

**HDN ABID CASE #3** Case Study by Jim Perkins MD (©, 2009)

**History:** The patient is a 33 year old pregnant woman of Philippine ethnic origin referred to a maternal-fetal medicine specialist because of a positive antibody screen on prenatal testing. Repeat testing was ordered to confirm the other laboratory's results.

**ABO and Rh Typing**

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

**Antibody Screen**

	Gel
OI	(see panel)
OII	

**Direct Antiglobulin Test**

	Poly	IgG	<C3
AHG	0		
CCC	2+		

**Initial Panel**

Lot #: 8RA181	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 <sup>a</sup>	Kp <sup>b</sup>	Js <sup>a</sup>	Js <sup>b</sup>	Fy <sup>a</sup>	Fy <sup>b</sup>	JK <sup>a</sup>	JK <sup>b</sup>	Xg <sup>a</sup>	Le <sup>a</sup>	Le <sup>b</sup>	S	s	M	N	P1	Lu <sup>a</sup>	Lu <sup>b</sup>						
1	R1wR1	+	+	0	0	+	0	+	+	0	+	0	+	+	0	+	+	0	0	+	0	+	+	0	+	0	+	+	C <sup>w</sup>	1	3+		
2	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	+	0	+	0	+	0	0	0	+	0	+	+s	0	+		2	3+			
3	R2R2	+	0	+	+	0	0	0	+	0	+	0	+	+	+	0	+	0	0	0	+	0	+	+s	+	+		3	3+				
4	Ror	+	0	0	+	+	0	0	+	0	+	0	+	+	0	+	0	+	0	+	+	0	+	0	0	0	+		4	3+			
5	r'r	0	+	0	+	+	0	0	+	0	+	0	+	+	0	+	+	+	+	0	+	+	+	+	+	0	+		5	3+			
6	r''r	0	0	+	+	+	0	0	+	+	+	0	+	0	+	0	+	+	0	+	+	+	+	+	+	0	+		6	3+			
7	rr	0	0	0	+	+	+	+	+	0	+	0	+	0	+	0	+	+	0	+	0	+	+	+	+	0	+		7	3+			
8	rr	0	0	0	+	+	0	0	+	0	+	0	+	+	0	+	0	0	+	0	0	+	0	+	+	0	+		8	3+			
9	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	+	0	+	+	0	+	+s	0	+		9	3+				
10	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	+	0	+	0	+	0	+	+	0	0	0	+		10	3+			
11	R1R1	+	+	0	0	+	0	0	+	0	+	0	+	0	+	+	0	+	+	0	+	0	+	0	+	0	+		11	3+			
Patient																												AC					

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**Antigen Phenotype**

	Rh system				Kell				Duffy		Kidd		Lewis		MNSs																				
	C	E	c	e	K	k	Kp <sup>a</sup>	Js <sup>a</sup>	Fy <sup>a</sup>	Fy <sup>b</sup>	Jk <sup>a</sup>	Jk <sup>b</sup>	Le <sup>a</sup>	Le <sup>b</sup>	S	s	M	N	P1	I	H	A <sub>1</sub>													
Patient	4+	4+	4+	4+	0				2+	0	0	0			1+	2+	0	3+																	
Pos control	4+	4+	3+	3+	2+				2+	2+	2+	3+			3+	3+	2+	2+																	
Neg Control	0	0	0	0	0				0	0	0	0			0	0	0	0																	

Lot #08068		Rh system				Kell				Duffy		Kidd		Lewis		P	MNSs				Lutheran		Xg	Other Typings	LISS					Dilute/allods. plasma*				
Cell	Rh	D	C	c	E	e	K	k	Kp <sup>a</sup>	Kp <sup>b</sup>	Js <sup>a</sup>	Js <sup>b</sup>	Fy <sup>a</sup>	Fy <sup>b</sup>	Jk <sup>a</sup>	Jk <sup>b</sup>	Le <sup>a</sup>	Le <sup>b</sup>	P1	M	N	S	s		Lu <sup>a</sup>	Lu <sup>b</sup>	Xg <sup>a</sup>	Cell	IS	37°	AHG	CC	AHG	CC
1	RzR1	+	+	0	+	+	0	+	0	+	0	+	+	+	0	+	0	+	0	+	+	0	+	0	+	0	+	1	0	0	3+		0	2+
2	R1wR1	+	+	0	0	+	+	+	0	+	0	+	0	+	+	+	0	+	+	0	+	0	+	0	+	0	+	2	0	0	3+		0	2+
3	R2R2	+	0	+	+	0	+	+	0	+	0	+	0	+	+	0	0	+	0	+	0	+	0	0	+	0	+	3	0	0	3+		0	2+
4	Ror	+	0	+	0	+	0	+	0	+	0	+	0	0	+	0	0	+	+	+	0	0	0	0	+	+	4	0	0	3+		0	2+	
5	r'r	0	+	+	0	+	0	+	0	+	0	+	+	0	+	+	0	+	+	+	0	0	+	0	+	0	+	5	0	0	3+		0	2+
6	r''r	0	0	+	+	+	0	+	0	+	0	+	+	0	0	+	0	+	+	+	0	0	+	0	+	0	+	6	0	0	3+		0	2+
7	rr	0	0	+	0	+	0	0	+	0	+	0	+	0	+	0	+	0	+	0	+	0	+	0	+	+	7	0	0	3+		0	2+	
8	rr	0	0	+	0	+	0	+	0	+	0	+	+	0	+	0	0	0	+	+	0	0	+	0	+	+	8	0	0	3+		0	2+	
9	rr	0	0	+	0	+	0	+	0	0	+	+	0	+	+	0	0	0	0	+	0	0	+	0	+	+	9	0	0	3+		0	2+	
10	rr	0	0	+	0	+	0	+	0	+	0	+	+	0	+	0	0	+	+	+	0	0	+	0	+	+	10	0	0	3+		0	2+	
11	R1R1	+	+	0	0	+	0	+	0	+	0	+	+	0	+	+	+	0	0	+	+	0	+	0	+	+	11	0	0	3+		0	2+	
Patient																											AC	0	0	0	2+	0	2+	

\* Plasma alladsorbed x3 on a ficin-treated, Jk(a+,b+), K neg, group O RBC, and diluted 2:1

### **HDN ABID CASE #3**

1. What is the probable identity of this antibody? What is the relevance of the patient's ethnic origin?
2. Is any further workup needed to prove it? What does the alloadsorption study demonstrate?
3. Does this antibody cause hemolytic transfusion reactions? HDN?
4. How might we find compatible blood for this patient?
5. What is the possible genetic basis of this patient's phenotype?
6. What is the biochemical nature of the antigen? Are there any health consequences of this phenotype?