19 Uncommon Complications of Transfusion (UCT) n=13

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Definition:

Occurrence of an adverse effect or reaction temporally related to transfusion, which cannot be classified according to an already defined transfusion event and with no risk factor other than the transfusion, and no other explanation.

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

Abbreviations used in this chapter

BP	Blood pressure	**TACO**	Transfusion-associated circulatory overload
BSH	British Standards for Haematology	**UCT**	Uncommon complications of transfusion
DAT	Direct antiglobulin test	**UK**	United Kingdom
Hb	Haemoglobin	**USA**	United States of America
NICE	National Institute for Health and Care Excellence		

Key SHOT messages

- It is important that atypical complications noted in patients post transfusion continue to be reported to SHOT. This category includes those that are temporally correlated to transfusion but with non-specific clinical features that cannot be classified into any of the other known categories. This will help understand of these complications better, identify risk factors, and develop risk-reduction strategies
- All appropriate investigations should be carried out in case of any suspected transfusion reactions as per BSH guidelines (BSH Tinegate et al. 2012)
- Reporters must submit all relevant information including results from any investigations done when reporting the incident to SHOT to help categorise and assign imputability to reported cases

Recommendation

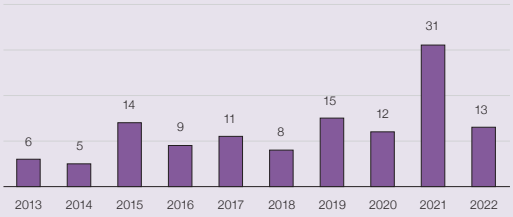
- Reporters are encouraged to continue to report cases with unusual reactions to transfusion

Action: All staff involved in transfusion

Headline data 2022

Number of reports n=13
Deaths n=1
Major morbidity n=1

UCT reports by year



Demographic data

Male n=7
Female n=6
Adults n=11
Paediatric n=2

Blood component data

Red cells n=8
Platelets n=5
Plasma n=0
Multiple components n=0
Other n=0

Introduction

This category includes cases with reactions reported in patients with a temporal relation to transfusions but cannot be classified into other categories. These are uncommon and uncategorisable. Patients often have multiple comorbidities which may have contributed to the transfusion complication. Reporting and reviewing these will help in our ever-evolving understanding of these cases and will help improve patient safety in transfusion by implementing appropriate risk-reduction measures. Occasionally, error reports that do not fit under other categories are included here 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 19.1: A sick patient with multiorgan dysfunction deteriorated following a red cell transfusion

A male patient in his mid-30s with pituitary hypogonadism, decompensated alcoholic liver disease and COVID-19 was receiving a red cell transfusion when he became tachycardic, tachypnoeic with increased work of breathing and increasing oxygen requirement. Arterial blood gases showed a deranged metabolic state. The transfusion was stopped, with increased ventilatory and vasopressor support. The laboratory investigation of the transfusion reaction showed no discrepancies or incompatibility, and the donor unit was tested and found to be suitable for transfusion. The pre- and post-transfusion group and screen samples had negative antibody screens, but had a 1+ IgG reaction on the DAT. No serological evidence of a transfusion reaction was noted by the laboratory. The patient had initially stabilised after stopping the transfusion but later died of multiorgan failure.

This was clearly a sick patient with multi-organ dysfunction with several contributory factors and highlights the challenges of managing transfusion support in such patients.

Major morbidity n=1

Case 19.2: Hypertension during red cell transfusion

A female patient in her early 60s with adenocarcinoma of the lung became hypertensive during a two-unit red cell transfusion as a day case. Observations taken pre transfusion were within normal range and the TACO risk assessment did not reveal any risk factors. The highest BP record noted was 200/103mmHg. The patient continued to feel well with no pulmonary symptoms, and the rest of the observations remained in range. Furosemide was administered as prescribed, and the patient

was admitted to the ward for overnight monitoring. The patient recovered uneventfully. It was noted that the pre-transfusion Hb was 92g/L raising the question of the need for transfusion support in this patient and an avoidable complication/admission.

Red cell transfusions are frequently overused and are associated with increased risk of patient harm and added healthcare costs, without conferring additional value. Conservative blood use, often referred to as 'restrictive transfusion practice,' is recommended in stable, non-bleeding patients by NICE and the Choosing Wisely campaigns in Canada, the UK, and the USA (see references at the end of the chapter).

Other cases n=11

Several other cases were reported in this category and have been detailed in the supplementary information on the SHOT website (https://www.shotuk.org/report-summary-and-supplement-2022/).

Conclusion

Transfusion reactions range from clinically benign, to life-threatening and can be acute or delayed. The nature of the reaction may not be immediately apparent, as many reactions begin with non-specific symptoms. Patients receiving transfusions often have complex underlying clinical conditions, the symptoms of which may mimic a transfusion reaction. Close monitoring and prompt management of patients experiencing symptoms or signs consistent with an acute transfusion reaction is vital to minimise the impact of the reaction and optimise patient safety. As evident from the cases included in this section, it is often challenging to attribute imputability of the patient's reaction/complication to transfusion when there are multiple ongoing medical and surgical issues in the patient. But all cases need to be reviewed to ensure that learning from these events helps inform and improve practices.

References

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Serious Hazards of Transfusion