Which Way Do We Go?

A Case Study

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Patient Info

1st presented: 2012

Age: 73

History: A positive; anti-Jka (JK1), last transfused 10 days earlier.

Race: African American

Diagnosis: GI BLEED/ Anemia

HGB: 6.1g/dL

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Hospital Testing

Hospital Results:

- A positive (previous anti-Jka)
- Pan reactive plasma at AHG in gel (3+)
- Auto Control: Neg

Where do we go from here…

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Initial Testing

A positive DAT Negative

Cell	D	C	c	E	e	K	k	Fya	Fyb	Jka	Jkb	M	N	S	s	Gel	Ficin	LISS
1	+	+	0	0	+	0	+	0	+	0	+	+	+	0	+	3+	4+	2+
2	+	+	0	0	+	+	+	+	+	+	0	0	+	0	+	3+	4+	2+
3	+	0	+	+	0	0	+	0	+	+	+	+	+	+	+	3+	4+	2+
4	+	0	+	0	+	0	+	0	0	+	0	0	+	0	+	1+	4+	1+
5	0	+	+	0	+	0	+	+	0	+	+	+	0	0	+	3+	4+	2+
6	0	0	+	+	+	+	+	0	+	+	+	0	+	0	+	3+	4+	2+
7	0	0	+	0	+	+	+	0	+	+	+	+	+	+	0	3+	4+	2+
8	0	0	+	0	+	0	+	+	0	+	0	+	0	+	0	3+	4+	2+
9	0	0	+	0	+	0	+	0	+	0	+	+	+	0	+	2+	4+	2+
10	+	+	0	0	+	+	+	0	+	0	+	0	+	0	+	3+	4+	2+
AC																0	0	0√

What do we know?

Pan reactive

Not Auto

Not destroyed by ficin

African American

Previous anti-Jka

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What do we still need to determine?

What is causing the pan- reactivity?

Is it Clinically significant?

How do we determine the specificity?

How do we rule out?

What do we do next??

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Next Steps

Cell	D	C	c	E	e	K	k	Fya	Fyb	Jka	Jkb	M	N	S	s	Gel	Ficin
1	+	0	+	+	0	0	+	0	+	0	+	+	+	+	+	3+	4+
2	+	+	0	0	+	+	0	+	+	0	+	0	+	0	+	3+	4+
3 U-	+	0	+	+	0	0	+	0	+	0	+	+	+	0	0	3+	4+
4	+	0	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0
5 Lea-b-	0	+	+	0	+	0	+	+	0	0	+	+	0	0	+	3+	4+
6 Sla-	0	0	+	+	+	+	+	0	0	0	+	0	+	0	+	0	0

Patient Phenotype Retics										
C	c	E	e	K	Fya	Fyb	Jka	Jkb	S	s
3+	3+	0	4+	0	0	0	0	1+mf	0	3+

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Answers? Or just more questions?

Fya-b- cells non-reactive

Phenotype- Jkb mf? Even after cell separation

More investigation…

More and more and more testing…

Sel. Cells	D	C	c	E	e	K	k	Fya	Fyb	Jka	Jkb	M	N	S	s	gel	ficin
1	+	0	+	0	+	0	+	0	0	0	+	0	+	0	+	0	0
2	+	0	+	0	+	+	+	0	0	0	+	0	+	0	+	0	0
3	+	0	+	0	+	0	+	0	0	0	+	+	0	+	+	0	0

Patient Phenotype Molecular										
C	c	E	e	K	Fya	Fyb	Jka	Jkb	S	s
+	+	0	+	0	0	0	+	+	+	+

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Molecular testing

Molecular testing showed several discrepancies…

Jka- (serologic) Jka+ (molecular)

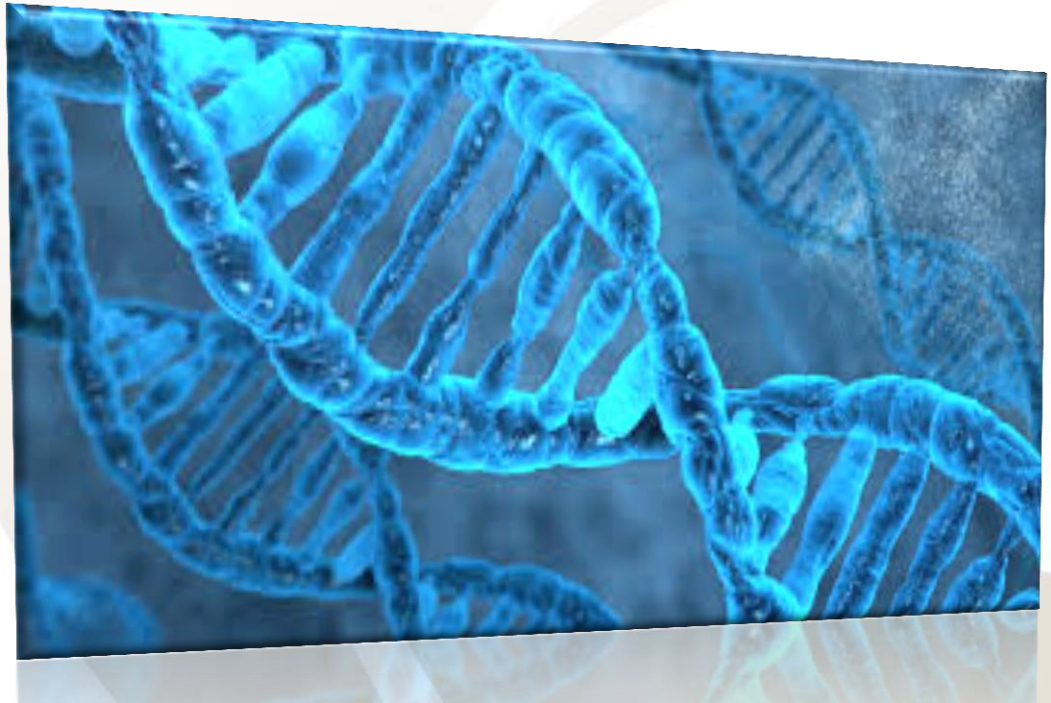
Sent for complete genotype analysis of JK gene

S- (serologic) S+ (molecular)

Investigation showed that antisera used was unable to detect some S+s+. Repeat with anti-S antisera from a different manufacturer was S+.

JK Molecular Analysis

An undocumented mutation at G263X would introduce a stop codon in exon 8 of the JK gene. This would alter translation and effect production of the Jk antigens, leading to unknown expression.



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Antibody Identification

Appears to be antibody to a high frequency in Fy blood group

FY3

Present on Rh Null

FY5

Absent on Rh Null

FY6

Only murine monoclonal antibody

Conclusions

Test Rh Null cell to differentiate

Rare Cell-

Used differential adsorption of anti-FY3/5 to RULE OUT

Anti-Fy3/Fy5

Give Fya-b- red cell products (also Jka-)

About 1.4% of the population

Aftermath…

Patient also has made;

Cold autoantibody

Anti-Leb 07/2016

Anti-Cw 07/2016

Anti-Lea 10/2016

Anti-Fya 10/2016

Anti-E 11/2016

Receives E-, Cw-, Fya-, Fyb-, Jka-

0.01% population

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