

ABID Case #20

Case study by Jim Perkins, M.D. (© 2006)



History: The patient was a 30 year old pregnant woman, G7P6 with a history of anti-D formation, noted 5 years earlier at the time of transfusion of 2 units of RBCs. She was a previous emigrant from Mexico. A routine prenatal workup was performed with the following results:

ABO and Rh Typing

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

Antibody Screen (LISS tube method)

Direct Antiglobulin Test (tube method)

	I.S.	37°	AHG	CCC		Poly	IgG	<C3
SCI	0	0	1+		AHG	0		
SCH	0	0	3+		CCC	2+		

Raw Serum panel

Lot #0320	Rh	MNSs						P	Lewis		Lutheran		Kell				Duffy		Kidd		Xg	LISS/Tube					FICIN/Tube					
Cell	Rh	D	C	E	c	e	V	M	N	S	s	PI	Le ^a	Le ^b	Lu ^a	Lu ^b	K	k	Kp ^a	Js ^a	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Xg ^a	Cell	IS	RT	37	AHG	37	AHG
1	r'r	0	+	0	+	+	0	+	+	+	+	+	+	0	0	+	0	+	0	0	+	0	+	+	+	1	0	0	0	0 ^v	0	0 ^v
2	R1R1w	+	+	0	0	+	0	+	+	0	+	+	+	0	0	+	0	+	0	0	+	+	0	+	+	2	0	0	0	1+	3+	3+
3	R1R1	+	+	0	0	+	0	+	+	0	+	+	0	0	0	+	0	+	0	0	0	+	+	0	+	3	0	0	0	1+	3+	3+
4	R2R2	+	0	+	+	0	0	+	+	+	+	0	+	0	0	+	0	+	0	0	+	+	+	+	+	4	0	0	0	2+	3+	3+
5	r''r	0	0	+	+	+	0	+	0	+	0	0	+	0	+	+	0	+	0	0	+	+	+	+	+	5	0	0	0	vw+	3+	w+
6	rr	0	0	0	+	+	+	0	+	0	+	+	0	+	0	+	0	+	0	0	0	0	+	+	+	6	0	0	0	0 ^v	0	0 ^v
7	rr	0	0	0	+	+	0	0	+	+	+	0	0	+	0	+	+	+	0	0	+	+	0	+	+	7	0	0	0	0 ^v	w+	0 ^v
8	rr	0	0	0	+	+	0	+	+	0	+	+	0	0	0	+	0	+	0	0	0	0	+	0	+	8	0	0	0	0 ^v	w+	0 ^v
9	rr	0	0	0	+	+	0	0	+	0	+	+	+	0	0	+	0	+	0	0	0	+	+	+	+	9	0	0	0	0 ^v	w+	0 ^v
10	rr	0	0	0	+	+	0	+	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+	0	0	10	0	0	0	0 ^v	w+	0 ^v
11	rr	0	0	0	+	+	0	+	0	+	+	0	+	+	0	+	0	+	0	0	0	+	+	0	+	11	0	0	0	0 ^v	w+	0 ^v
AC																										AC	0	0	0	0 ^v	w+	0 ^v

Selected cells

	Rh	MNSs						P	Lewis		Lutheran		Kell				Duffy		Kidd		Xg	LISS/Tube					FICIN/Tube						
Cell	Rh	D	C	E	c	e	V	M	N	S	s	PI	Le ^a	Le ^b	Lu ^a	Lu ^b	K	k	Kp ^a	Js ^a	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Xg ^a	IS	RT	37	AHG	CC	37	AHG	CC
	r''r	0	0	+	+	+	0	+	0	+	+	0	0	+	0	+	0	+	0	0	0	+	+	+	+	0	0	0	vw+	2+	3+	w+	
	r''r	0	0	+	+	+	0	+	0	+	0	+	0	+	0	+	0	+	0	0	+	+	+	+	0	0	0	0	vw+		3+	w+	

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Antibody screening; alternate methods

Cells	Saline/tube			Albumin/tube				Ficin tx'd cells		
	IS	30°RT	4°	IS	30°37°C	AHG	CCC	30°37°C	AHG	CCC
SCI	0	0	3+	0	0	vw+		3+	3+	
SCII	0	0	4+	0	0	3+		3+	3+	
Auto	0	0	4+	0	0	0	2+	0	0	2+
O Cord	0	0	0							

Antigen Phenotype

	Rh system				Kell				Duffy		Kidd		Lewis		MNSs				PI	I	H	A ₁	
	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					
Patient	0	0	4+																				
Pos control	3+	3+	3+																				
Neg Control	0	0	0																				

Additional Testing

	Anti-D, group IV*		Anti-Go ^a	
	AHG	CC	AHG	CC
Patient cells	0	2+	2+	
Positive Control	w+ (R1R1)		w+ (Go ^a pos)	
Negative control	0	2+	0	2+

*Anti-D made by an individual with a "group IV" partial D antigen

Questions:

1. What antibody(ies) appears to be present? Is this alloantibody or autoantibody? How is this possible given the patient's blood type?
2. How could your hypothesis be confirmed further?
3. Discuss the variation in reaction strength with different test systems and antigen positive phenotypes.
4. Is this patient at risk for hemolytic transfusion reactions? Is her infant at risk for HDFN?