AIHA CASE #6, ANSWERS

Case study by Jim Perkins, M.D. (© 2009)

Indian Immunohematology Initiative

1. What antibody is present? Is this an autoantibody or an alloantibody? Why were the selected cells run?

The patient has a cold reactive anti-M. It is an autoantibody based on the positive autocontrol and the presence of M antigen on the patient's RBCs. The selected cells were run to rule out other cold-reactive allo-antibodies.

Cold-reactive autoanti-M is not rare, and cases associated with mild cold agglutinin disease are reported (Daniels, 2013, pg. 137)

2. Why was antibody identification performed in this case? Is that problem resolved?

There was an ABO discrepancy with weak reactions in the reverse ("serum") typing. Once the antibody was identified the discrepancy was resolved by warming the serum and cells prior to mixing (prewarmed technique) and demonstrating that direct agglutination was no longer detected.

3. Why might the DAT be negative? Can you relate this to any other serologic findings?

The antibody is cold-reactive and probably is a relatively low affinity, almost entirely composed of IgM which does not remain attached to the RBCs through the washing phase of the DAT and, in any case, would not react with the anti-IgG component of the Coombs' serum. Again however note that the autocontrol is positive.

For much of the time span during which these problems were accessioned our laboratory did not routinely perform an autocontrol with anti-body identification panels, choosing instead to do just the DAT. This problem demonstrates that the DAT and autocontrol may give different information, and we have reinstated use of the autocontrol with panels, repeating it if the test method is changed (e.g. with PEG/tube or enzyme panels).

4. How would you select RBCs for transfusion in this case?

This antibody is not be regarded as clinically significant. An anti-human globulin crossmatch without an immediate spin phase would likely be non-reactive and would ensure safe transfusion.

5. Can you relate the presence of these abnormalities to anything else in the patient's history?

The patient has myasthenia gravis, an autoimmune disease. Patients with RBC-reactive autoantibodies often have another autoimmune or lymphoproliferative disorder.