Uncommon Complications of Transfusion (UCT) n=19

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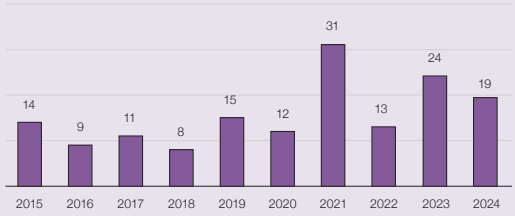
Headline data 2024

Number of reports n=19
Deaths n=1
Major morbidity n=1

UCT reports by year



Demographic data

Male n=11
Female n=8
Adults n=13
Paediatric n=6

Blood component data

Red cells n=12
Platelets n=4
Plasma n=0
Granulocytes n=1
Multiple components n=2

Key findings:

- Fewer cases reported compared to 2023
- Incomplete details provided in reports impact on analysis and inferences

Gaps identified:

- Lack of early recognition of symptoms suggestive of possible transfusion reactions and prompt reporting and communication to the transfusion laboratory
- Poor vital sign monitoring of patients receiving transfusions
- Organisations lacked defined processes for reporting, reviewing, and trending uncommon complications of transfusion
- Learning from these events is not always evident from reports

Good practice:

- In some cases, there were clear actions taken by hospital transfusion committees to address poor practice
- An unusual cluster of reactions was identified and escalated appropriately by the organisation

Next steps

- Reporters are encouraged to continue to report cases with atypical reactions to transfusion. This will help gain a better understanding of these complications, identify risk factors, and develop risk-reduction strategies

For all abbreviations and references used, please see the **Glossary** and **Reference list** at the end of the full Annual SHOT Report. Please see the supplementary information on the SHOT website (https://www.shotuk.org/shot-reports/annual-shot-report-2024/).

Definition:

Pathological reaction or adverse effect in temporal association with transfusion which cannot be attributed to already defined side effects and with no risk factor other than transfusion and do not fit under any of the other reportable categories, including cases of transfusion-associated hyperkalaemia.

Serious reactions in this category are reportable to the European Union (EU) as 'uncategorised unintended responses'.

Introduction

This category includes cases with uncommon reactions reported in patients with a temporal relation to transfusions but cannot be classified into other categories. Patients often have multiple comorbidities which may contribute to the complication noted. Reporting and reviewing these cases helps to facilitate the ever-evolving understanding of transfusion complications and improve the safety of transfused patients through the implementation of appropriate risk-reduction measures. Occasionally, uncategorisable error reports are included in UCT to ensure learning is captured and shared.

Deaths related to transfusion n=1

There was 1 death reported in this category assessed as possibly related to the transfusion (imputability 1).

Case 22.1: Patient not monitored during platelet transfusion (imputability 1 – possible)

An elderly patient with acute myeloid leukaemia was admitted to the emergency department with a history of a fall, hypothermia, confusion, and suspected septicaemia. The patient was not actively bleeding but did have thrombocytopenia (platelet count <10x10^9/L). They were prescribed an adult therapeutic dose of platelets which was commenced at 16:50. At 18:19 the patient was found in cardiac arrest and subsequently died. On investigation it was noted that baseline observations were performed at 15:20 after which no vital signs had been taken. At the time of the arrest call, the platelets were not considered as a contributory factor and the transfusion laboratory were not informed until 2 days after. This delayed a precautionary recall. The cause of death was determined to be hypothermia and sepsis, with an underlying diagnosis of acute myeloid leukaemia.

Reviewing local policy and practices highlighted that although patients receiving platelet transfusions had to have their vital signs taken, in this clinical area, this wasn't being done. It is unclear whether the staff were trained or competent in blood transfusion. This highlighted the risk of a lack of timely identification, escalation and obtaining advice pertaining to patients with suspected transfusion reactions. The hospital transfusion committee agreed to include this information in the form of a flowchart to provide guidance to clinical staff. This information would be accessible at the nursing station of those areas where transfusion was a frequent occurrence.

Major morbidity n=1

Case 22.2: Patient diagnosed with subdural haematoma following red cell transfusion

A patient with acute coronary syndrome, chest pain and suspected pernicious anaemia was admitted with a haemoglobin (Hb) of 44g/L and chest pain. They were transfused with three units of red cells over approximately 18 hours. Following completion of the third unit, the patient experienced headaches, blurring of vision and other symptoms. A computed tomography head scan revealed a large subdural haematoma. The patient was admitted to intensive care and made a full recovery. The investigation noted that the patient received one dose of aspirin and ticagrelor the day before the bleed. It was later revealed that the patient had fallen and hit their head three days prior to admission resulting in loss of consciousness for 20-30 seconds.

No further details on the reason for the low Hb or the platelet count were available to SHOT. While underlying factors could be contributory, the case has been included here in view of the temporal relationship of the reaction with transfusion.

Other cases n=17

There were 6 paediatric cases, including 4 neonatal cases all from the same centre who presented with 'red urine' following a red cell transfusion from the same donor. There was no laboratory evidence of haemolysis. Their post-transfusion direct antiglobulin test and antibody screen were negative and retrospective crossmatch confirmed compatibility locally. The relevant Blood Service invited the donor back and performed extensive tests to identify any cause for the haemolysis and nothing significant was identified.

A variety of cases with nonspecific symptoms, for example tachycardia, dizziness and facial numbness have been reported in the other cases included in this category. These cases can be viewed in the supplementary information on the SHOT website.

Learning points

- Clear protocols must be in place for clinical staff to access guidance and advice when monitoring transfused patients who present with unusual signs and symptoms
- Investigations into suspected reactions should follow British Society for Haematology guidelines (Soutar, et al., 2023)
- Trending, reporting, and escalating unusual clusters of incidents help organisations identify and mitigate risk and improve patient safety

Conclusion

All staff involved in the transfusion process have an integral part to play in recognising transfusion reactions through the regular monitoring of patients. This ensures the timely detection, escalation, and treatment of these to minimise the impact of the reaction and optimise transfusion safety.

Education and knowledge, including the early recognition of transfusion reactions, as well as learning from these events, should be included in transfusion training and competency assessment. The importance of providing all the relevant details associated with the transfusion reaction is essential to ensure accurate analysis and interpretation.