

# If it Does not Rain, it pours !!!

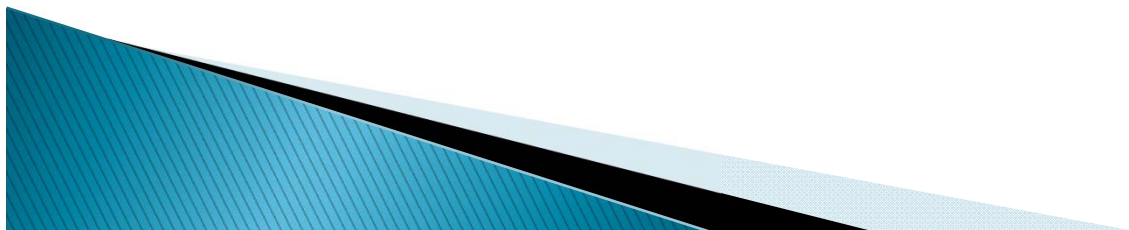
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ACT Pathology



# Statistics on Laboratory Processing at Calvary Hospital.

Transfusion Activity	Average / Month [2015–2016]
Group and Screen Requests	337
Blood Units Cross-Matched (Allocated)	117
Blood Units Transfused	85
Units – Discarded	1
Number of Activated MTP	1
Suspected Transfusion Reactions Requests	<1

259 bed hospital with Emergency, Icu, Ccu and maternity.



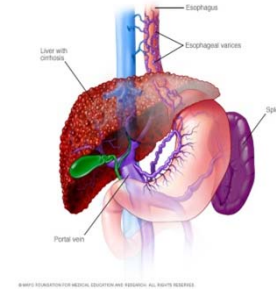
# On the Radar

- ▶ 22/07/2016 67 yr old female presents to emergency with upper GI bleed, known chronic liver disease.
- ▶ Hb 99 and stable.
- ▶ Patient known to us to have multiple antibodies
  - Anti-E
  - Anti Fya ( now subclinical)
  - Anti-Chido/Rodgers.
  - No blood required/discharged.

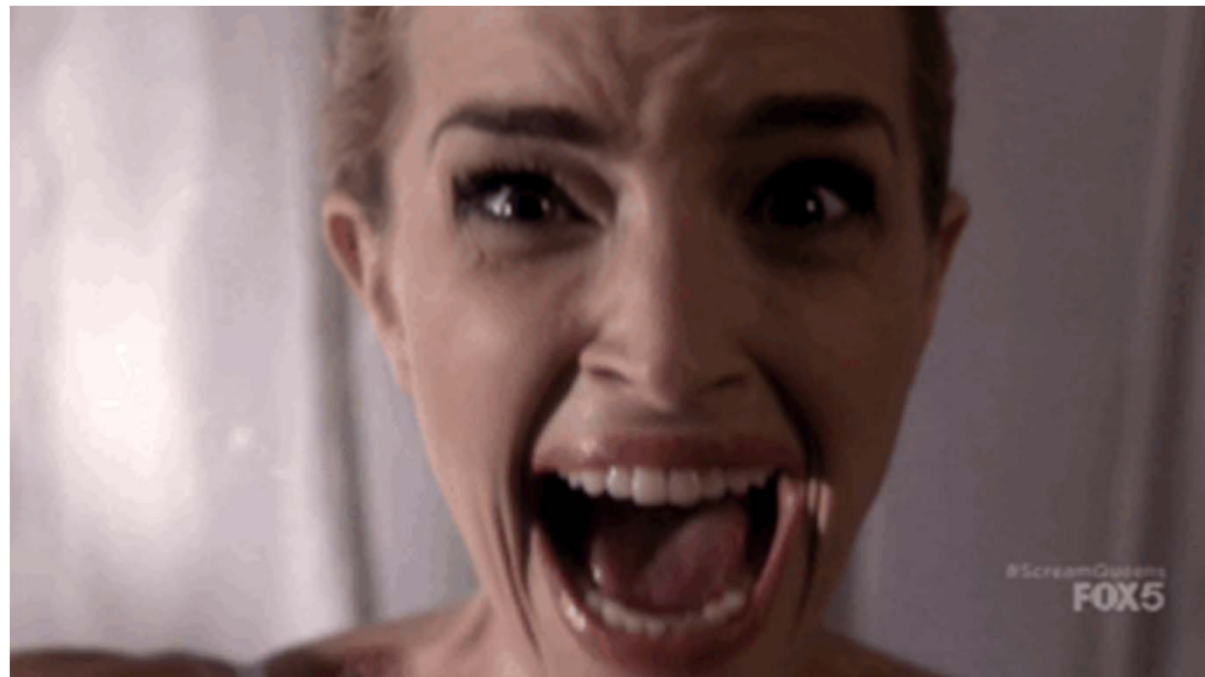


# 02/08/2016

- ▶ Re-presented to emergency with profusely bleeding varices
- ▶ Hb 81 ,platelets 92
- ▶ Dr called for emergency O Neg units to be dispatched to Emergency ASAP.
- ▶ Staff member informed HP3 (Supervisor) of request.



