SHOT cases

Interactive Discussion Session

Tony Davies & Peter Baker

Megan Rowley & Terrie Perry
Please vote when asked

A
Apple

B
Banana

C
Carrot

D
Plum
Section 1
Urgent but difficult transfusions
Case 1 - Multiple alloantibodies: needs emergency transfusion

- Patient in A&E needs emergency transfusion following a gunshot wound
- BMS informs nurse that patient has multiple antibodies including anti-c and there would be a delay in providing suitable blood
- A&E consultant requested 4 emergency O Negs which are supplied by the BMS
- BMS did not warn clinical staff of risk
What do you think?

A. Was this a reasonable clinical decision?

B. Should the BMS have been more assertive about the potential incompatibility?

C. Should the BMS have refused?

D. Should the consultant haematologist been involved?
Case 2 - A dilemma for the duty BMS

- A 64 yr old male was admitted unwell at 21:30 to the Emergency Department with a card stating autoimmune haemolytic anaemia and cold agglutinins
- Blood samples were sent to the lab at 22:25
- His Hb was 38g/L and he was symptomatic
- The consultant haematology was outside of mobile phone coverage
What would you do first?

A. You request additional warmed samples to send to the Blood Service to do a crossmatch?

B. You recommend use of emergency O Neg units in the meantime?

C. You try to find the least incompatible units from stock and recommend use of a blood warmer?

D. You ask if this can wait until the next working day?
New samples requested by lab at 23:00 (within 30 mins of arrival of first set)

The patient was still in the ED but had been transferred to the care of the surgical team and there was a disagreement about whose responsibility it was to take the samples

There was additional difficulty in venepuncture requiring assistance from an anaesthetist
Who should take responsibility for organising the samples?

A. The Transfusion Laboratory
B. The Emergency Department
C. The Surgical Team
D. The Anaesthetist
Case 2 - continued......

- Samples received in lab at 05.35 (6-hour delay) and sent to RCI
- Emergency O RhD Negs were transfused at 09:10 (12 hours from admission)
- Suitable units available for transfusion from Blood Service lab at 13:00
Case 2 - Discussion Points

- The patient was transferred 3 times in the night – who should have taken responsibility?
- Was it reasonable to transfuse O Negs?
IT is there to help!
A patient had a positive antibody screen in 2002 which was fully investigated and flagged under the patient’s A&E number.

The patient received further red cell transfusions on two later occasions (2007 and 2013).

These units were not of the correct phenotype due to a failure to consult historical records.
Case 3 – continued…..

• On the second two occasions the samples were booked in using the NHS/Hospital number

• The antibody screens were negative

• The patient was transfused red cells that had been electronically issued on both occasions
• When a further request was received by the laboratory the patient’s historical record under the A&E number was found and it was noted the patient had previously detectable anti-K, anti-Jk$^a$ and anti-Kp$^a$ in 2002
Question

- Was electronic issue ever appropriate for this patient?
What Lessons can we learn from IT-related cases?

- IT is only robust if it contains the correct checks and balances
- IT is only robust if it is populated with the correct information
- Duplicate records must be taken into consideration during demographic entry
- Anything else?
Case 4 - Prelabelled tubes

- A mother and father were bled at the same time for prediction of fetal blood group
- A midwife labelled the tubes M for male and F for female
These were interpreted as M for mother and F for father at the time of sampling by the consultant...

...then fully labelled by the midwife, again using M for male and F for female.
Wrong Blood!

- The error was detected when it was apparent from chromosome testing that the male and female karyotypes did not correspond with the sample labelling.
- This was checked against historical blood groups for both individuals which confirmed that the samples had been transposed.
Learning points from Section 1

- Attention to detail
- IT should support the process
- Continuity of care
- Leadership
- Assumption – Check Check Check !!
Section 2

Time to do things properly?
Multiple errors leading to wrong blood
Case 5
Specific Requirements Not Met

• 2 units of red cells were requested for a 68y old haematology patient

• No specific requirements were stated on the request form and no specific requirements were flagged on the LIMS

• Blood was issued for transfusion on the Haematology Day-Case Unit
Case 5 –continued....

- The nurses administering blood to this patient were familiar with her clinical history and knew she had been treated with fludarabine
- The patient received one non-irradiated red cell unit
- A different nurse realised that the blood should have been irradiated and prevented transfusion of the second non-irradiated unit
In your opinion, what is the most robust and effective way of preventing this?

A. Give the patient an ‘I need irradiated blood’ card

B. Prompt ‘specific requirement’ on prescription chart and request form

C. Use flags for specific requirements on the LIMS

D. Rely on Pharmacy to tell the Transfusion Laboratory when fludarabine is prescribed
Case 5 - Further Information

• This patient had an ‘irradiated blood’ flag in a previous transfusion laboratory information system (LIMS)

• This information had not been transferred when a new LIMS was introduced

• There was no adverse outcome in the patient (as is usually the case)
Learning Points

- There should be a system *within* and *between* hospitals for communicating special requirements.
- In certain high-risk groups consider the requirements each time blood is ordered.
- Patients need some guidance and education when patient-held irradiation or antibody cards are given to them.
- You need a robust but realistic strategy when searching the LIMS for historical records.
Transfusion-associated GvHD

Omission of irradiation in 999 patients at risk

Leucodepletion
Who is responsible for specific requirements?

