



Immune-Mediated Red Cell Destruction



Chapter summary

- Despite, or perhaps because of, advances in clinical practice, immune-mediated RBC destruction still has to be considered in transfusion, transplantation, and pregnancy.
- Almost all RBC antibodies have the potential to cause RBC destruction if the right conditions exist. In general, an antibody capable of causing RBC destruction *in vivo* reacts at 37°C by IAT, and is considered to be clinically significant.
- Some patients produce autoantibodies, directed against an antigen expressed on their own RBCs, which can lead to an increased rate of RBC destruction—an AIHA.
- As the population gets older, and as treatment improves, more people are treated for malignancies, and the number of patients with autoantibodies is increasing.
- Laboratory tests are employed pre-transfusion and transplant, and components selected to try to prevent *in vivo* RBC destruction, but an increasing number of stem cell and solid organ transplants are being given that are knowingly ABO and/or D incompatible and, of course, not typed for other RBC antigens.
- Although these problems are recognized and better understood, they have not been fully resolved, and so the need to investigate RBC antibodies, both allo and auto, will remain.