

Blood donation complications: pilot data from international surveillance database

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Background

The International Haemovigilance Network is developing an international surveillance database of transfusion-associated adverse reactions and events (ISTARE) for the purpose of sharing information and analysing trends on adverse reactions and adverse events associated with the donation-transfusion chain. This analysis reviews data on complications of blood donation, voluntarily submitted by participating hemovigilance systems in two pilot phases.

Method

In 2008 and 2009 contact persons from national or regional hemovigilance systems were asked to enter data on reported complications of blood donations in 2006-8, along with denominator data, in an Excel spreadsheet (Figure 1). This took place as part of a data collection exercise in which recipient hemovigilance data were also collected. A similar data collection exercise (2009 data) took place in 2010. Participation is voluntary and anonymous. For presenting results, country data are shown in coded fashion.

Participants were asked to classify data using the ISBT Standard for surveillance of donation complications. The main types of complications, vasovagal reactions (VVR) and local complications related to venepuncture, are subclassified and graded for severity. In 2008, separate data were requested for whole blood donation (WBD) and for apheresis. The steering group sent questions for clarification of data where necessary. User comments were solicited.

Results

Nine out of 14 participating countries were able to contribute donor complication data in one or more years, covering a total of approximately 28 million donations (2006-8). Detail of data improved progressively. Some countries providing data on transfusion reactions in the ISTARE pilots are not able to give data on donation complications.

Table 1 summarises key rates for 2008. Some countries reported all levels of severity with a high proportion of mild and moderate events, others submitted mostly severe events (Graph A). The rate of severe events varied less between countries than the overall rates. Not all countries are able to provide separate complication data for whole blood donation and apheresis (Graph B).

In 2010, nine countries provided data on donation complications in 2009 (14 million donations). Four countries were able to provide at least partial data for the first time. Countries with several years of data showed similar rates between years (Graphs C and D).

Figure 1A and B Data collection spreadsheet

Search for donor codes in adjacent columns are included in the table: ☐ No ☐ Yes

Donations*	Number of whole blood donations				Number of apheresis donations				Total	Number of reported complications			
	Total	Severe	Moderate	Mild	Total	Severe	Moderate	Mild		Total	Severe	Moderate	Mild
Collection type													
Whole blood													
Apheresis													
Red cells													
Platelets													
Plasma													
Multiple components													
Total													

*Successful donations: units that met the specifications for processing

Local = venipuncture reaction

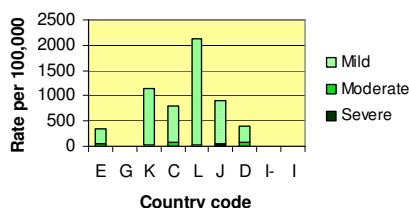
Platelets and cryoprecipitate are not used in this table

Comments:

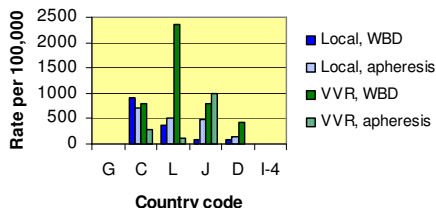
Table 1 Summary data on rates of donation complications, 2008

Rate (2008) per 100,000 donations	Median of country rates	Min	Max	No. of countries
Total (incl. other donation complications)	511	12	2516	9
Vasovagal	411	5	2139	9
WBD	611	4	2346	6
Apheresis	62	0	989	6
Rate of severe VVR	2	0	43	9
% severe (of total VVR)	1.2%	0%	38%	
% delayed (of total VVR)	14%	0.2%	50%	8
Local complications	88	4	905	9
WBD	84	3	909	6
Apheresis	301	4	710	6
Rate of severe local compl.	2	0	21	8
% local (of all severe complications)	8.3%	0%	93%	7

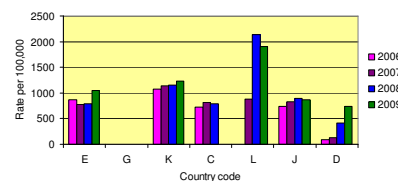
A Rate and severity of vasovagal reactions, 2008



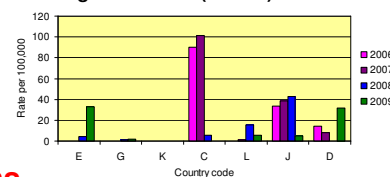
B Rate and severity of vasovagal reactions, 2008



C Vasovagal reactions (total)



D Vasovagal reactions (severe)



Discussion

The rate of total reported complications varies more than 100-fold between countries contributing data. At least part of this variation can be explained by differences in spectrum of severity of events captured. Rates of severe events are more similar between countries. The differences which remain suggest that routinely collected data cannot yet be fully mapped to the ISBT international surveillance definitions. Exploration and discussion of data with participating systems is necessary to improve uniformity of data submission.

Conclusions

In a series of data collection exercises the number of countries able to contribute data on donation complications has increased. Countries provided progressively more detailed information. Possible future developments include benchmarking and trending, particularly of severe events.