# MY REACTION TO THIS REQUEST!!!



# Call in the big guns.



- ▶ TCH and Haematologist contacted.
- ▶ TCH had the units previously crossmatched in typing rack, sent urgently.
- ▶ Patient taken to theatre and managed, gastroscopy and histology glue to stem bleeding.
- ▶ Units received and crossmatched against neutralised plasma, all negative.
  - 3 units transfused. Patient stabilised.

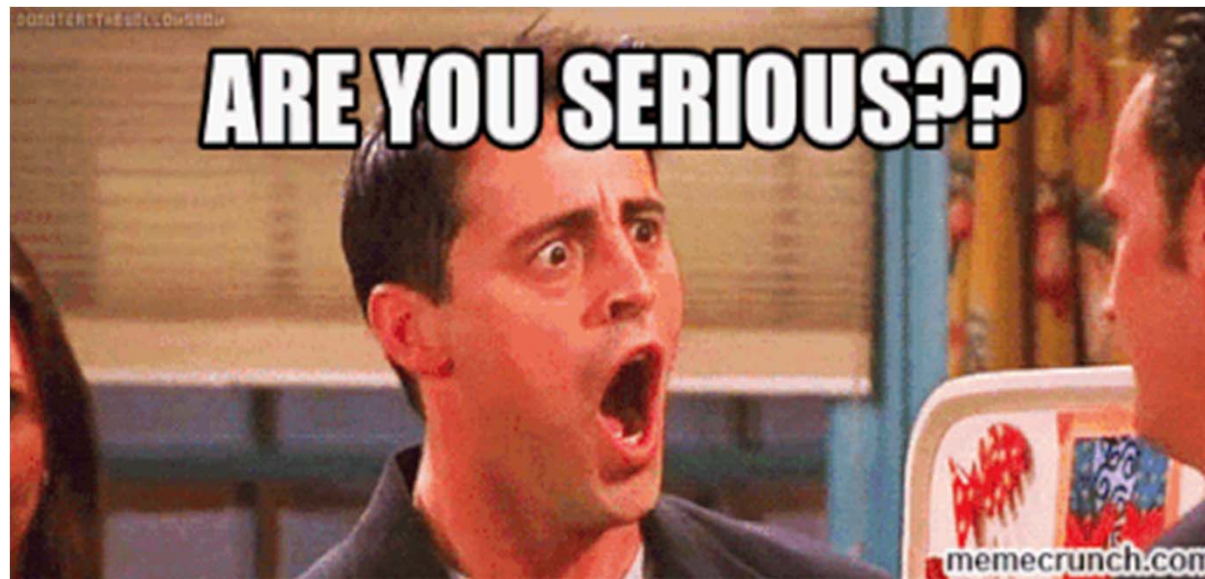


05/08/2016 Here goes another one !!!!

- ▶ New group and screen received. Neutralised plasma used. Two units previous compatible now incompatible.
- ▶ Had she developed another antibody ???
- ▶ Specimen sent to Sydney ARCBS for further investigation



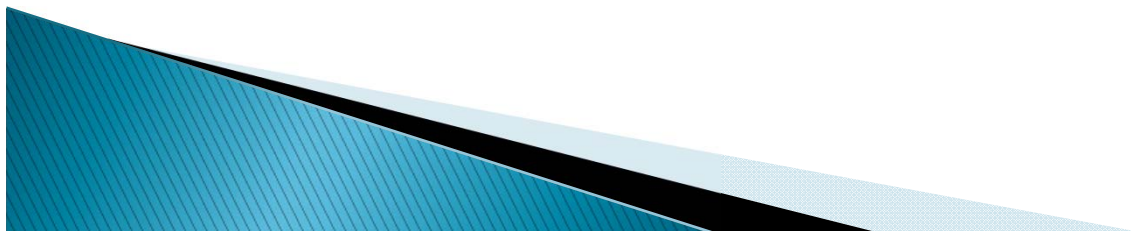
- ▶ ARCBS confirmed possible Anti-Kpa now showing along with existing Anti-E and Anti-Chido/Rodgers. Anti-Fya still sub clinical





