TEN YEARS OF HAEMOVIGILANCE IN CATALONIA

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Background

The Haemovigilance system was created in Catalonia in 2002 and since then it has been working to analyse transfusion reactions, adverse incidents and near misses events and to elaborate recommendations in a yearly report. In 2009, electronic notification was made available to hospital Haemovigilance Officers.

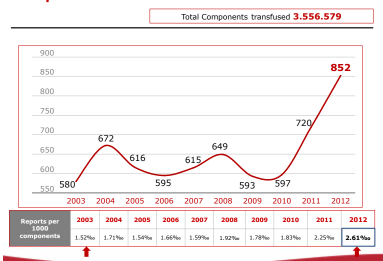
Aims

To analyse the 10-year data of Haemovigilance in Catalonia.

Results

Number of blood components transfused and number of reports

In 10 years, 3.556.579 blood components were administered and 6309 notifications were collected: 74% corresponded to transfusion reactions, 6% to adverse incidents and 20% to near misses (Table 1 and 2).



Reports per 1000 components	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	1.52‰	1.71‰	1.54‰	1.66‰	1.59‰	1.92‰	1.78‰	1.83‰	2.25‰	**2.61‰**

Table 1. Reports 2003-2012

Reactions and Adverse events 2003-2012

	n	%
1. Adverse Reactions	**4660**	**73.86**
1.1 Immune Reactions	3916	84.03
1.2 Discomfort	459	9.84
1.3 Cardiovascular complications	259	5.55
1.4 Transfusion Transmitted Infection	4	0.08
1.5 Haemosiderosis	18	0.38
1.6 Unclassifiable complications	4	0.08

	n	%
2. Transfusion adverse events	**1649**	**26.14**
2.1 Incidents (Blood Component was transfused)	381	23.11
2.2 Near misses (Blood Component was not transfused)	1268	76.89

Table 2. Reactions and adverse events 2003-2012

Transfusion-associated Mortality Catalunya 2003-2012

N.	Cause	Year	Imputability
1	TRALI	2003-2004	1 Possible
2	TRALI	2003-2004	2 Probable
3	TRALI	2003-2004	2 Probable
4	TRALI	2003-2004	3 Certain
5	Anaphylactic Reaction	2004	1 Possible
6	TACO	2006	1 Possible
7	HTR ABO incompatible	2007	3 Certain
8	HTR ABO incompatible	2009	3 Certain
9	HTR ABO incompatible	2012	3 Certain

Table 3. Transfusion-associated mortality 2003-2012

Deaths associated with blood transfusion

Nine deaths were reported: 4 were associated with TRALI (2003-2004), 1 with an anaphylactic reaction, 1 with Transfusion Associated Cardiac Overload (TACO) and 3 with an acute ABO incompatible haemolytic reaction. In 6 cases the level of imputability was probable or definite (Table 3).

TRALI (Table 4)

In 2007, a selective "male plasma only" policy was implemented to reduce TRALI incidence. Comparing two periods, 2002-2007 and 2008-2012, the incidence of TRALI was reduced from 2,7 to 0,6/ 100.000 blood components transfused .

The use of plasma exclusively from male donors

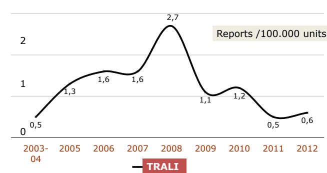


Table 4. Impact of the use of plasma exclusively from male donors

Trends in Transfusion Associated Circulatory Overload (TACO)

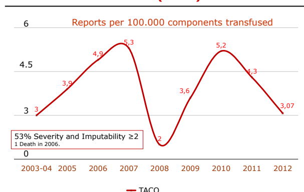


Table 5. Trends in Transfusion-associated circulatory overload (TACO)

TACO (Table 5)

Among cardiovascular complications (n=259), 50% corresponded to TACO (n=121) with a high level of severity and imputability (≥2) in 44% of cases. Most patients were old patients with cardiovascular risk factors which were not considered in medical orders.

Transfusion-transmitted infection (TTI)

Only 3 bacterial transmitted infections were fully documented with positive cultures both in patient samples and blood components:

- *Klebsiella pneumoniae* (2007) in a Red Blood Cell unit,
- *Staphylococcus aureus* (2008) in a Red Blood Cell unit,
- *Staphylococcus epidirmidis* (2009) in a Platelet Pool.

In addition, 1 case of Hepatitis B transmission was documented in 2005.

Transfusion Incidents (n=381)
(Blood component was transfused)

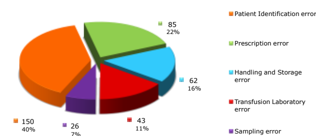


Table 6. Transfusion Incidents.

Classification of clinical incidents

Description	n	%
Wrong Blood Component Transfused	177	46.5
Inappropriate and unnecessary Transfusions	72	18.9
Unsafe Transfusions	67	17.6
Specific Requirements not met	65	17
	381	**100**

Table 7. Classification of clinical Incidents

Transfusion Incidents

Among errors, identification errors were most frequent (40%) followed by prescription errors (22%) (Table 6 and Table 7).

Near Misses

Most near misses also corresponded to patient identification errors at sampling (52%) and prescription (22%) (Table 8).

In 2010 a patient safety national campaign was launched from the Commission to enforce identification practices.

In Table 9 we show the trends of Incidents and Near Misses

Near Misses (N=1268)
(Blood Component was not transfused)

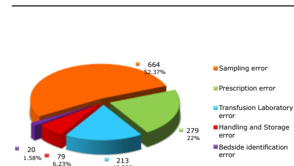


Table 8. Near Misses

Trends in Incidents and Near misses 2003-2012

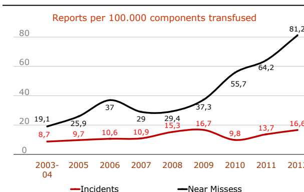


Table 9. Trends in Incidents and Near Misses

Conclusions

The most severe risks detected in the first 10 years of Haemovigilance corresponded to acute haemolytic reactions related to ABO incompatibility, TRALI and TACO. TACO appears as an old but re-emerging severe complication of blood transfusion.