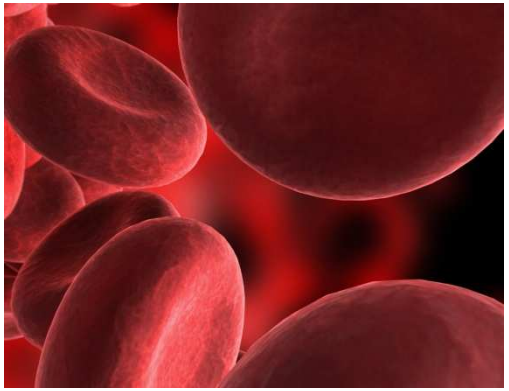

TACO CASE STUDIES

RTC JUNE 2017

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RISK FACTORS - TACO

- Age over 70 years
  - although also seen in younger patients
- Concomitant medical conditions
  - Cardiac failure
  - Renal impairment
  - Fluid overload / Pulmonary Oedema
- Low body weight
- Too rapid transfusion

CASE STUDY

- 86 year old Female, presented to ED
- Frail but self caring and independent

Past Medical History

- Type 2 Diabetes
- Hypertension – Treated with Ramipril
- Cardiac History – on GTN for Angina
- Hyperlipidaemia – Treated with statin

REASON FOR ADMISSION

Admitted via Emergency Department

- Increasing fatigue
- Weight loss (although may have been underweight for years)
- Difficulty breathing when lying flat
- Abdominal and back pain over last 3 months
- Lower Respiratory Tract Infection
  - Intermittent Shortness of Breath with productive cough
- Recent travel to India where she received some unknown treatment

DIAGNOSIS?

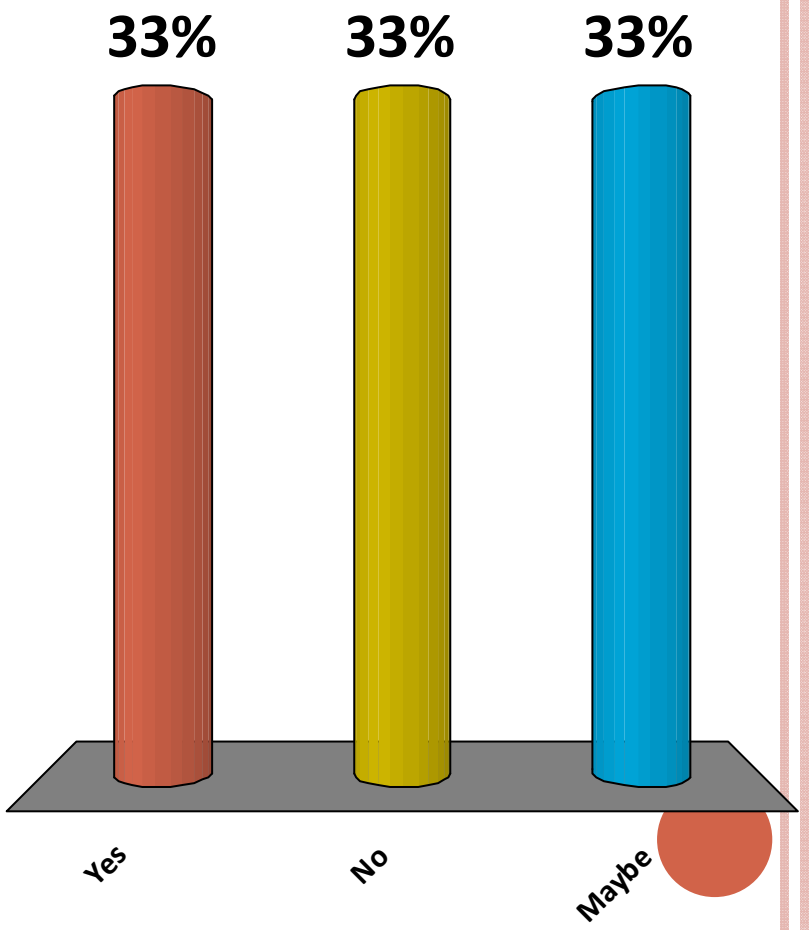
- Bowel Obstruction
- Delayed Haemolytic Transfusion Reaction
- Tuberculosis
- Lung Cancer
- Pneumonia

