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POOLED VERSUS APHERESIS PLATELETS : COMPARISON OF DONORS' AND RECIPIENTS' HAZARD IN FRANCE, 2009-2011

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Background

- Increasing demand for PC
 - +10 % from 2009 to 2011
- Decreasing supply of Apheresis PC
 - Deferral of non nulliparous women from apheresis...

Response :

- Higher production of Pooled PC

Meanwhile : 2009-2011 first data on donors' hemovigilance

Objectives

To compare the global risk level of

- Apheresis PC versus Pooled PC

both for

- donors

and

- recipients
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Method

- 23 French regions (96% of French pop.)
- Merge of detailed data sets on :
 - Donations
 - Serious Adverse Reactions (SAR) of donors
 - Transfusions
 - All Adverse Reactions (AR) of recipients
- 2009 - 2011

Provided by the Regional Coordinators of Hemov.
SAR, validated by expert groups

Results

Recipients : PC transfused

Transfusion : number of transfused PC

	APC		PPC		Total PC
2009	176,497	71%	73,377	29%	249,874
2010	160,288	61%	103,366	39%	263,654
2011	140,962	51%	136,364	49%	277,326
Total	477,747	60%	313,107	40%	790,854

Recipients : adverse reactions

Adverse reactions of recipients:

Rates for 1,000 transfused PC

	<i>Grade 1</i>	<i>Grade 2</i>	<i>Grade 3</i>	<i>Grade 4</i>	All*	SAR **
APC	6.34	0.25	0.19	0.02	6.87	0.46
PPC	3.17	0.15	0.12	0.01	3.50	0.28

* $p=10^{-6}$ ** $p=10^{-5}$

Recipients

■ Kind of Serious Adverse Reactions

Rates for 1000 Transfused PC

	Anti HLA or HPA *	Allergy *	TRALI *	TTBI †	Minor ABO †	TACO †
APC	0.04	0.25	0.04	0.02	0.02	0.10
PPC	0.02	0.11	0.02	0.01	0.03	0.06

(Poisson)

* p < 0.05

† NS

Donors : donations

Donations

Donations by sex	2010		2011	
	APC	W. Blood	APC	W. Blood
Males	83,753	1,207,250	80,914	1,279,831
Females	58,015	1,079,136	43,413	1,156,468
Total	141,768	2,286,386	124,327	2,436,299

Donors : SAR

Donors' Serious Adverse Reactions

- Rates for 1,000 Donations

Donors' SAR by sex	2010		2011	
	APC	W. Blood	APC	W. Blood
M	0.76	0.24	1.82	0.98
F	1.38	0.50	3.64	1.54
Both	1.02	0.35	2.45	1.22

All APC/WB $p < 10^{-6}$
All Male/Female $p < 10^{-5}$

Summary : Combined Donors' and Recipients' hazard

- Individual level (rates per 1,000)

	APC	PPC (W. Blood)
Donors' SAR 2010-2011	1.69	0.8
Recipients' AR 2009-2011	6.87	3.50
Recipients' SAR 2009-2011	0.46	0.28

- Population level: switch from APC to PPC

Hazard for APC Donors' : suppressed without increase of risk for whole blood Donors'

Two fold reduction of global risk for PC Recipients

Feasibility and costs

- No known difference of efficacy PPC/APC
 - Some situations require APC
- Yearly, 2.5 millions of WB donations could provide 400,000 PPC
 - Demand < 300,000
- Costs :
(France for a 4.5 10¹¹ bag incl. dispensation)
 - APC : 489.51 €
 - PPC : 337.59 € (-31%)

Conclusion

- Compared to PPC, APC are
 - at higher risk both for Donors and Recipients
 - at higher cost
 - have the same efficacy
 - Hemovigilance usefulness
 - Recipients : already allowed partial switch to PPC
 - Donors : improved apheresis practice, could lead to further changes in PC supply policy
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