Blood loss, anaemia and blood transfusions are independent predictors for deteriorating treatment results and therefore life quality of the patient. This includes an increase in morbidity and mortality, as well as the extension of the average hospital stay. That is why bleeding, anaemia and blood transfusions are described in the literature as ‘trauma triad of death’.

Bleeding complications and transfusions cause a yearly financial burden worth billions of Euro to health care systems. The treatment costs for transfused patients are significantly higher than for non-transfused patients. In addition the mortality is increased 1,7 fold and the rate of infection 1,9 fold .

**Résumé**

**Economic impact of bleeding and Patient Blood Management (PBM)**

**ROTEM® - Targeted Therapy stops the Bleeding.**

**Bleeding complications lead to a massive cost burden**

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That is why bleeding, anaemia and blood transfusions are described in the literature as ‘trauma triad of death’.

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**Bleeding complications lead to:**

<table>
<thead>
<tr>
<th>Interventions during additional hospital stay</th>
<th>Cardiac surgery</th>
<th>Vascular surgery</th>
<th>Organ surgery</th>
<th>Thoracic surgery (w/o Cardiac surgery)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 4.6 days</td>
<td>+ 3.3 days</td>
<td>+ 5.1 days</td>
<td>+ 5.6 days</td>
<td></td>
</tr>
<tr>
<td>General surgery</td>
<td>+ 1.2 days</td>
<td>+ 3.6 days</td>
<td>+ 4.5 days</td>
<td></td>
</tr>
</tbody>
</table>

The treatment costs for transfused patients are significantly higher than for non-transfused patients. In addition the mortality is increased 1.7 fold and the rate of infection 1.9 fold.

**Literature**

PBM is a multi-disciplinary, evidence-based treatment model, which helps to optimise the patient’s own bloodvolume, minimise blood loss and thereby significantly reduces and respectively avoids transfusions.

The key role of point of care diagnostics with ROTEM® within the PBM

Using POC testing with ROTEM®, the causes of intra-operative and post-operative bleeding can be diagnosed correctly and timely and treated in a targeted manner, and massive bleeding resp. haemorrhagic shock can be prevented.

This in turn can avoid transfusion-related side effects and complications. Study results show that POC testing with ROTEM® can result in significant net cost savings of blood products.

Large observational studies allow the conclusion, that the prevention of bleeding complications and transfusions can reduce the therapy costs, depending on mode of intervention by up to 48%.

The benefit of PBM® and ROTEM® for patients and the service provider

Reduction of average hospital stay of 10-33% 
Reduction of mortality up to 41% 
Reduction of RBC transfusions of 10-86% 
Reduction of rate of infection up to 81% 
Reduction of total therapy costs 10-24%

The patient blood management concept was launched in 2010 by the World Health Assembly (the highest decision taking body) as an important principle to improve patient safety. All WHO member states were requested according to WHA 63.12, to implement this concept in a timely manner.

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