CLINICAL ASSESSMENT IN ED

- Complicated picture (also spoke little/no English)
- History taken from family
- Respiratory Rate 32-47
- Oxygen Saturations 98% (Room Air)
- BP198/78
- Blood Sugar 18.9
- High lactate (2.6)
- Metabolic acidosis
- Right basal pneumonia, acute pleural oedema
- Hb53g/L
- Weight **estimated** at 60kg - Discuss

IS IT APPROPRIATE TO START TREATMENT WITH AN ESTIMATED WEIGHT?

A. Yes
B. No
C. Maybe



IS IT APPROPRIATE TO START TREATMENT WITH AN ESTIMATED WEIGHT?

- Clinical Priorities – Urgency of treatment
- Practicalities of weighing unwell adult
- Risk of delaying treatment Vs Benefit of accurate dosing
- Actual weight first taken in GITU using hoist after transfusion completed
- Estimated Weight 60kg
- Actual Weight 39kg
- Importance of weight not always recognised outside of paediatrics

DIFFERENTIAL DIAGNOSES AND TREATMENT

Investigated for:

- Diabetic Ketoacidosis (DKA)
- Pneumonia
- TB

Treatment given:

- IVAntibiotics
- 2-3L fluid resuscitation
- RBC x 2 prescribed back to back

TRANSFUSION OBSERVATIONS

Unit 1

Prescribed over: 2 hours

Given over: 3.5 hrs (315ml)

HR 108	to	90
BP 127/60	**to**	**160/90**
RR 40	to	24

Unit 2

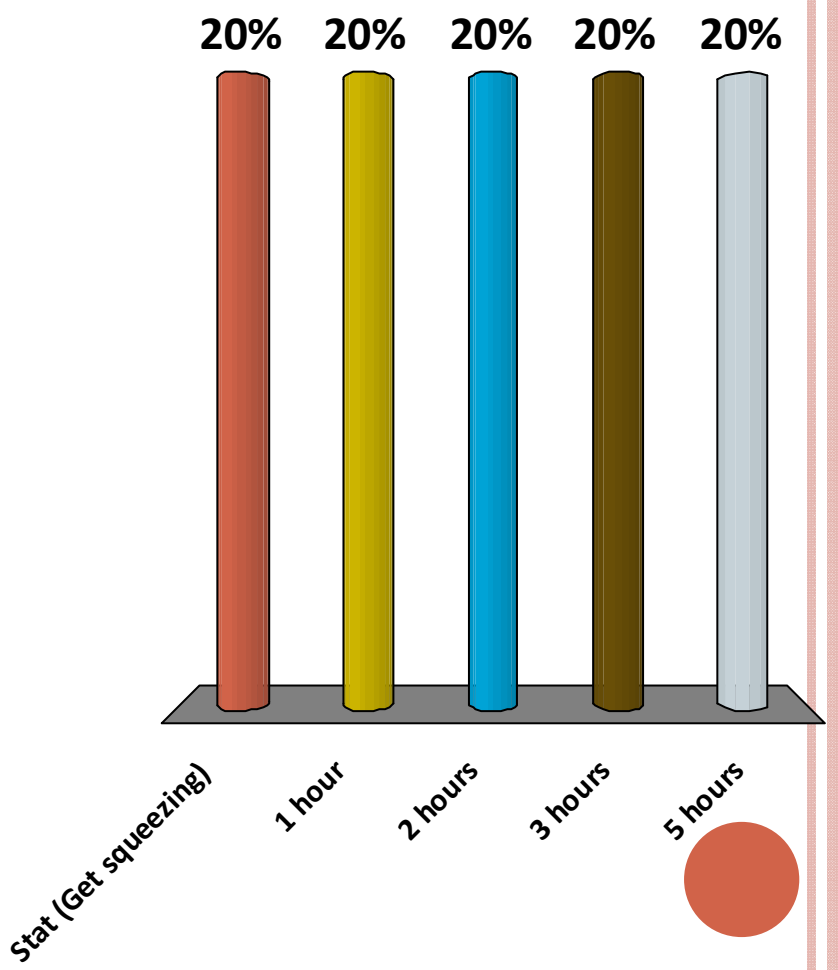
Prescribed over: 2 hours

Stopped after 1.5 hours (approx 150ml given)

