

# Hurry Up Any Blood Will Do

Haemolytic Anaemia in an atypical T-cell  
lymphoma

Sue Quiring

# Background

- 🦋 AP, a 46 year old male presented to the Angliss hospital 09/01/2017.
- 🦋 His Mother (visiting from Queensland) was letting him sleep in, and became concerned in the afternoon when he was still in bed, so went to check on him.
- 🦋 She was concerned so took him to the ED where his condition was described as “confusion”.
- 🦋 Bloods were collected at 18:00 for FBE, INR (both clotted). UEC, LFT, CRP.
- 🦋 A venous blood gas was taken at 18:15 with the Hb reported as <50 g/L.

# Initial Results 09/01/2017

<b>Na</b>	<b>TBil</b>	<b>Alb</b>	<b>Hb</b>
135 mmol/L	100 IU/L	25 g/L	34 g/L
<b>K</b>	<b>ALP</b>	<b>LDH</b>	<b>WCC</b>
5.3 mmol/L	154 IU/L	1058 IU/L	37.2 x10 <sup>9</sup> /L
<b>CO<sub>2</sub></b>	<b>GGT</b>	<b>CRP</b>	<b>Plts</b>
17 mmol/L	46 IU/L	44 mg/L	Clumped
<b>Urea</b>	<b>ALT</b>	<b>Hapt</b>	<b>NRBC</b>
15.3 mmol/L	20 IU/L	<0.10 g/L	14
<b>Creat</b>	<b>TP</b>	<b>Lact</b>	<b>Retics</b>
118 μmol/L	75 g/L	10.1 mmol/L	3.0%

# Transfusion

- 🦠 A request for 2 units of packed red cells was received with clinical notes of “Haematemesis”.
- 🦠 Forward group reactions showed AB Pos and Reverse Group was O with negative control well being a score 12+.
- 🦠 3 Cell screen was 12+ in each well using BioRad DiaMed Gelstation.
- 🦠 DAT Positive for IgG 12+ and C<sub>3</sub>d 10+
- 🦠 4 Emergency issue O Negative units were issued, and the patient transferred to Maroondah Hospital.

# Transfusion

- 🦋 Another 4 emergency O negative units of red cells were issued and AP transferred to Box Hill Hospital.
- 🦋 Upon arrival at Box Hill the Hb had fallen again to 53g/L.
- 🦋 A further nine units of emergency O Negative units were issued.
- 🦋 The haemoglobin dropped to 47g/L by 13<sup>th</sup> January 2017 and the patient passed away 14<sup>th</sup> January 2017 a few weeks short of his 47<sup>th</sup> birthday.
- 🦋 Samples were sent to ARCBS for blood group and Screen.

# ARCBS Report

- 🦠 Blood Group A Positive by red cell typing only using cells washed in warm saline that had been treated with 0.01MDTT.
- 🦠 ABO serum group unable to be determined due to the presence of cold antibody.
- 🦠 Suggested phenotype C-E+c+e+C<sup>w-</sup>, Jk<sup>(a+b+)</sup>, M+S+s+
- 🦠 DAT Strongly Positive IgG 12, IgM 10, C<sub>3</sub>d 10.
- 🦠 Plasma: Auto-antibody of no apparent specificity strongly reactive by saline 22°C & 37°C. Tube low ionic IAT, strict pre-warmed IAT, PEG-IAT and enzyme techniques.

# ARCBS Report

- 🦠 The plasma reacts strongly (score 12) with all screening cells, cord, adult I negative, Vel negative, p(Tj<sup>(a-)</sup>), Oh (Bombay), Lu<sup>(a-b-)</sup> and Rh null cells.
- 🦠 Allo-absorption studies were performed at both 4°C & 37°C and reduced, but did not remove the auto-antibody reactivity.
- 🦠 ARCBS were unable to determine whether there are underlying allo-antibodies.
- 🦠 The sample was sent to QLD ARCBS for genotyping.

# ARCBS Queensland Report

Blood Group System	Antigen	Predicted Phenotype	Blood Group System	Antigen	Predicted Phenotype	
<b>Rh</b>	c	+	<b>Duffy</b>	Fy <sup>a</sup>	+	
	C	0		Fy <sup>b</sup>	0	
	e	+		<b>MNS</b>	M	+
	E	+	N		0	
	V	0	S		+	
	<b>Kell</b>	Vs	0	s	+	
K		0	<b>Diego</b>	Di <sup>a</sup>	0	
k		+		Di <sup>b</sup>	+	
K <sup>pa</sup>		0	<b>Colton</b>	Co <sup>a</sup>	+	
K <sup>pb</sup>		+		Co <sup>b</sup>	0	
<b>Kidd</b>		Js <sup>a</sup>	0	<b>Lw</b>	Lw <sup>a</sup>	+
	Ja <sup>b</sup>	+	Lw <sup>b</sup>		0	
	<b>Kidd</b>	Jk <sup>a</sup>	+	<b>Scianna</b>	Sc <sup>1</sup>	+
		Jk <sup>b</sup>	+		Sc <sup>2</sup>	0

# FBE

## **RBC:**

- ☠ Marked agglutination, spherocytes, polychromasia, and NRBC's.

## **WBC:**

- ☠ Neutrophilia with LS, toxic vacuolation, & intermediate myeloid cells. Occasional deeply basophilic mononuclear cells are noted that appear reactive (Turk Cells).

## **Platelets:**

- ☠ Appear adequate, but frequent clumping is noted with some large forms.

## **Conclusion:**

- ☠ Cold red cell agglutination with morphological evidence of haemolysis

# Coroners Report

- 🦠 AP presented to EH 09/01/2017 after being unwell since Christmas.
- 🦠 Past medical History: tonsillectomy, appendicetomy and wisdom tooth removal.
- 🦠 Found to have cold agglutinin haemolytic anaemia and CT scan demonstrated lymphadenopathy, ascites and splenomegaly.
- 🦠 Positive CMV serology.
- 🦠 Died 14/01/2017 following a PEA arrest (Pulseless Electrical Activity) secondary to multi-organ failure in the setting of severe haemolytic anaemia of unknown aetiology.

# Coroners Report

- 🦠 Autopsy was performed 17/01/2017 which showed a heavily jaundiced adult male with BMI 24 kg/m<sup>2</sup>.
- 🦠 Spleen weighed 1051g – massive splenomegaly.
- 🦠 Sections of lymph nodes show the normal architecture is effaced by a diffuse mixed cellular infiltrate associated with extensive vascular proliferation with large cells having the appearance of immunoblasts.
- 🦠 Atypical T-cell infiltrate which is CD3+/CD4+ but negative for other pan T-cell markers, associated with disruption and effacement of the lymph node parenchyma. Features C/W peripheral T-cell lymphoma NOS (Not Otherwise Specified).