

AIHA CASE #1 Case Study by Jim Perkins MD (©, 2009)

History: The patient was a 51 year old woman with a history of warm autoimmune hemolytic anemia who was referred to a hematologist at our institution for a second opinion and management of her disease.

Two months earlier she had been admitted to another hospital with fatigue, dyspnea on exertion, and cold sensitivity. Her hemoglobin level was 6.5 gm/dL. She was transfused and started on prednisone, 40 mg/d. The latter was tapered over 3 weeks and then discontinued, at which time her hemoglobin level was 11.7 gm/dL.

Four days previously she was again feeling tired with a hemoglobin of 9.6 gm/dL, and she had been restarted on prednisone, 20mg/D.

Physical examination was essentially normal.

Notable laboratory findings included:

Hgb/hct (not performed; at lower limit of normal 11 days later)

Reticulocytes = 12.5% (nml = 0.5 - 3.3%)

Absolute reticulocytes = 347,000/mm³ (nml = 15,000 - 127,000)

Total bilirubin = 1.6 (nml = 0.1 - 1.4)

LDH = 311 (nml = 0 - 200)

Haptoglobin = 190 (nml = 36.0 - 195.0)

Immunohematologic testing was ordered.

ABO and Rh Typing

<A	<B	A1 cells	B cells	6% alb	<D	<D/AHG	CCC	Interp
0	0	4+	3+		4+			O, pos

Antibody Screen

Direct Antiglobulin Test

	Gel	I.S.	RT	4°C		Poly	IgG	<C3
OI	3+	0	0	2+	AHG	3+	3+	2+
OII	3+	0	0	3+	CCC			
AUTO		0	0	3+				
Cord		0	0	2+				

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Initial Panel

8RA178		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	P1	Lu ^a	Lu ^b	Typings	Cell	Gel				
1	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	+	+	0	+	+	+	+	0	+	0	+	C ^w	1	3+				
2	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	+	+	+	+	+	0	0	0	+	+	+	0	+	+		2	2+				
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+	+	0	+		3	2+				
4	Ror	+	0	0	+	+	+	0	+	0	+	0	+	0	0	+	+	+	0	0	+	+	+	+	+	0	+		4	2+				
5	r'r	0	+	0	+	+	0	0	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	+	+	0	+		5	2+				
6	r''r	0	0	+	+	+	0	0	+	0	+	0	+	+	+	+	+	+	0	+	+	0	+	+	0	0	+		6	2+				
7	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	+	+	0	+	+	+	+	+	+	0	+		7	2+				
8	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	0	+	+	0	+	0	+		8	2+				
9	rr	0	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	+		10	2+				
11	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	+	+	+	0	0	+	0	+	+	0	+		11	2+				
Patient																												AC						

Eluate and Autoadsorption

Lot #48796		Rh system						Kell						Duffy		Kidd		Lewis		P	MNSs				Lutheran		Xg	Other		Eluate	3x Ads serum*		
Cell	Rh	D	C	c	E	e	V	K	k	Kp ^a	Kp ^b	Js ^a	Js ^b	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Le ^a	Le ^b	P1	M	N	S	s	Lu ^a	Lu ^b	Xg ^a	Typings	Cell	AHG	AHG		
1	RzR1	+	+	0	+	+	0	0	+	0	+	0	+	+	0	0	+	+	+	+	+	0	0	+	0	+	0	+		1	3+	0	
2	R1wR1	+	+	0	0	+	0	+	+	0	+	0	+	0	+	+	+	0	+	+	0	+	0	+	0	+	0	C ^w	2	3+	2+		
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	+	+	0	+	+	+	+	+	+	+	+	+		3	3+	2+		
4	Ror	+	0	+	0	+	+	0	+	0	+	0	+	0	0	+	0	0	+	+	+	0	+	0	0	+	0		4	3+	2+		
5	r'r	0	+	+	0	+	0	0	+	0	+	0	+	+	0	+	+	+	+	+	0	0	+	0	+	0		5	3+	2+			
6	r''r	0	0	+	+	+	0	0	+	0	+	0	+	+	0	0	+	0	+	+	+	+	0	+	0	+		6	3+	0			
7	rr	0	0	+	0	+	0	+	+	0	+	0	+	0	+	0	+	0	+	+	0	+	+	+	0	+		7	3+	0			
8	rr	0	0	+	0	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	+	+	+	0	+	Yt ^{b+}	8	3+	2+			
9	rr	0	0	+	0	+	0	0	+	+	+	0	+	+	0	+	0	0	+	0	+	+	+	+	0	+	Yt ^{b+}	9	3+	2+			
10	rr	0	0	+	0	+	+	0	+	0	+	0	+	+	0	+	0	0	0	w+	+	0	0	+	0	+		10	3+	2+			
11	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	+	+	0	0	+	+	0	+	0	+	Yt ^{b+} , I-	11	3+	2+			
Patient																												AC					

* 2 drops adsorbed serum, 1 drop RBCs, tested at AHG phase

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- 1.** What antibody(ies) are present? Is this allo- or auto-antibody?
- 2.** What does the auto-adsorption demonstrate? Is this auto-adsorption result valid?
- 3.** No antigen phenotype(s) was done. What is the problem(s) for performing an antigen phenotype in such a case? Could one have been done? How?