HR 100	to	95	to	115
BP **160/70**	**to**	**160/70**	**to**	**179/69**
RR 24	to	24	to	26

OVER HOW LONG SHOULD EACH UNIT HAVE BEEN GIVEN?

A. Stat (Get squeezing)
B. 1 hour
C. 2 hours
D. 3 hours
E. 5 hours

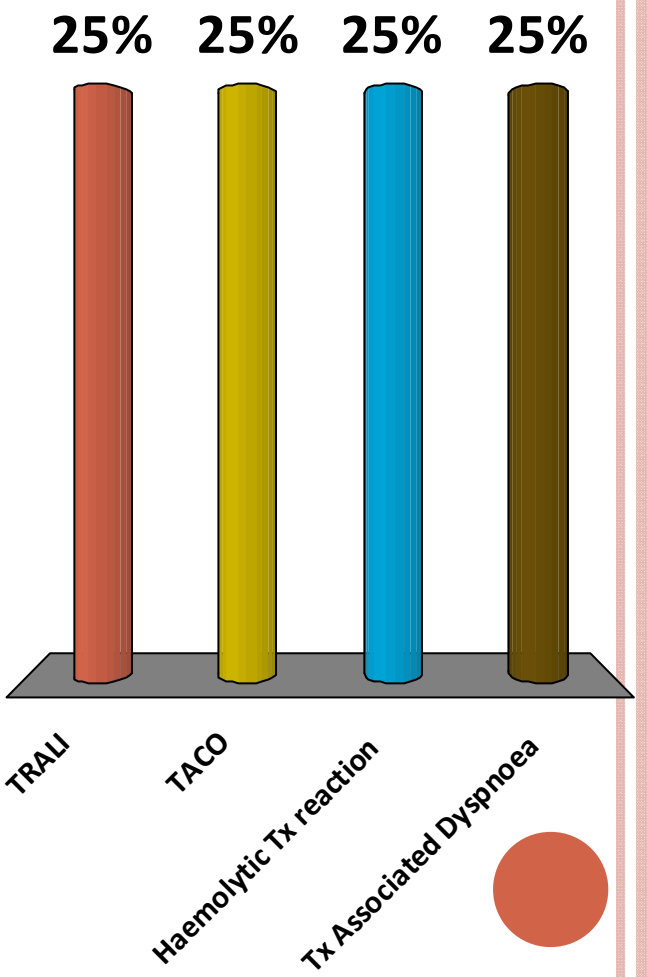


EFFECTS OF TREATMENT

- After 150 ml of second unit (approx 500ml total RBC given), developed worsening SOB
- 2nd unit stopped due to possible transfusion reaction
- Sent back to lab which is how lab and TP found out about it.
- Regular desaturations
- Transferred to GITU for Non Invasive Ventilation and Nasogastric Feeding

WHAT IS THE REACTION?

A. TRALI
B. TACO
C. Haemolytic Tx reaction
D. Tx Associated Dyspnoea



TRALI QUERIED BY MEDICAL TEAM SIGNS AND SYMPTOMS TRALI/TACO

TRALI

- Acute dyspnoea, hypoxia and bilateral pulmonary infiltrates
- During or within 6 hours of transfusion
- Usually platelets or plasma
- Often low blood pressure

