

## TECHNICAL CASE STUDIES

CASE	“ANSWER”	COMMENT: Teaching points
<b>ANTIBODY IDENTIFICATION (ABID)</b>		
ABID CASE #1	Anti-K	Straight-forward pattern of reactivity; single significant antibody; criteria for proof of ab. specificity
ABID CASE #2	Anti-E	Straight-forward pattern of reactivity; single significant antibody; criteria for proof of ab. specificity
ABID CASE #3	Anti-D	Straight-forward pattern of reactivity; single significant antibody; criteria for proof of ab. specificity
ABID CASE #4	Anti-c	Straight-forward pattern of reactivity; single significant antibody; selection of rule-out cells.
ABID CASE #5	Anti-Fy <sup>a</sup>	Straight-forward single antibody specificity with weak reactivity; importance of multiple techniques.
ABID CASE #6	Anti-Jk <sup>a</sup>	Confusing pattern due to weak antibody; importance of multiple techniques.
ABID CASE #7	Anti-S	Straight-forward pattern of reactivity; single significant antibody; selection of rule-out cells
ABID CASE #8	Anti-M cold-reactive	Non-straightforward problem, single antibody specificity; IN-significant antibody
ABID CASE #9	Anti-Le <sup>a</sup> & -Le <sup>b</sup>	Non-straightforward problem, multiple antibody specificities; IN-significant antibody
ABID CASE #10	Anti-Lu <sup>a</sup>	Single specificity; antibody against a low-frequency antigen
ABID CASE #11	Anti-D, D pos pt.	Anti-D in a patient with partial D
ABID CASE #12	Anti-E & -K	Multiple antibody problem; significant antibodies
ABID CASE #13	Anti-Fya & -S	Multiple antibody problem; significant antibodies
ABID CASE #14	Anti-Fy <sup>a</sup> & -V	Multiple antibody problem; one common, one against low freq. ag.
ABID CASE #15	Anti-E, -c, -Jk <sup>b</sup> & -K	Multiple antibody problem; most cells reactive
ABID CASE #16	Anti-Kp <sup>b</sup>	All cells reactive due to antibody against high frequency antigen; significant antibody
ABID CASE #17	Anti-JMH	All cells reactive due to antibody against high frequency antigen; IN-significant “HTLA”.
ABID CASE #18	Anti-Ch/Rg	Non-straightforward reactivity due to IN-significant “HTLA”
ABID CASE #19	Anti-Fy <sup>a</sup> + K + cold-auto	All cells reactive due to multiple antibodies, allo- and auto-
ABID CASE #20	Cold auto-antibody	Positive immediate spin crossmatch after a negative antibody screen
ABID CASE #21	Anti-Bg	Weak reactions against occasional cells
ABID CASE #22	Anti-Sd <sup>a</sup>	Variable reactivity against a high frequency antigen.
ABID CASE #23	Anti-f	Single complex Rh antibody specificity
<b>ABO DISCREPANCIES</b>		
ABO discrepancy #1	Anti-P1	ABO discrepancy due to unexpected, cold-reactive alloantibody
ABO discrepancy #2	AB with anti-A1	ABO discrepancy due to anti-A1 in an A2B patient
ABO discrepancy #3	Cold-reactive autoantibody	ABO discrepancy due to unexpected cold-reactive autoantibody
ABO discrepancy #4	Bruton’s agammaglobulinemia	ABO discrepancy due to missing expected antibodies
ABO discrepancy #5	A3 subgroup of group A	ABO discrepancy due to weak expression of antigen
ABO discrepancy #6	Group A recipient of group O transplant	ABO discrepancy due to hematopoietic cell (HPC) transplantation
ABO discrepancy #7	Acquired B antigen	ABO discrepancy due to unexpected antigen reactivity

