type and crossmatch evaluation.

Questions:
1. Observe the results of the patient's antibody screen and antibody identification panel. What is the putative identity of the patient's antibody or antibodies?

A. Anti-Fy^a
B. Anti-Jk^a
C. Anti-K + anti-Fy^a
D. Anti-M
E. Anti-S

2. Which of the following serological techniques is a useful tool in definitively identifying antibodies of the type found in this patient?

A. Serum acidification
B. Cold incubation
C. Testing against additional homozygous-expressing red blood cells
D. Use of enzyme-treated red blood cells
E. All of the above

3. What is the name of the molecule which carries the antigen to which this patient's immune response is directed?

A. Glycophorin A
B. Glycophorin B
C. Glycophorin C
D. Glycophorin D

4. Which statement best describes the clinical relevance of the type of antibody found in this patient?

A. Always considered to be clinically significant with respect to both hemolytic transfusion reactions and hemolytic disease of the newborn
B. A common cause of hemolytic transfusion reactions but an uncommon cause of hemolytic disease of the newborn
C. An uncommon cause of hemolytic transfusion reactions but a common cause of hemolytic disease of the newborn
D. An uncommon cause of both hemolytic transfusion reactions and hemolytic disease of the newborn
E. Has not been implicated in either hemolytic transfusion reactions or hemolytic disease of the newborn

5. Which statement most accurately describes the manner in which patients with this antibody should be transfused?

A. The provision of ABO- and Rh-compatible blood alone is acceptable
B. Transfuse with crossmatch-compatible blood; antigen typing of the unit is not required
C. Red cell units must be both crossmatch-compatible and lack the blood group antigen to which this antibody is directed
D. Transfusion should be withheld unless absolutely necessary as the patient is likely to experience a hemolytic transfusion reaction

