Table 4: Main clinical adverse events

<table>
<thead>
<tr>
<th>Event</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Late</td>
<td>1a</td>
<td>0.4</td>
</tr>
<tr>
<td>Non-valve related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early</td>
<td>11</td>
<td>4.3</td>
</tr>
<tr>
<td>Late</td>
<td>7</td>
<td>2.8</td>
</tr>
<tr>
<td>NA</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>In hospital complications</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Endocarditis</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Endocarditis only on tricuspid valve</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Bleeding</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Haemothorax</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>Thromboembolism</td>
<td>1</td>
<td>0.4</td>
</tr>
<tr>
<td>Stroke</td>
<td>2</td>
<td>0.8</td>
</tr>
<tr>
<td>PRIND</td>
<td>1</td>
<td>0.4</td>
</tr>
</tbody>
</table>

*aOne patient with endocarditis died at 50 days after surgery.
*bOne patient with endocarditis only on tricuspid valve died at 64 days after surgery.
*cOne patient with stroke and pneumonia died at 146 days after surgery.
*dEndocarditis.

The increased risk of thrombocytopenia is a transient phenomenon.

Study patients showed no clinical consequences directly related to the platelet decrease. Moreover, no postoperative echocardiographic evidence of dysfunction was reported.

A word of caution must be used in defining thrombocytopenia as ‘real’ or that postoperative thrombocytopenia is a new phenomenon, since postoperative platelet count alone can be misleading due to its high variability and the evidence that pre-operative values can strongly affect the postoperative course, at least in the first few weeks after surgery. The results of this study strongly support that postoperative thrombocytopenia is a transient phenomenon, self-recovering after a few days without treatment and without any observed recurrence in late follow-up (including routine visits after discharge).

Since thrombocytopenia after aortic surgery is a complex and multi-factorial phenomenon, any consideration concerning possible influencing factors (i.e. type of bio-prosthesis) should be carefully studied along with other assessments in addition to using platelet counts.

We know that one of the main limitations of this study may be the lack of a control population with a different prosthesis, but since thrombocytopenia after cardiac surgery is such a multi-factorial phenomenon an eventual prospective randomized trial should regard a very large cohort of patients. Further studies are needed to clarify the physiopathological bases of platelet activation. As a general recommendation, in view of platelets consumption related to the many factors described, specific attention should be paid to thrombocytopenic patients undergoing any cardiac surgery procedure.

The high incidence of platelet reduction or pseudo-thrombocytopenia after FS valve implantation is for sure an interesting scientific subject to speculate on, but the limited number of mastered elements cannot impact on the clinically proven safety of the device as reported in the European Study [15].

Conflict of interest: Dr Repossini is a consultant for Sorin Biomedica Cardio S.R.L.

REFERENCES


eComment. Platelet transfusion after aortic valve replacement by the Freedom Solo bioprosthesis

Author: Jamil Hajj-Chahine
CHU de Poitiers, 2 rue de la Milétrie, 86000 Poitiers, France
doi:10.1093/icvts/ivs049
© The Author 2012. Published by Oxford University Press on behalf of the European Association for Cardio-Thoracic Surgery. All rights reserved.

I read with great interest the article by Repossini and colleagues [1] regarding postoperative platelet reduction after the implantation of Freedom Solo, a stentless pericardial bioprosthesis.

Within a larger cohort of patients, the authors confirmed data already published [2] by showing a significant reduction and a slower recovery of platelet counts during the first postoperative week after implantation of the Freedom Solo bioprosthesis. This concise phenomenon was not associated with clinical consequences (no major hemorrhagic or thromboembolic events during
hospitalization) or haemodynamic dysfunction of the implanted valve. The authors showed that compared to patients with normal platelet counts, patients with any degree of preoperative thrombocytopenia had an increased odds ratio of 8.69 of being in the group with platelet count <150x10³/mm³.

I think there are some points that should be emphasized. Did patients receive platelet concentrates? On the third day after surgery, 20.7% of their patients showed severe or very severe thrombocytopenia. It is needless to say that platelet transfusion would have been considered in these patients before retrieval of catheters or epicardial leads. Platelet transfusion is associated with an increased likelihood of postoperative infection and transfusion-related acute lung injury (TRALI), which is a potentially fatal complication [4]. Alfrevic and colleagues [5] recently demonstrated that platelet transfusion after cardiac surgery increased the prevalence of vasoplegia and therefore increased morbidity. In considering the clinical implications of these findings, the practice of implanting a Freedom Solo in patients with preoperative thrombocytopenia is not justified. It is also important to be aware of the increased risk of thrombocytopenia after aortic valve replacement with the Freedom Solo prosthesis and patients should be informed about this possibility.

In the interim, research into the exact mechanism behind postoperative thrombocytopenia after implantation of the Freedom Solo valve is ongoing, and efforts to limit the risks of infection and TRALI to our patients by reducing platelet transfusion are warranted.

Conflict of Interest: None declared

References