



Government of **Western Australia**
PathWest



D PROBLEMS

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Haematology, Transfusion Medicine

D PROBLEMS

Case Study

- 67 year old, female
- Myeloid dysplasia syndrome (MDS), transforming
- Received allogeneic stem cell transplant, June 2017
- Relapsed in June 2018

D PROBLEMS

- Patients blood group : A Rh D Positive
- Donor stem cell blood group: A Rh D Negative (BMTX June 2017)
- Patients last group and screen Nov 2017 (5 months post transplant)
 - A Rh D Negative
 - Negative screen
- June 2018- 12 months post transplant patient represented, group and screen results:
 - A Rh D negative
 - Positive 3 cell screen (Cells 1&2)

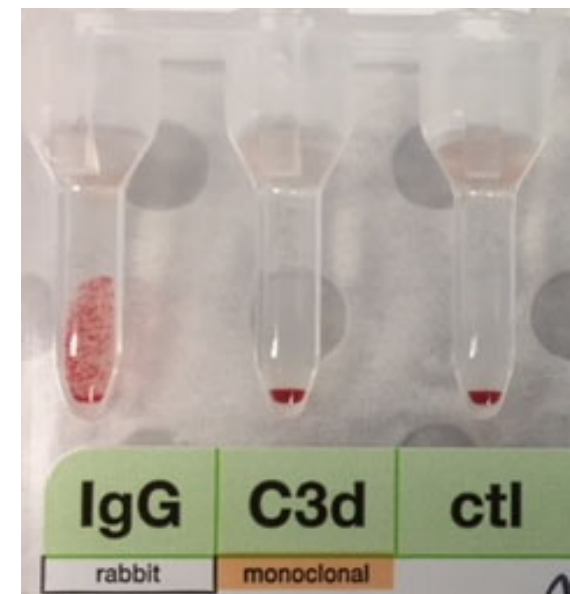
D PROBLEMS

- 11 Cell antibody ID
 - Identified Anti-D and Anti-C

Phenocell B 0.8% Antigen Composition Sheet																		Batch No: 2653 178				Expiry Date: 09/07/2018									
Cell No	Reference No	RH								KEL		FY		JK		MNS				P1PK		LE		LU		Additional Typings	Cell No	Results			
		Rh Phen	D	C	E	c	e	C ^w	K	k	Kp ^a	Fy ^a	Fy ^b	Jk ^a	Jk ^b	M	N	S	s	P1	Le ^a	Le ^b	Lu ^a								
1	2233588	R ₁ ^w R ₁	+	+	0	0	+	+	0	+	0	+	0	+	0	+	0	+	0	+	+	+	0	0		1	AV				
2	5115543	R ₁ R ₁	+	+	0	0	+	0	+	+	0	0	+	0	+	0	+	0	+	+	+	0	0		2	4					
3	2124054	R ₁ R ₁	+	+	0	0	+	0	0	+	0	+	0	+	0	+	0	+	0	0	0	+	0		3	4					
4	4125085	R ₂ R ₂	+	0	+	+	0	0	0	+	0	+	0	+	0	+	0	+	0	+	+	0	0		4	4					
5	4398907	R ₂ R ₂	+	0	+	+	0	0	0	+	0	0	+	0	+	0	+	0	+	+	+	0	+		5	4					
6	2091222	r'r	0	+	0	+	+	0	0	+	0	0	+	0	0	+	0	+	+	+	+	0	0		6	2					
7	2260094	r'r	0	0	+	+	+	0	0	+	0	0	+	0	+	0	+	0	+	+	+	0	+		7	0					
8	2111482	rr	0	0	0	+	+	0	+	+	0	+	0	+	+	+	0	+	+	0	0	+	0		8	0					
9	4255200	rr	0	0	0	+	+	0	0	+	0	0	+	+	+	0	+	+	+	0	0	+	0		9	0					
10	2056302	rr	0	0	0	+	+	0	0	+	0	+	0	+	0	+	0	+	+	+	+	0	0		10	0					
11	2059833	rr	0	0	0	+	+	0	0	+	0	+	+	+	0	+	0	0	+	0	0	0	0		11	0					
Auto																									Auto						
	Reference No																									Reference No					
Ab1																										Ab1					
Ab2																										Ab2					
Ab3																										Ab3					
		Rh Phen.	D	C																											

D PROBLEMS

- Direct Antiglobulin Test (DAT)
 - Positive
 - Positive (2+) IgG, Negative C3d
- Elution was performed
 - Anti-D & Anti-C were eluted from red cells.



