



Sullivan
Nicolaides
PATHOLOGY
Quality is in our DNA

Antibody investigation & challenges facing a regional lab

Presented by Jackson Karas



Background Information

- Patient presents for a G+H for TKR.
- Sample collected one day before surgery.
- History of myelodysplastic syndrome (MDS).
- Special requirement blood products due to the MDS.
- Patient has a history of auto antibody and historical antibody
- Transfusion dependent.
- Transfused by multiple institutions.

Patient Results

Result verification - User: snpjxk7 BIO-RAD

Patient / sample data
Sample: [REDACTED] Tested by: [REDACTED]
Direct Antiglobulin test (IAT) 5053 Test time: [REDACTED] Verified by: [REDACTED]
Sample comment:

DAT poly: 50531.1107/18.02/561039
Comment: 1

Current Results **Crossmatch** **Antibody panels** **Previous results**

1	2	3	4	5	6	4	1	2	3
Anti-A	Anti-B	Anti-D VI	CII	A1	B	DAT poly	IgG	C3d	CII
-	-	++++	-	++++	++++	-	+/- *	-	-

1	2	3	6	6
I	II	III	AC	AC
+	+*	+/-*	-	-

Result
0 Rh D positive ABS positive AC negative DAT positive

ABO: 0 ABS: ABS positive Known Antibodies (text):
Phenotype: DAT: DAT positive
Rhesus-D: Rh D positive Auto ctrl.: AC negative Antibodies / other antigens:
Kell: Details ...

Accept all Save Cancel



Patient / sample data: [Redacted] Tested by: [Redacted]
Identification: 11 test cells IAT+ AC (5053) Test time: [Redacted] Verified by: [Redacted] Sample comment: [Redacted]

50531.1107/18.02/561040
Comment: [Redacted]

Current Results Crossmatch Antibody panels Previous results

1	2	3	4	5	6	7	8	9	10	11
++	+	++	++	++	++	+	+	+	+*	-

Result:
0 Rh D positive ABS positive AC negative DAT positive

ABO: 0 ABS: ABS positive Known Antibodies (text):
Phenotype: DAT: DAT positive
Rhesus-D: Rh D positive Auto ctrl.: AC negative Antibodies / other antigens:
Kell: Details ...

Accept all Save Cancel

Outcome

- Positive for cells 1-10.
- Last transfusion performed by the local public hospital.
- Auto antibody present.
- Due to transfusion by other labs, samples to be sent to ARCBS for investigation for underlying allo-antibodies (underneath auto).



Obstacles

- Conversation with surgeon, was unreceptive to recommendations.
- Regional lab, small amount of blood stock.
- Delay with referring samples to ARCBS, and receiving specialised stock.
- Limited antibody investigation resources.

RBC Report



QLD - RED CELL REFERENCE LABORATORY
Ground Floor
44 Musk Ave
KELVIN GROVE QLD 4059
P: 07 3838 9493
F: 07 3838 9410

Client: SULLIVAN NICOLAIDES - Bowen Hills Laboratory
Blood Bank Department
24 Hurworth Street
BOWEN HILLS QLD 4006

P: 07 3377 8700
F: 07 3377 8555

RED CELL REFERENCE REPORT

Blood Service Id	UR/UMNR/MRN #
Surname	Your Reference #
Given Name	Antibody Register # : N/A
Date of Birth	Tests Requested : Antibody Identification
Gender : Female	Report Date : 17-Jan-2017

The plasma sample contained:

Anti-Sd(a) reactive in the saline and IAHG tests;

An auto reactive antibody detected in the enzyme IAHG tests.

The plasma was inhibited with guinea pig urine and then antibody screened using a three(3) cell panel.

No irregular antibodies detected in this screen, indicating no other antibodies detected in the IAHG tests.

Updated report 17/01/2017.

Attached HEA Beadchip predicted phenotypes.

Comments:

Specimen(s) Received:

Specimen Type	Specimen Collection Date	Specimen Count
EDTA	11-Jan-2017	1



Blood Service Id	UR/UMNR/MRN #
Surname	Your Reference #
Given Name	Antibody Register #
Date of Birth	Tests Requested
Gender	Report Date : 17-Jan-2017

Predicted Phenotype by DNA Analysis :

Blood Group System	Antigen	Predicted Phenotype
Rh	c	+
	C	+
	e	+
	E	0
	V	0
	VS	0
Kell	- K	0
	k	+
	Kpa	0
	Kpb	+
	Jsa	0
	Jsb	+
Kidd	Jka	+
	Jkb	0
Duffy	Fya	+
	Fyb	+
MNS	M	+
	N	+
	S	0
	s	+
	U	+
Lutheran	Lua	0
	Lub	+
Diego	Dia	0
	Db	+
Colton	Coa	+
	Cob	+
Dombrock	Doa	0
	Dob	+
	Hy	+
	Joa	+
LW	Lwa	+
	LWb	0
Scianna	Sc1	+
	Sc2	0

Result reported	Interpretation
+	Positive
0	Negative
[+]	Possible (C/c)es haplotype
[0]	0 (GATA silencing mutation present)
PV	Possible Variant
var	U variant (S Silencing mutation)
w	Weak (Fyx allele detected)

Transfusion Requirements for Anti-Sd^a

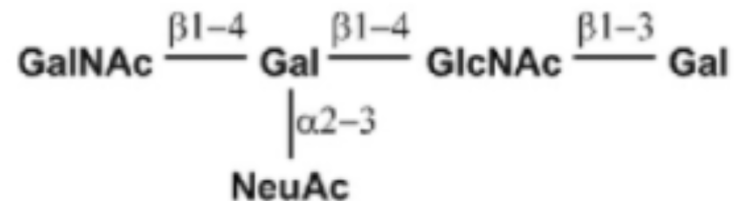
- Antibody is considered clinically insignificant.
- A manual cross-match to determine compatibility (Least incompatible).
- Transfusion requirements for this patient as per Red Cross, irradiated K- JK^b – and S-.

- N-acetylgalactosamine (GalNAc) is the immuno dominate sugar in Sd^a.
- Sd^a is widely distributed antigen on mammalian tissue.
- Sd^a expression diminishes during pregnancy.
- Sd^a(a-) phenotype is observed in 30-70% of pregnant women.
- Only two cases of reactions in literature.

Anti-Sd^a

- Guinea pig urine used to inhibit anti-Sd^a.
- Urine is rich in Sd^a (-)Tamm-Horsfall glycoprotein.
- The anti-Sd^a will bind to T-H glycoprotein.

Sd^a-active Tamm-Horsfall glycoprotein



Red Cross Results

	1:1	1:2	1:4	1:8	1:16	1:32
Patient + GPU + CAD pos. cells	0	0	0	0	0	0
Patient+ PBS + CAD pos. cells	1+	1+	+/-	0	0	0



Summary

- Patient is transfusion dependent.
- Transfused by multiple labs.
- Auto antibody present.
- Hx Anti- Sd^a not often seen.
- Time delay on sourcing units.
- Limited stock of blood products.
- Products were offered with a caveat.
- Surgeon sourced blood products from another lab.

References

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