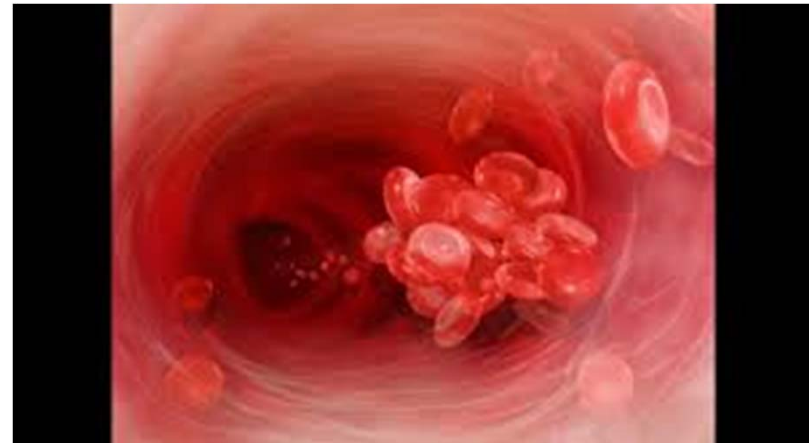
# 15/08/2016

- ▶ NEW group and screen received and unable to neutralise Anti-Chido/Rodgers.
- ▶ Sent to TCH for further investigation.
- ▶ Patient was stable and about to be discharged, Hb 87g/L Iron 3 umol/mol.



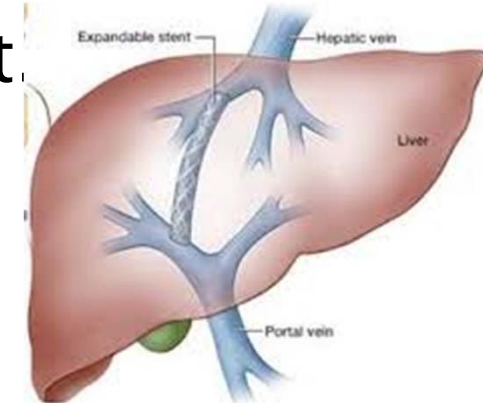
# TCH Findings

- ▶ Anti-Chido/Rodgers now had a titre of over 2000 and was unable to be neutralised following standard methods
- ▶ Dilution of methods still yielded a positive result.
- ▶ Ward advised, no blood required patient being discharged.



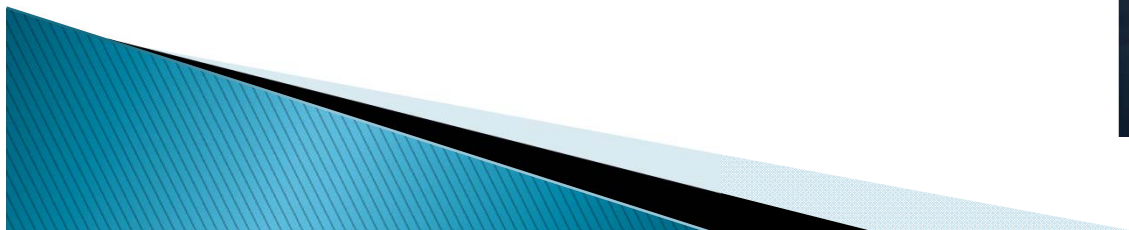
# Clinical discussions.

- ▶ Note patient was iron deficient, ward advised iron therapy should occur after discharge.
- ▶ Discussions with haematologist and treating Dr about ongoing care and prevention of bleeding, possible Transjugular intrahepatic portal–systemic shunt (TIPSS) to be placed to alleviate pressure on varices. She has been referred to a Gastroenterologist.



