FEATURED CASE #19-06; ANSWERS
(Case study by Jim Perkins, © 2019)

Indian Immunohematology Initiative

Questions

1. What is your interpretation of the plasma antibody? What about the antibody on the RBCs? Would you like to do additional testing based on what you see?

   The type-and-screen reveals the patient to be O neg with a positive antibody screen. On the plasma panel there are two cells reacting relatively weakly, and on first pass "everything is ruled out" as we say. Of note however, both reactive cells on the panel were listed as expressing HLA, so the plasma was adsorbed with Human Platelet Concentrate™ (HPC) which eliminated the reactivity with both the panel cells and the SCII, confirming that the antibody was anti-HLA (see Featured case #19-05).

   An eluate was performed because the DAT showed IgG coating the RBCs. The eluate contains allo-anti-Fy^a, which is consistent with her phenotype.

   The technologist elected to test the patient eluate against one additional donor cell sample as follows.

2. Why did the technologist perform the additional test? What is your diagnosis in this case? Why does the patient plasma give a different result than the eluate? Is this common?

   The technologist noted that two of the cells reacting with the eluate were Kp^a positive and elected to rule out a new anti-Kp^a that could have been present as well as the anti-Fy^a. Although the institution's SOP doesn't require ruling out anti-Kp^a, having two Kp^a positive cells reacting with the eluate, is a suspicious coincidence.

   This patient appears to have had a delayed hemolytic transfusion reaction (DHTR) with new anti-Fy^a on her RBCs after transfusion and a fall in her Hb level to below the pretransfusion level after just 8 days. What is different from the usual DHTR is that the new anti-Fy^a was not detected in the patient's plasma. Thus the new sample appears to have been drawn after the patient started making the antibody, presumably due to an anamnestic reaction, but before sufficient antibody had been made to "spill over" into the plasma, not having bound all of the available donor Fy^a antigen sites. Logically, such findings must occur for some time period in the course of many or most DHTRs, but it must usually be short as we commonly see DHTRs but do not often see this picture.

   Nineteen months later the anti-Fy^a was no longer detectable. Of note, had the anti-HLA not been detected the DAT would not have been done, and the DHTR wouldn't have been detected. The anti-HLA may or may not have been present in the original sample since antibody screening cells are not generally selected that have strong HLA expression.

Take home point

In a patient having a DHTR there may be a short period of time during which the new antibody is present on the RBCs but not in the plasma.