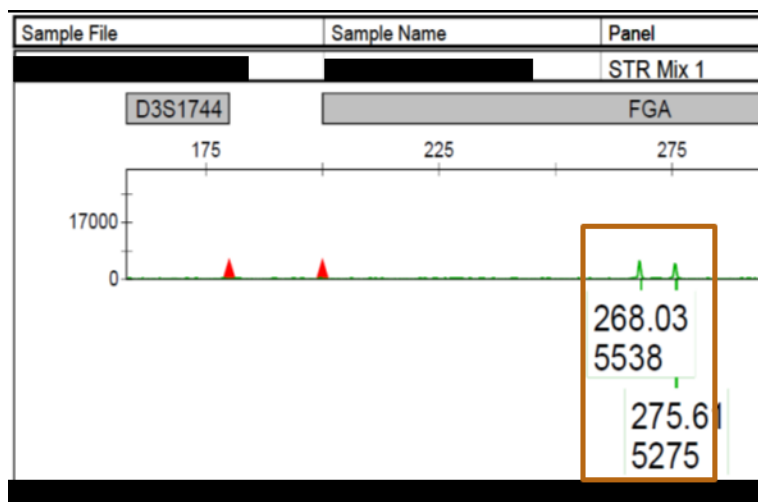
D PROBLEMS

- What has/ is causing the production of the antibodies and ongoing haemolysis?
 - Only transfused A Rh D Negative red blood cells
 - Last transfusion: Aug 2017
 - A/O Rh D negative HLA match platelets.
- Further investigation is necessary.

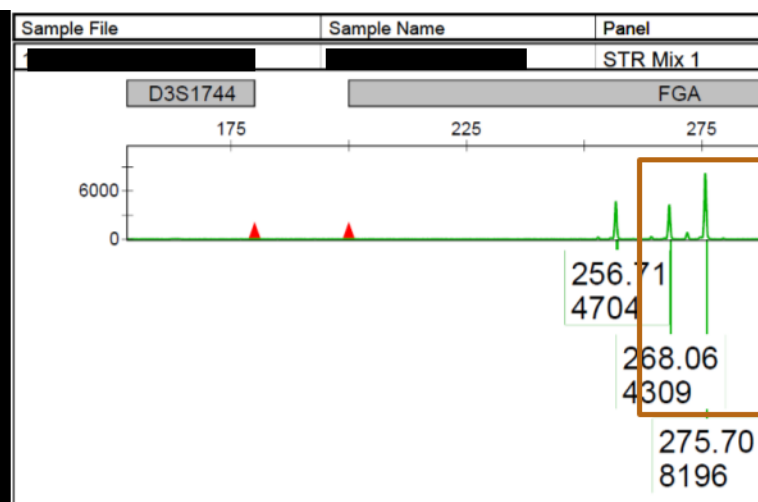


D PROBLEMS

- Molecular genetics studies performed (Chimerism studies) to confirm relapse.