# What to do when she returns??

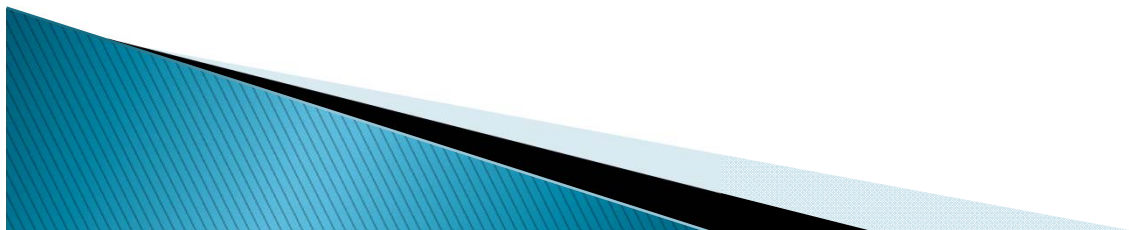
- ▶ Phenotype E-,Fya-,Kpa- blood to be given
- ▶ Hope the Anti-Chido/Rodgers titre has diminished
- ▶ Inform treating team of difficulties getting blood
- ▶ Ring haematologist
- ▶ **Any other ideas???**



## Case 2:



- ▶ 15/08/2016. 53 year old transferred from Goulburn Hospital, history of Cirrhosis (CLD) in liver failure with large right side haematoma on the leg that appeared to be the source of bleeding.
- ▶ Hb 75 and plt 46.



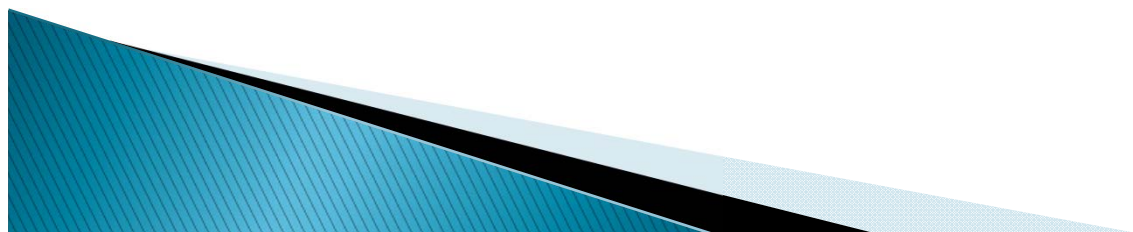


- group and screen performed.  
Mixed field blood group Patient B  
Rh(D) positive with O cells.
- Goulburn lab contacted, patient  
had received blood before transfer.



# blood usage at Goulburn

product	Date 12/08	13/08	14/08	15/08
RCC	2 (O+)	2 (O- +O+)	1 (O+)	2 (O+)
FFP	4 (A+ &AB-)			
Cryo	4 (AB)			
Platelet			1 (B + pool)	



Patient continued to deteriorate and under haematologists guidance received the following over the next 72 hours

R C	1		4		1
FFP	1		1		2
CRYO	5 (aph)		5(aph)		5

tranexamic acid  
Was also used.

Date:	15/08/16	16/08/16	16/08/16	16/08/16	17/08/16		
Time:	17:30	04:30	08:30	22:30	04:30		
Hosp.:	Ca1	Ca1	Ca1	Ca1	CAL	Units	Ref Range
<b>BLOOD COUNT</b>							
Hb	75L	69L	65L	76L	71L	g/L	115-160
WCC	4.5	4.7	4.5	4.6	4.9	x10 <sup>9</sup> /L	4.0-11.0
Plat	46L	44L	44L	45L	50L	x10 <sup>9</sup> /L	150-400
RCC	2.32L	2.18L	2.00L	2.39L	2.23L	x10 <sup>12</sup> /L	3.60-5.80
HCT	0.22L	0.20L	0.19L	0.22L	0.20L	L/L	0.32-0.47
MCV	95	93	93	91	90	fL	80-96
MCH	32.6	31.7	32.4	31.6	31.8	pg	27.0-33.0
MCHC	344	342	349	347	353	g/L	320-360
RDW	22.0H	22.1H	23.0H	17.7H	19.6H	%	11.0-14.5
Retics %		5.95H				%	0.5-2.0
Retics		129.7H				x10 <sup>9</sup> /L	20-110



Interesting to note: at end stage liver failure, enzyme levels look normal because there is no liver function to produce them. Bilirubin, albumin and INR are indicators at this point.

	Date: 15/08/16	15/08/16	16/08/16	16/08/16	17/08/16	Units	Ref Range
	Time: 17:30	17:40	04:30	22:30	04:30		
Hospital:	cal	cal	cal	cal	CAL		
Fasting:	Unknown		Unknown	Unknown	Unknown		
Sodium	133L		137	139	139	mmol/L	135-145
Potassium	3.6		3.6	3.6	3.5	mmol/L	3.5-5.2
Chloride	103		105	107	108	mmol/L	95-110
Bicarbonate	22		21L	23	22	mmol/L	22-32
Anion Gap	12		15	13	13	mmol/L	8-16
Urea	2.5		3.3	3.9	4.4	mmol/L	2.5-7.5
Creatinine	56		57	53	56	umol/L	45-90
Est. of GFR	>90		>90	>90	>90	*	>90
Glucose	9.4H		7.8H	6.8H	7.1H	mmol/L	3.5-5.5
Osmol-calc	277L		284	287	288	mOsm/kg	280-300