TACO

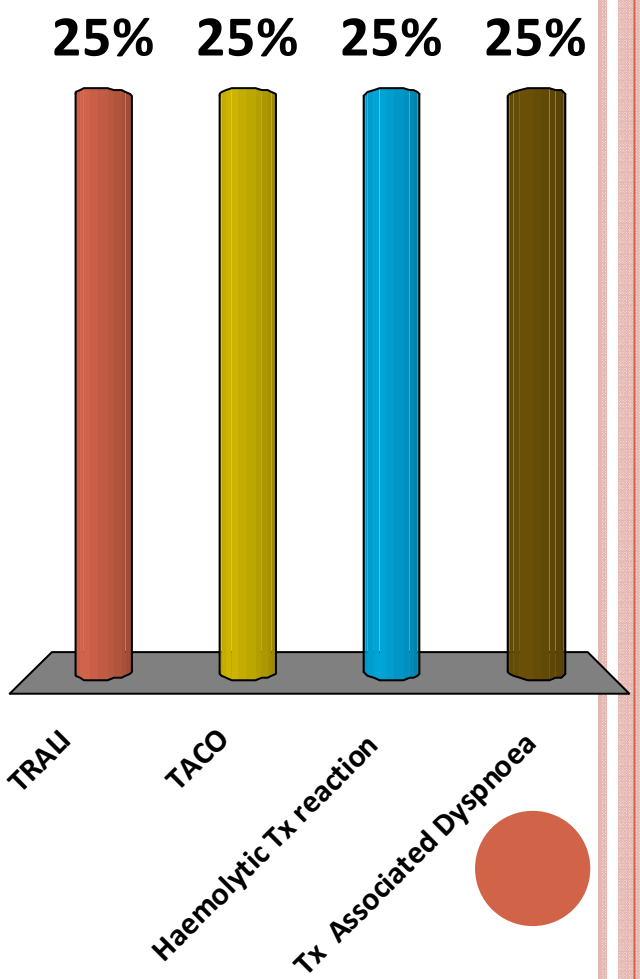
- Acute Respiratory Distress
- Tachycardia
- Increased BP
- Acute or worsening pulmonary oedema
- Evidence of positive fluid balance

NEXT…

- Serial CXRs show pneumonia with worsening pulmonary oedema.
- Fluid balance
  - Positive 2000ml day 1 of admission.
  - Positive 2750ml day 2 of admission.
- Frusemide infusion – Symptoms improve
- Achieved neutral balance on day 6
- Multiple Investigations for cause of anaemia and sepsis
- Total 13 days GITU, 1 day Respiratory HDU, 6 days ward, then discharged home

WHAT IS THE REACTION?

A. TRALI
B. TACO
C. Haemolytic Tx reaction
D. Tx Associated Dyspnoea



CONCLUSIONS

- Consensus among UHS and NHSBT Consultants:
  - Most likely reason for deterioration is fluid overload (TACO)

- Key indicators of TACO in this case:
  - Increasing Blood Pressure
  - Worsening Pulmonary Oedema
  - Positive fluid balance
  - Improved symptoms following diuretic
  - Risk factors present (low weight, elderly, cardiac history)

Comparison of TRALI and TACO (adapted from BCSH Guideline on the Investigation and Management of Acute Transfusion Reactions, 2012)

	TRALI	TACO
Patient characteristics	? More common in haematology and surgical patients	Most common in age >70 but can occur at any age
Implicated blood components	Usually plasma or platelets	Any
Onset	Up to 6 hours from transfusion (usually within 2 hours)	Within 6 hours of transfusion
Oxygen saturation	Reduced	Reduced
Blood pressure	Often low	Often high
Jugular venous pressure	Normal or low	Elevated
Temperature	Often raised	Normal
Chest X-ray	Bilateral peri-hilar and nodular shadowing or 'white out', heart size normal	Enlarged heart and characteristics of pulmonary oedema
Echocardiogram	Normal	Abnormal
Pulmonary artery wedge pressure	Normal	Elevated
Blood count	Fall in neutrophils and monocytes followed by neutrophil leucocytosis	No specific changes
Fluid challenge	Improves	Worsens
Response to diuretics	Worsens	Improves

LEARNING POINTS

- Consider risk factors for TACO prior to transfusion
  - Elderly particularly at risk
- Be cautious about using estimated weights
- If Hb low and symptomatic, consider blood early before fluid challenge with crystalloids.
- Consider the need for transfusion based on symptoms
- Don’t give unit two without review!

Questions