Pathogen inactivated vs conventional platelet concentrates

Swiss Haemovigilance Data

Swisstransfusion
Basel, 6 & 7 September 2012

M. Jutzi, M. Rüesch Clinical Reviewers Haemovigilance
B. Mansouri Taleghani, BTS SRC
Decision

Joint decision in 2009 by Swissmedic and Blood Transfusion Service of the Swiss Red Cross (BTS SRC) to implement the INTERCEPT® Pathogen Inactivation (PI) procedure for all platelet concentrates (PC) in Switzerland

Nationwide implementation in 2011
Expectations and possible concerns

• No more septic transfusion reactions due to platelet concentrates

• Decrease in number and severity of platelet related transfusion reactions

• Increase in platelet collection / use (~ 15%)

• Acceptance problems with clinicians possible
Observations – transfusion data

2010
• 29‘900 PCs transfused (conventional only)

2011
• 33‘000 PCs (+ 10%)
  – 6‘600 conventional PCs, (~ 20%)
  – 26‘500 PI-PCs (~ 80%)
Observations – transfusion data 2

- RBC units
- FFP units
- PLT units

Swisstransfusion 2012, Basel

Slide provided by B. Mansouri Taleghani
Observations – transfusion data 3

- 2011 increase in PCs transfused of ~ 10% possibly due to:
  - General increase in the number of patients needing PC transfusions
  - Precautionary raise of the transfusion trigger (from 5 to 10 G/l) for prophylactic platelet transfusions in some clinics
  - PC’s transfused more readily in others (PI products considered safer)
  - Pathogen inactivation procedure as contributing factor to increase not excluded
Observations – transfusion data 4

- With the introduction of pathogen inactivation, the proportion of whole blood derived PCs increased from 14 to 23%  
  - Reflecting the reduced significance of possible bacterial contamination  
  - To meet the rising need  
  - As contribution to cover the costs of pathogen inactivation
Observations – Haemovigilance

Severity grades: 1 mild 2 severe / permanent harm 3 life threatening 4 fatal

Swisstransfusion 2012, Basel
Observations – Haemovigilance 2

TRs by category for cPC and PI-PC 2010 and 2011
Risk of transfusion for PCs

TR risks by category for cPC and PI-PC 2010 and 2011 (in ‰)
## Risk of transfusion for PCs 2

<table>
<thead>
<tr>
<th>Transfusion reactions</th>
<th>2011 PI-PC’s</th>
<th>2011 conventional PC’s</th>
<th>2010 (only conventional PCs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Units transfused</td>
<td>26’454</td>
<td>6’614</td>
<td>29‘900</td>
</tr>
<tr>
<td>Risk = 1 reaction per x PC transfusions</td>
<td>Reports</td>
<td>Risk</td>
<td>Reports</td>
</tr>
<tr>
<td>All high imputability reports</td>
<td>60</td>
<td>~1:440</td>
<td>43</td>
</tr>
<tr>
<td>High imputability grade 3 reactions</td>
<td>3</td>
<td>~1:8800</td>
<td>2</td>
</tr>
</tbody>
</table>

Swisstransfusion 2012, Basel
Summary

• As expected, no transfusion transmitted bacterial infections were observed after transfusion of pathogen inactivated platelets

• Less than 2/3 of the reported TRs occurred after the transfusion of PI-PC (80% of all PCs transfused in 2011), whereas the 20% conventional PC’s generated more than 30% of all platelet-related reports.

• Lower risk for adverse events observed after introduction of pathogen inactivation for PCs, reduction of risk for life threatening reactions from 1:3’300 to 1:8’800
Conclusion

• PI substantially reduces the risk for platelet related transfusion transmitted bacterial infections

• The procedure also reduces the risk for other transfusion reactions due to platelet concentrates

• Haemovigilance data support the favourable safety profile of pathogen inactivated PCs

• Future development is expected to confirm the trend towards declining platelet related TRs
Thank you for your attention

Swisstransfusion 2012, Basel