Bili Tot.	155H		152H		189H	umol/L	2-20
ALT	19		18		13	U/L	9-33
LDH			320H			U/L	120-250
ALKP	74		62		58	U/L	30-110
New GGT	71H		59H		48	U/L	9-56
Protein	55L		49L		48L	g/L	60-80
Albumin	30L		27L	26L	25L	g/L	33-50
Globulin	25		22		23	g/L	10-42
Ammonia		72H				umol/L	10-50
Calcium			1.96L	1.95L	1.95L	mmol/L	2.10-2.60
CorrCalcium			2.22	2.22	2.24	mmol/L	2.10-2.60
Phosphate			0.97	1.07	0.96	mmol/L	0.75-1.50
Magnesium			0.78	0.84	0.84	mmol/L	0.70-1.10
CRP			12.6H		26.9H	mg/L	<6.0
Haemolysis Index							
Haemolysis	-0.02	-0.03	-0.05	-0.02	-0.03		

Date:	15/08/16	16/08/16	16/08/16	16/08/16	17/08/16		
Time:	18:30	04:30	11:40	22:30	04:30	Units	Ref Range
Hospital:	Ca1	Ca1	Ca1	Ca1	CAL		
<b>COAGULATION PROFILE</b>							
PT	21H	22H	23H	23H	24H	sec	10-15
INR	1.8H	2.0H	2.1H	2.1H	2.1H		0.8-1.4
APTT	33	35	34	32	32	sec	25-36
Fibrinogen	1.6	1.4L	1.4L	1.7	1.7	g/L	1.5-4.0
XDP	36.71H	36.48H				mg/LF	0.00-0.50
Field below is for Test Change Comments.							


- 18/08/2016
- New group and screen received. (Note patient transferred to TCH)
- Antibody investigation positive but weak reactions not fitting anything, maybe possible Anti- Jka
- DCT positive IGG
  - Anti -Jka eluted and identified.

▶ Negative screen at Goulburn on 12/08 and upon arrival at Calvary On 15/08/2016.

▶ Was the Anti-Jka subclinical and restimulated?

Or was it from the units given at Goulburn?



- ▶ Anti Jka is renowned for giving quite severe delayed haemolytic transfusion reactions.
  - ▶ Patient discharge notes state she had a delayed transfusion reaction.
  - ▶ 20/08 LDH 429, Bili 378. 26/08 retic 10.55%. Hb 97.
  - ▶ Discharged 26/08/2016 home.
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# Update 07/10/2016

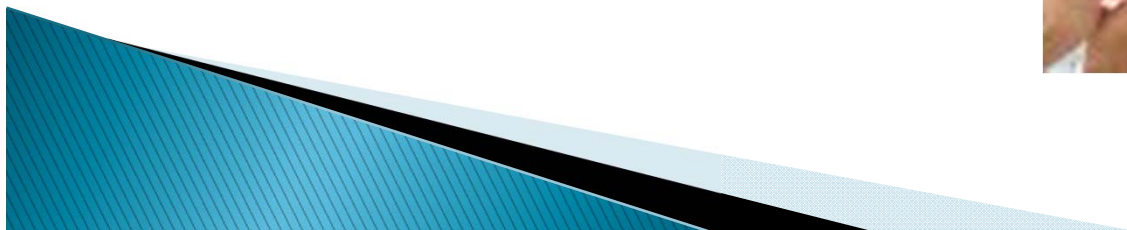
- ▶ Presented to Goulburn again transferred to TCH with Hb 44, PT 37, fib 1.0
- ▶ So far she has had 11 packed red cells, 11 aph cryo, 7 FFP
- ▶ On 14/10 6 novoseven
- ▶ Still ongoing.



# TEAM WORK



- ▶ The main thing taken away from both cases is that we are a team.
- ▶ TCH and Calvary pathology worked in collaboration with Haematologists and the treating medical team for best possible outcome for patients.



# References

- ▶ <http://www.health.harvard.edu/digestive-health/esophageal-varices->
- ▶ <http://www.cirse.org/index.php?pid=1073>
- ▶ **ACKNOWLEDGEMENT**
- ▶ Sarah Eccles.
- ▶ Sam Lennard
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