

ABID CASE #18 Case study by Jim Perkins, M.D. (© 2009)

History: This patient was a 36 year-old woman with a stage 4 gastro-intestinal stromal tumor (GIST) who was taking an experimental drug. On a routine clinic visit a hemoglobin of 8.5 was noted, and a type-and-screen was ordered. She had received 36 units of RBCs over the previous 3 years and received 21 units in the year in which the workup was done.

ABO and Rh Typing

<A	<B	A1 cells	B cells	6% alb	<D	<D/AHG	CCC	Interp
0	0	4+	4+		4+			

Antibody Screen

	Gel
OI	2+
OII	2+

Direct Antiglobulin Test (Immucor antisera)

	Poly	IgG	<C3
AHG	0		
5' inc.	0		
CCC	2+		

Initial Panel

Lot# 8RA167	Rh system							Kell						Duffy		Kidd		Xg	Lewis		MNSs					P	Lutheran		Other				
Cell	Rh	D	C	E	c	e	V	K	k	Kp ^a	Kp ^b	Js ^a	Js ^b	Fy ^a	Fy ^b	JK ^a	JK ^b	Xg ^a	Le ^a	Le ^b	S	s	M	N	PI	Lu ^a	Lu ^b	Typings	Cell	Gel			
1	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	0	0	0	+	0	+	0	+	+s	0	+	C ^w	1	0			
2	R1R1	+	+	0	0	+	0	0	0	0	+	0	+	+	+	0	+	+	0	+	+	0	+	0	+	0	+		2	2+			
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	+	+	+	0	+	+	0	+	0	+	0	+		3	w+			
4	Ror	+	0	0	+	+	0	0	+	0	+	0	+	0	0	+	0	0	0	0	0	+	+	0	+s	0	+		4	2+			
5	r'r	0	+	0	+	+	0	0	+	0	+	0	+	0	+	0	+	+	+	0	0	+	0	+	+	0	+		5	0			
6	r''r	0	0	+	+	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	0	+	0	+	+	0	+		6	1+			
7	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	+	+	0	0	+	+	0	+	+	0	+		7	2+			
8	rr	0	0	0	+	+	0	0	+	+	+	0	+	+	+	+	+	+	0	+	0	+	+	+	0	+	+		8	w+			
9	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	0	+	+	+	0	0	+	0	+	+	0	+		9	2+			
10	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	+	+	0	0	+	0	+	0	0	+		10	w+			
11	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	0	+	+	+	+	0	+	0	+	0	+	0	0	+		11	w+			
Patient																													AC				

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Additional cells

Lot# 8RB165		Rh system						Kell						Duffy		Kidd		Xg	Lewis		MNSs				P	Lutheran		Other Typings	Cell	Gel			
Cell	Rh	D	C	E	c	e	V	K	k	Kp ^a	Kp ^b	Js ^a	Js ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Xg ^a	Le ^a	Le ^b	S	s	M	N	P1	Lu ^a	Lu ^b						
12	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	0	+	+	0	+	+	+	0	+	+	0	+		12	2+			
13	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	+	+	0	+	0	+	+	+	+	+	0	+	13				
14	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	0	+	+	+	0	+	14					
15	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	0	+	+	+	0	+	0	+	+	+	+	0	+	15	2+				
16	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	+	0	+	0	+	0	+	0	+	0	0	+	16	w+				
17	R2R2	+	0	+	+	0	0	+	+	0	+	0	+	+	+	0	+	+	0	+	+	+	+	+	+	0	+	17					
18	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	0	+	+	0	+	0	+	C ^w	18				
19	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	+	+	0	+	+	0	+	19					
20	RzR1	+	+	+	0	+	0	0	+	0	+	0	+	+	+	+	+	+	0	+	+	+	0	+	0	+	20						
21	r'r	0	+	0	+	+	0	0	+	0	+	0	+	+	0	+	+	+	0	+	+	0	+	0	+	0	+	21					
22	R1R1	+	+	0	0	+	0	+	0	0	+	0	+	+	+	+	+	+	0	+	0	+	0	+	+s	0	+	22	2+				
Patient																												AC					

Special tests (“√” indicates that Coombs’ control cells reacted)

	LISS				Ficin tx'd RBCs			AET tx'd RBCs				PEG	
	IS	RT	37°, 30'	AHG	IS	37°, 30'	AHG	IS	37°, 30'	AHG	anti-k*	AHG	
OI	0	0	0	0 [√]	0	1+	0 [√]	1+	0	0 [√]	0 [√]	0 [√]	
OII	0	0	0	vw+	0	1+	0 [√]	1+	0	vw+		vw+	
Auto	0	0	0	0 [√]	0	1+	0 [√]						

Titration

2 drops diluted pt. plasma, 1 drop saline-susp. RBCs, read at AHG phase								Titer
	1:1	1:2	1:4	1:8	1:16	1:32	1:64	
OII	w+	w+	vw+	vw+	vw+	vw+	0 [√]	2

Plasma neutralization test

Pt. plasma diluted as above and incubated 1:1 with pooled normal plasma, read at AHG								
OII	0 [√]	0 [√]	0 [√]	0 [√]	0 [√]	0 [√]	0 [√]	0
Dilution control (Saline substituted for pooled normal plasma)								
OII	w+	w+	vw+	vw+	0 [√]	0 [√]	0 [√]	2

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Antigen Phenotype

	C	E	c	e	K	k	Kp ^a	Js ^a	Fy ^a	Fy ^b	JK ^a	JK ^b	Le ^a	Le ^b	S	s	M	N	P1	I	H	A ₁			
Patient	mf	3+	3+	3+	0				3+	3+	3+	3+	0	4+	3+	3+	4+	4+	4+						
Pos control	3+	4+	4+	4+	3+				3+	3+	3+	3+	3+	3+	3+	3+	4+	4+	4+						
Neg Control	0	0	0	0	0				0	0	0	0	0	0	0	0	0	0	0	0					

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1. What can be said about the nature of this antibody(ies) based on the reactivity of the plasma with panel cells and the titration result?
2. The AHG phase reactivity of this plasma was destroyed by ficin treatment of the RBCs but resistant to AET? How does this narrow the possibilities? (See appendix 3, SOP #221.)
3. What does the plasma neutralization test show? What is the identity of this antibody?
4. Would donor RBCs reactive with this antibody cause hemolytic transfusion reactions? Has any other type of reaction been associated with this antibody specificity?