27 Alloimmunisation n=236

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Definition:

Alloimmunisation is defined as demonstration of clinically significant red cell antibodies after transfusion, which were previously absent (as far as is known), when there are no clinical or laboratory signs of haemolysis.

Final report

SHOT has been collecting data on alloimmunisation since 2010, although always in a voluntary reporting category. It was introduced partly because the International Society of Blood Transfusion (ISBT) has a defined category for delayed serological transfusion reaction (synonymous with alloimmunisation), and partly because cases were being reported as haemolytic transfusion reactions (HTR) and having to be withdrawn by SHOT.

Before 2012, a patient with a new antibody and a positive direct antiglobulin test (DAT) post transfusion met the SHOT definition of HTR even where there was no biochemical or clinical evidence of haemolysis. This was changed in 2012 to categorise such cases as alloimmunisation rather than HTR. The number of reports of alloimmunisation has increased each year, and is likely to be the tip of the iceberg, as new cases are only recognised if a new sample happens to be tested at some point post transfusion.

Some interesting data have emerged over the last 5 years, demonstrating a different profile of antibody specificities to those reported in the HTR category. However, this picture is similar each year, and with the exception of new cases of anti-D resulting from deliberate transfusion of D-positive components to D-negative recipients, there have been no useful learning points or recommendations to be made.

Following a review by the Working Expert Group, SHOT has decided to stop collecting reports of alloimmunisation from January 2016. Reporters are requested to report cases of new antibody formation as HTRs, only where there is biochemical or clinical evidence of haemolysis.

SHOT will continue to analyse data from cases where a new anti-D is detected in pregnancy. Such cases should be notified to SHOT via the website so that the reporter can download a questionnaire.

Number of cases

There are 236 cases, including 1 transferred from HTR, and 1 from right blood right patient (RBRP). This is a 55% increase from last year, and probably just represents an increase in reporting awareness.

Age of patients

Patients ranged from 1 to 97 years, with a median of 69 years.

Specificity of new antibodies identified post transfusion

Table 27.1 shows these in order of how commonly they were identified, rather than by blood group system, and the top 4 are the same as last year. It is notable that the profile of the antibodies identified differs from those reported in the delayed haemolytic transfusion reaction (DHTR) category and is similar to last year. The majority of antibodies causing DHTRs were anti-Jk^{a}, whereas the vast majority in this chapter are anti-E, anti-K and anti-c, reflecting the higher clinical significance of Kidd antibodies in respect to haemolytic transfusion reactions.

The definition states that antibodies should be of clinical significance, and some of those reported have been classed as 'unlikely to be of clinical significance' (Milkins et al. 2013), e.g. anti-Le^a and anti-Lu^a. However, as there is no absolute definition of clinical significance they have all been included in this analysis and report.

Specificity	Number of cases
E	68
K	30
Mixture including Rh (includes 2 with anti-D+C)	24
c (+/-E)	22
Fy^a	18
Jk^a	16
Lu^a	13
Jk^b	9
e (+/-C)	5
C	5
Other mixture	5
Kp^a	5
M	4
C^w	3
D	2
Fy^b	2
S	2
One each of Le^a, f	1 of each (2 cases)
No specificity given	1
Total	**236**

Table 27.1: Specificity of new antibodies

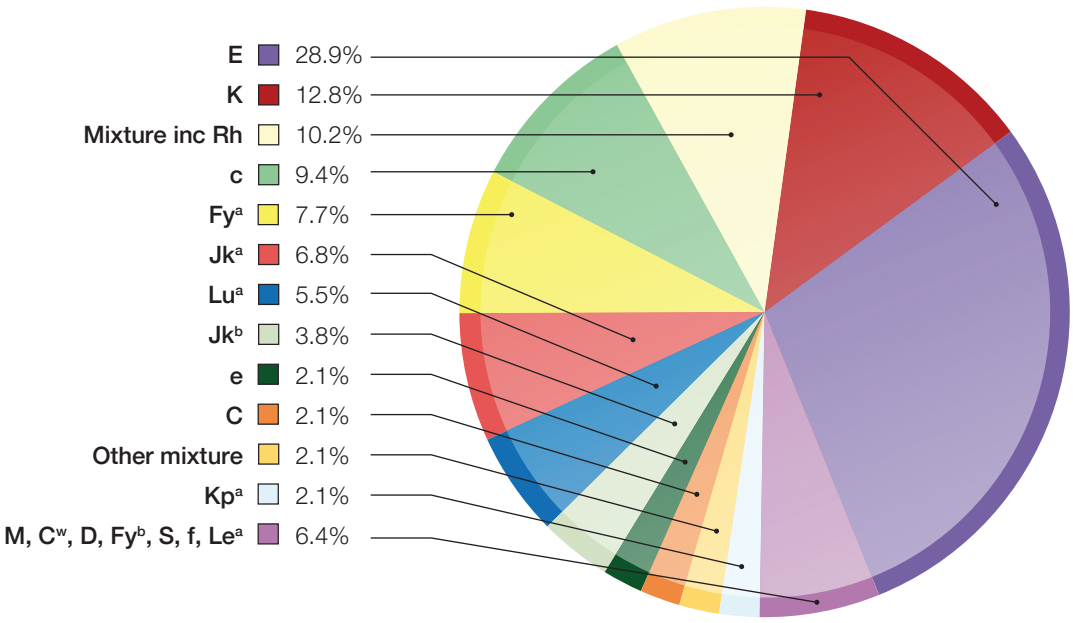

Figure 27.1: Percentage of new antibodies by type

Development of anti-D n=4

Three elderly female patients and one male patient developed anti-D following deliberate transfusion of D-positive red cells.

Interval between the transfusion and detection of new antibodies

The time intervals reported ranged from 4 days to weeks, months or even years.

Reference

BCSH Milkins C, Berryman J et al. (2013) **Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories**. Transfus Med 23, 3–35