

ABID CASE #28

(Case study by Jim Perkins, © 2009)



History: This patient was a 77 year old man on chronic renal dialysis who takes aspirin and was admitted for hematochezia. He had been transfused multiple times.

ABO and Rh Typing

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

Antibody Screen

	Gel	HPC* ads.
SCI	0	0
SCII	1+	w+

Direct Antiglobulin Test tube method

	Poly	IgG	<C3
AHG	0		
CCC	2+		

*HPC = Human platelet concentrate

Initial Plasma Panel

Lot# 8RA188	Rh system	Kell											Duffy		Kidd		Xg	Lewis		MNSs				P	Lutheran		Other Typings	Cell	Gel	HPC* ads.	
Cell	Rh	D	C	E	c	e	V	K	k	Kp ^a	Kp ^b	Js ^a	Gel	Fy ^a	Fy ^b	Jk ^a	Jk ^b	Xg ^a	Le ^a	Le ^b	S	s	M	N	PI	Lu ^a	Lu ^b				
1	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	0	+	0	+	+	0	+	C ^w	1	0	
2	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	+	0	+	0	0	0	0	+	0	+	+	+s	0	+		2	0	
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	+	0	+	+	0	+	0	+	0	+	+	0	+		3	0	
4	Ror	+	0	0	+	+	0	0	+	0	+	0	+	0	0	+	0	+	0	0	0	+	+	+	+s	+	+		4	vw+	0
5	r'r	0	+	0	+	+	0	+	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	0	+s	+	+		5	vw+	0
6	r''r	0	0	+	+	+	0	0	+	0	+	0	+	0	+	+	0	+	+	0	0	+	0	+	0	0	+		6	0	
7	rr	0	0	0	+	+	0	+	+	0	+	0	+	0	+	+	+	+	0	+	0	+	+	+	+s	0	+		7	0	
8	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	+	0	+	0	+	0	+	+	0	+	+s	0	+		8	0	
9	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	0	0	+	0	+	0	+	0	+s	0	+		9	0	
10	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	0	+	0	0	0	+		10	0	
11	R1wR1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	0	+	0	+	+	0	+	C ^w	11	vw+	0
Patient																												AC	0		

*HPC = Human platelet concentrate

Rh phenotype

	Rh system				Kell				Kidd		Duffy		Lewis		MNSs							
	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	PI	I	H	A ₁
Patient	4+	0	0	4+																		

*Patient RBCs are not phenotyped for e if the E antigen is not expressed.

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Selected cells; PEG/tube method

Lot #03475		Rh system						Kell						Duffy		Kidd		Lewis		P	MNSs				Lutheran		Xg	Other Typings	PEG		
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	PI	M	N	S	s	Lu ^a	Lu ^b	Xg ^a		Cell	AHG	CC
2	R1wR1	+	+	0	0	+	0	+	+	0	+	0	+	0	+	0	+	0	+	+	+	0	0	+	0	+	0	C ^w , Co ^{b+}	2	0	2+
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	0	+	+	0	+	+	+	+	+	0	+	0	+	+		3	0	2+
4	Ror	+	0	+	0	+	+	0	+	0	+	0	+	0	+	+	+	0	+	+	0	+	0	0	0	+	+		4	0	2+
5	r ⁺ r	0	+	+	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	+	0	0	+	+		5	0	2+
7	rr	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	+	0	+	0	+	+	+	+	+	+	+		7	0	2+
9	R1R1	+	+	0	0	+	0	+	+	0	+	0	+	+	0	0	+	0	+	+	0	+	0	+	0	+	+		9	0	2+
16	rr	0	0	+	0	+	0	0	+	+	+	0	+	0	+	+	0	+	0	+	+	+	0	+	+	+	0		16	0	2+
Patient																												AC			

Questions:

1. What is the probable identity of this antibody? (Hint: look up the use of the IMMUCOR reagent HPC™.)
2. Is any further workup needed to prove it? Are there any other methods that could have been used other than HPC neutralization of the antiserum?
3. What is the probable source of the immunizing stimulus in this case?
4. Does this antibody cause hemolytic transfusion reactions? How would we select compatible RBCs for this patient? Do these antibodies cause hemolytic disease of the fetus and newborn? What other transfusion reactions are caused by anti-HLA?
5. Are there any other transfusion-related problems for which this patient might be at risk?
6. What is the biochemical nature of the antigen?