Ability of clinicians to recognise reportable hazards of transfusion as defined by the ‘Definitions of SHOT reporting categories’, available on the SHOT website

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Overview

- Background: why is this issue important?
- Study design
- Study Results
- Further plans
Background: why is this issue important? Clinical need to recognise hazards of transfusion

- To allow hazards of transfusion manifesting as transfusion reactions to be managed appropriately

- Guidelines from BSH as well as local regarding appropriate management and investigation and management of subsequent transfusions

- Failure to recognise hazard could lead to delay / inappropriate management

- Some case studies in SHOT data explemify this (understandably small numbers)
Background: why is this issue important

- Valid consent not being obtained. Evidently if a clinician lacks awareness of the potential hazards of transfusion this will have implications for their ability to obtain informed consent.

- SHOT data collected incomplete: Transfusion practitioners/haematologists may need to be made aware of transfusion reactions by clinical staff.
SHOT Report 2015: ‘Confounding clinical features leading to conflicting assessments’.

- In this case a patient with pre-existing CCF and acute renal failure was found to be anaemic.
- Three quarters the way through the first of two units prescribed experienced rigors, shortness of breath, tachypnoea, mild fever, periorbital oedema and wheeze.
- The transfusion was stopped and patient treated with a bronchodilator, antihistamine and steroid and continued oxygen therapy.
- Six hours later the oxygen saturation dropped further, a CXR demonstrated worsening pulmonary oedema and treatment with an IV diuretic was given.
- Although this did not initially result in an adequate diuresis the patient survived.
SHOT Report 2014: ‘Underreporting of TACO, a case identified after notes were reviewed for other reasons’.

- This 93 year old male was unwell with disseminated intravascular coagulation, congestive cardiac failure and a lower respiratory tract infection at the time of transfusion.

- The patient was being transfused with FFP during which he developed shortness of breath which improved after treatment with furosemide.

- A 67 year old female was transfused with 3 units of red cells as an outpatient
- Was then readmitted more than 24 hours later with breathlessness, tachycardia, fever and rigors.
- Patient was initially treated with IV fluid and antibiotics and a chest x-ray was performed.
- Once the patient was reviewed by a haematologist on the admission unit the diagnosis was changed to TACO, which resolved with diuresis.
Method

- I formulated a questionnaire asking clinician's grade, specialty, when they last had transfusion training and whether they felt confident identifying a reportable hazard of transfusion.

- I then wrote clinical scenario's of which 4 described a reportable hazard of transfusion (based on cases described within the SHOT report), and 2 which did not.

- I asked respondents to identify whether there was a reportable hazard of transfusion or not. The survey was then intended to be circulated to all doctors in: North Bristol, UHB, Weston, Swindon, Gloucestershire Hospitals

- An initial study was sent to doctors in UHB in 2016, following feedback the survey was modified
Q1: What is your grade?

- Consultant
- Speciality trainee
- Non training grade doctor
- Core trainee
- Foundation trainee
Q2: What is your specialty?
Q3: Have you had previous transfusion training and when?

- Yes - <1 year ago
- Yes - 1-2 years ago
- Yes - 2-3 years ago
- Yes - >3 years ago
- No
Q4: Do you feel confident in your ability to identify a reportable hazard of transfusion?
Q5: A patient with a platelet count of 90 due to ITP is due to have an ascitic drain inserted. The doctor misreads the thresholds for transfusion and transfuses them with 1 ATD of platelets, which ordinarily would not have been done. The patient does not have a transfusion reaction. Is this consistent with a reportable hazard of transfusion? (Relates to category of SHOT report: avoidable transfusion)
Q6: A 79 year old man received 3 units of blood and two hours later was noted to be short of breath and tachycardic and hypertensive with bilateral pulmonary crackles. He recovered with administration of IV furosemide. Is this consistent with a reportable hazard of transfusion? (Relates to category of SHOT report: transfusion associated circulatory overload)
Q7: 4 hours post transfusion (after having been in a road traffic accident) a 27 year old man with no prior past medical history developed shortness of breath, with oxygen saturations falling to 86% and bilateral infiltrates on CXR. Is this consistent with a reportable hazard of transfusion? (Relates to category of SHOT report: Transfusion Related Acute Lung Injury)
Q8: A junior doctor has ordered 1 ATD platelet for a patient. When the consultant comes around he queries this as the patients platelet count is 35 and he is not bleeding, therefore this does not fit the Trust Guideline on platelet transfusion. The platelet transfusion request is therefore cancelled without the patient being transfused. Is this consistent with a reportable hazard of transfusion?
(Relates to category of SHOT report: Clinical error detected before transfusion started)
Q9: Patient admitted with sepsis and GI bleeding. Found to have thrombocytopenia with a platelet count of 31 so transfused 1 ATD of platelets in view of the bleeding. Two days later when the patient’s FBC was rechecked the platelet count was found to be 15. Is this consistent with a reportable hazard of transfusion?
Q10: A 24 year old man comes in having been in a motorbike accident. A major haemorrhage protocol is declared appropriately and he is given as part of his initial resuscitation 4 units of O Rh D negative Kell negative blood. When further work is done on his bloods he is shown to be group AB Rh Positive. Is this consistent with a reportable hazard of transfusion?
Conclusions

- Results show a variable knowledge of staff awareness of what constitutes hazards of transfusion which may mean national SHOT reported data is an underestimation of the hazards of transfusion.

- Limitations of the survey exist including reporting bias.

- It is not possible to make conclusions from this on whether transfusion reactions are being managed appropriately.

- Next steps: Abstract submitted for SHOT symposium. Suggested survey to be verified retrospectively (by circulating amongst transfusions practitioners) and to determine response rate amongst doctors.
Thank you:

To all the transfusion practitioners who helped circulate this survey, and particularly Karen Mead from NBT