Case 7: T

Laboratory Protocols Used to Solve the Case Studies:

Below are basic rules/protocols to guide you in the completion of the cases. Keep in mind that these rules were developed in our laboratory and are associated with the solution of these cases only.

When solving the antibody identification cases:

1) The following antibodies are ruled out **without regard to the zygosity** of the rule out cells on the screen and panel: D, P_1, K, Lu^a, Lu^b, Kp^a, and Kp^b

2) The following antibodies are ruled out using **homozygous rule out cells only**: C, E, c, e, M, N, S, s, Le^a, Le^b, k, Fy^a, Fy^b, Jk^a, Jk^b

3) If the following antibodies are **NOT** ruled out using the routine panel and screen cells, you need **NOT** select additional cells to do so: C^w, Lu^a, Lu^b, Kp^a, Kp^b, Js^a and Js^b

4) **EXCEPT** in cases of autoantibodies, antigen typing provides additional information for ruling out potential case solutions; that is, if the patient is antigen positive, you can conclude that the corresponding antibody is **NOT** present in his/her serum. For example: In an Rh-positive (D-positive) person, alloanti-D may be ruled out based on this antigen typing result.

History:

T, a 52-year-old man, had a low hemoglobin level when he was admitted to your institution. His physician would like to transfuse two units of red blood cells.

Serology: Attached below

Questions: Please select the **best** answer to each question.

1. According to the patient serology, the ABO type for T is:
   - A. A
   - B. B
   - C. O
   - D. Cannot interpret ABO typing

2. T's Rh type is:
   - A. Rh positive
   - B. Rh negative
   - C. Weak D
   - D. D mosaic

3. T's antibody screen and autologous control can best be interpreted as:
   - A. Antibody screen positive; autologous control negative
   - B. Antibody screen positive; autologous control positive
   - C. Antibody screen negative; autologous control negative

D. Antibody screen negative; autologous control positive

4. The serology results best indicate:
   A. A contaminated sample
   B. A cold autoantibody producing hemolysis
   C. A warm autoantibody producing hemolysis
   D. Multiple alloantibodies

5. Which of the following antibodies could **not** be ruled out using the ABO, Rh, and antibody screen?
   A. Anti-D
   B. Anti-N
   C. Anti-Jk^a
   D. Anti-C

6. Which of the following antibodies remain after completion of the antibody identification (completion of panel antigram)?
   A. Anti-M
   B. Anti-Lu^b
   C. Anti-N
   D. Anti-Jk^a

7. Given the patient history and all serology results, what is the best hypothesis of the antibody/ies identity(ies)?
   A. Anti-N
   B. Anti-Jk^a
   C. Anti-K
   D. Anti-D

8. Which of the following is the best explanation for the hemolysis seen in this case?
   A. The patient sample is contaminated
   B. Patient sample was collected in EDTA
   C. Patient has an alloantibody capable of causing hemolysis
   D. Patient has an autoantibody hemolyzing the patient's cells

9. Which of the following antibodies still needs to be ruled out before the patient can be transfused?
   A. Anti-Lu^a
   B. Anti-K
   C. Anti-C^w
   D. None of the above

10. A physician would like to transfuse two units of red blood cells to this patient. Which of the following units should be selected for this patient?
   A. O negative
   B. A negative, Jk^a antigen negative red blood cells

C. O positive, Jk^a antigen negative red blood cells
D. B positive, Jk^a antigen negative red blood cells