A. **Prescriber**: when ordering and prescribing
B. **Bedside checker**: when administering blood
C. **Transfusion Laboratory**: recorded on the LIMS - multiple sources of information, timely
D. **Patient**: card and sticker for notes available and well established – and should be used!

*Combination of strategies is required to prevent transfusion of non-irradiated blood components*
Case 6
Ineffective Communication

• 46y old woman had pre-admission bloods taken prior to surgery in a specialist hospital
  “Haemoglobinopathy screening: sickle trait suspected on initial test but sickle cells noted on blood film suggesting sickle cell disease. Further testing arranged”

• Haematology laboratory staff were unable to contact the clinical staff to alert them prior to surgery

• Surgery went ahead, the patient was transfused
Case 6 – continued ....

- Transfusion Laboratory were unaware that the patient had Sickle Cell Disease and did not provide *extended phenotype* blood
- Patient was known to have SCD
  - Letter in clinical notes with a management plan
  - Notes said that the Transfusion Laboratory had been informed
  - Nothing about SCD on the request forms
- No timely communication between haematology and transfusion laboratories and clinicians
Learning Points

- All previous ‘specific requirements’ learning points apply
- Information was available from more than one source; patient, notes and laboratory tests
- It took 10 days to join it all up and the Transfusion Laboratory was the last to know
- Additional risk of failed/delayed communication when being treated by another clinician or in another hospital
Case 7
Consent for Transfusion?

• A unit of platelets was checked, the giving set attached and the component was about to be administered when the patient declared that he was a Jehovah’s Witness and did not want a platelet transfusion

• There was no evidence of discussion about the transfusion between the patient and the medical staff

• Consent to receive transfusion was not documented in the medical notes
Where is valid consent for transfusion documented in your Hospital?

A. In the patient’s clinical notes

B. On the prescription chart

C. On the transfusion request form

D. On a consent form (generic consent form or specific transfusion consent form)

E. If you do not record consent for transfusion at all - just put your hand up
Learning Points

• Is lack of consent SHOT-reportable?

• If JW patient transfused against their wishes would have come under ADU category (Avoidable, Delayed and Under-transfused)

• Involving patients with clinical decision-making is one way of reducing errors (as we have seen from previous cases)
Case 8
Wrong blood due to multiple errors

• An ABO incompatible red cell unit was transfused resulting in an acute haemolytic transfusion reaction

• The computer warning flag indicated that the units were incompatible but was overridden by the Biomedical Scientist

• The incompatibility (Group O patient, Group A blood) was not picked up at the bedside by the Nurse
Case 8 – continued ....

- In response to the reaction the Doctor who was consulted said to continue the transfusion, without reviewing the patient.

- The patient developed acute and delayed haemolysis but survived without any long term sequelae.
Multiple errors that led to an ABO incompatible transfusion that could have been fatal

Two of these were in the laboratory – not an emergency and the alerts should not have been ignored

Missed opportunity at bedside to detect incompatibility and then failed to re-check when patient reacted (but the blood was labelled for correct patient)

Doctor should have seen the patient
What do you think is the **most likely** root cause of this ABO incompatible transfusion?

A. Lack of education and training about transfusion

B. A poorly configured laboratory IT system

C. Working under pressure and taking short cuts

D. Unprofessional behaviour
Case 9
Failure (and success) of bedside checks

- Blood was delivered to the ward for two requiring transfusion; Patients X and Y

- Following a check at the bedside of Patient X (by 2 Nurses): Patient X (A Negative) was given blood intended for Patient Y (O Positive)

- The error was discovered by another Nurse when doing the bedside checks for Patient Y who did not get any blood
Case 9 – continued ....

As a result;

- **Patient X** needed anti-D (risk of sensitisation)
- **Patient Y** had a *near-miss* ABO incompatible transfusion
What bedside procedure do you think is the most effective at preventing an incident like this?

A. Patient empowerment: "Do you know who I am?"

B. One person checking the ID wristband with the blood bag tag

C. Two people checking the ID wristband with blood bag tag

D. Electronic check using barcoded ID wristband and barcoded blood bag tag
An incorrect volume of red cells was calculated and prescribed for a 2y old boy weighing 10.8Kg resulting in under transfusion.

The Doctor calculated the red cell volume based on actual Hb of 7.3g/dL and target Hb of 12.0g/dL.

Following a recent change of Hb units within Trust from g/dL to g/L the formula should have been calculated using the Hb levels as 73g/L and 120g/L.
Case 11
Can’t read the doctor’s writing?

- 17y old girl with Hb 66g/L was transfused on a paediatric ward
- The correct rate was prescribed (145mL/hr over 4 hours) but the writing on the prescription chart was not legible
- The nurse misinterpreted the prescription as a total of 145mL over 4 hours
- This resulted in under transfusion
Learning Points

- Hb units were changed nationally so guidelines, protocols and teaching material need to be changed to reflect this
- Make sure transfusion calculations based on algorithms are updated as well
- All should be aware of correct volume and transfusion rate required for patients of all ages
- If prescription is unclear, or appears to be wrong, then the request should be challenged
The SHOT Team would like to thank you for your participation!