<b>AUTOANTIBODIES</b>		
AIHA CASE #1	Warm auto-ab. with underlying <Jk <sup>a</sup>	Use of auto-adsorption to rule out allo-antibody underlying a warm-reactive autoantibody
AIHA CASE #2	Warm auto-ab. on the cells only	Warm auto-immune hemolytic anemia (WAIHA) without detectable antibody in the plasma
AIHA CASE #3	Warm auto-ab. with <C specificity	Warm-reactive autoantibody with obvious specificity for a blood group on the patient's cells
AIHA CASE #4	Warm auto-ab. mimicking <E	Warm-reactive autoantibody with obvious specificity for a blood group NOT on the patient's cells
AIHA CASE #5	Warm auto-ab. in Gel; non-reactive in LISS/IAT	Sensitivity of gel and PEG techniques for warm-autoantibodies; difficulty defining auto- vs. allo-antibody in a transfusion-dependent patient; usefulness of multiple techniques.
AIHA CASE #6	Cold auto-ab. with underlying <Fy <sup>a</sup>	Sensitivity of gel technique for cold-autoantibodies; use of different techniques to rule-out allo-ab.
AIHA CASE #7	Cold auto-ab. with <M specificity	Cold-reactive autoantibody with specificity for a blood group on the patient's cells
AIHA CASE #8	Cold auto-<I, non-reactive with patient's initial specimen	The importance of careful specimen collection for determining the thermal amplitude of a significant cold-reactive auto-antibody.
AIHA CASE #9	Positive DAT, non-reactive eluate	The differential diagnosis of a positive DAT with a negative eluate and rouleaux phenomenon
AIHA CASE #10	False negative DAT	The importance of testing a DAT performed by tube technique immediately and after 5 min. incubation
<b>HDFN (Investigation of antibodies found in pregnant women)</b>		
HDFN CASE #1	Anti-Fya	Confirmation of a previously-identified antibody; titration; antigen typing of the father
HDFN CASE #2	Passive anti-D due to RhIG	Expected findings after Rh immune globulin administration
HDFN CASE #3	Anti-Jk3	Identification of an antibody against a high frequency antigen; considerations for delivery.
HDFN CASE #4	Anti-M	Prozone phenomenon, clinically insignificant antibody in pregnancy
HDFN CASE #5	Anti-G	Recognition and importance of anti-G and its demonstration by adsorption. Adsorption controls.
<b>CLINICAL CASE STUDIES</b>		
<b>CASE TITLE</b>		<b>COMMENT: Teaching points</b>
<b>AUTOIMMUNE HEMOLYTIC ANEMIA (AIHA)</b>		
A Patient with a High Reticulocyte Count		Classic, severe warm autoimmune hemolytic anemia (WAIHA) with relapse after discontinuing steroids
A Blood Banker's Nightmare		Fatal WAIHA with emergency transfusion; auto-anti-SC1
A 6 Month Old Girl with Hemolytic Anemia		WAIHA in a child
Acute Hemolytic Anemia in a 15 year old		Cold autoimmune hemolytic anemia (CAIHA) due to autoanti-i associated with EBV infection
A New Panagglutinin in a Transfusion-Dependent Patient		Antibody against a high-frequency antigen (AnWj) mimicking a warm autoantibody in a transfusion – dependent patient
<b>HEMOLYTIC DISEASE OF THE FETUS AND NEWBORN (HDFN)</b>		
Everything You Need to Know About HDFN in One Case Study		As the title indicates regarding Rh disease.
HDFN Due to Anti-D and Anti-C		A case of Rh HDFN with sensitization due to the parent's IV drug use
Icterus Praecox		HDN with a negative maternal antibody screen due to an antibody against a low-frequency antigen.
Erythroblastosis without an Obvious Cause		HDN with a negative maternal antibody screen due to an antibody against a low-frequency antigen.
Another Case of Severe HDN with a Negative Maternal Antibody Screen		Severe ABO HDN.

### TRANSFUSION REACTION CLINICAL CASE STUDIES:

The Worst Pain I've Ever Had	A severe immediate hemolytic reaction (IHTR) due to patient misidentification resulting in an ABO mismatched transfusion.
Fatal IHTR due to an ABO Mismatch	An ABO mismatched transfusion with relatively mild but nonetheless significant clinical manifestations in an impaired patient
IHTR in a Patient with a Negative Antibody Detection Test	An IHTR due to an antibody directed against a low-frequency antigen
Fatal IHTR due to Anti-Di <sup>b</sup>	Fatal hemorrhage in a patient with an antibody against a high frequency antigen that caused an IHTR
A Febrile Reaction in a Woman with Anti-Fy <sup>a</sup>	An IHTR due to a non-ABO antibody caused by clerical error and presenting with fever
Hemolysis after Platelet Transfusion	A severe IHTR in a group A woman who received group O single donor platelets
Red Urine in a Recently Transfused Woman	A delayed hemolytic transfusion reaction (DHTR) due to anti-U as well as other antibodies
Hemoglobinuria in the Operating Room	Non-immune hemolysis of RBCs warmed in hot tap water mimicking an HTR.
Fever after Directed RBCs	A woman with a febrile, non-hemolytic reaction (FNHTR) due to transfusion of her son's RBCs
Transfusion Complicated by Shock	Transfusion-related anaphylaxis
Jaundice and Rash 24 Days after Cardiac surgery	Transfusion-associated graft-versus-host disease (TA-GVHD) in a NON-immunocompromised patient
A Transfusion-Related Respiratory Event	Fatal transfusion-related acute lung injury (TRALI)
Pulmonary Edema after Rapid Transfusion of FFP	Transfusion-associated circulatory overload (TACO) after 2 units of FFP

### DRUG-INDUCED IMMUNE HEMOLYTIC ANEMIA (DIIHA)

Hemolysis after Chemotherapy	Acute hemolytic reaction due to carboplatin-dependent antibody; initial findings mimicking AIHA
Fatal Hemolysis in a Woman 13 Days Postpartum	Fatal hemolysis after repeat administration of drug

### PATIENTS WITH SICKLE CELL DISEASE

Post-op, Post-Transfusion Painful Crisis in a Patient With Sickle Cell Disease	A DHTR due to anti-C + -E
Respiratory Failure in a Patient with Sickle Cell Disease	RBC exchange in a patient with multiple antibodies including anti-Js <sup>b</sup> identified with the help of AET treatment of panel RBCs

### CASE OF THE MONTH

#1. April '08	Pattern of anti-E "showing dosage"
#2. May '08	DHTR due to anti-Jk <sup>a</sup> in a patient with prior anti-K
#3. Feb '09	Identification of multiple antibodies including anti-c, anti-E, anti-K, and anti-Jk <sup>b</sup> .
#4. May '09	Anti-D in a Rh positive woman
#5. Aug '09	Anti-D and anti-K demonstrated by extended incubation
#6. Nov '09	A case of anti-E and anti-Mi <sup>a</sup>
#7 Nov '10	Investigation of a case with all cells reactive in initial testing due to anti-c, anti-Fy <sup>a</sup> , and anti-Jk <sup>a</sup> .