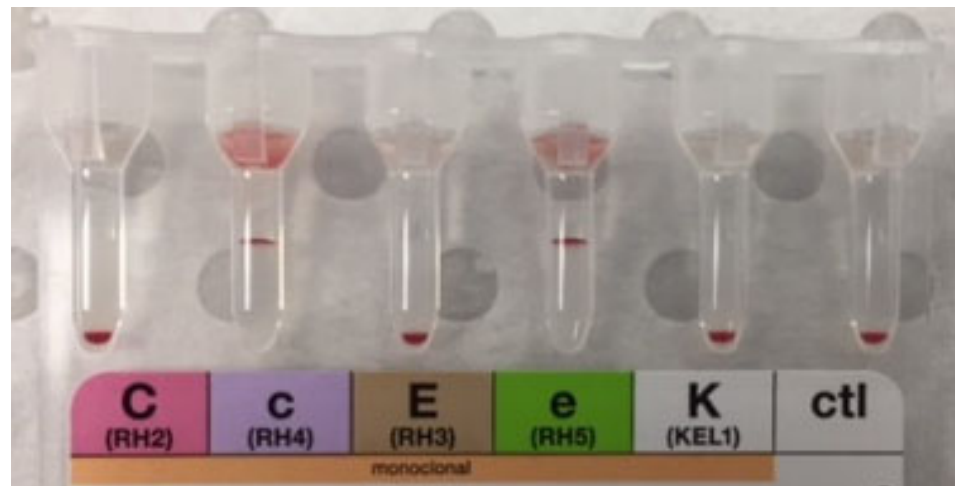
■ 03/10/2017 Day 100



■ 21/08/2018

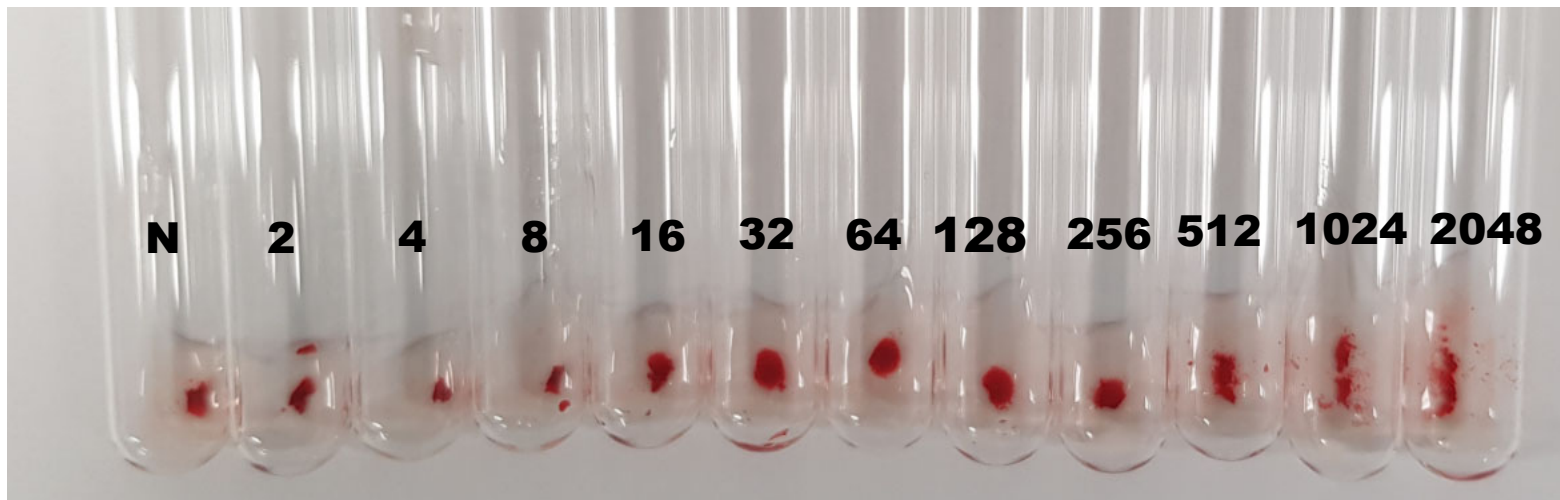
D PROBLEMS

- Performed Rh and K phenotyping of patient cells.
 - C Negative
 - c Positive
 - E Negative
 - e Positive
 - K Negative



D PROBLEMS

- Performed a Anti- D titre
 - 1/8192- June 2018
 - 1/2048- September 2018
- Referred to ARCBS for Anti-D quantitation
 - 404IU/mL



D PROBLEMS

CONCLUSION

- The donor cells are producing Anti-D and Anti-C to the patient's native cells due to relapse, thus causing a vicious cycle of haemolysis.
- Patient is currently receiving A Rh D negative red cells.
- Ongoing monitoring of blood group and haemolysis.



Q & A