IMPACT APC – Autologous Platelet Concentrate

Natural healing cascade
If an injury occurs in the body, it reacts with a complex healing cascade in order to heal the wound as quickly as possible. At the site of the defect, the thrombocytes aggregate and form the blood clot. In addition, growth factors are released by the degranulation of thrombocytes. They act synergistically and favor the regeneration process.

APC – highly concentrated platelet concentrate
IMPACT APC is a highly concentrated platelet concentrate which has been optimized specifically for a maximum yield of platelets. The end volume, with which the analysis was carried out, is a concentrate of 1 ml. The user has the possibility of varying the end volume himself. IMPACT APC can be added to every surgical wound in order to stimulate the body’s own healing response.

Growth factors distinctly increased in platelet concentrate
The early stages of the healing cascade are primarily mediated by platelets and the release of cellular growth factors. There is a direct linear correlation between platelet concentration and growth factors. In IMPACT APC, the platelets are partially activated already. For this reason, the growth factors are distinctly increased compared to whole blood.

<table>
<thead>
<tr>
<th>Types of cell</th>
<th>Platelets</th>
<th>Leukocytes</th>
<th>Erythrocytes</th>
<th>Platelets</th>
</tr>
</thead>
<tbody>
<tr>
<td>APC</td>
<td>&gt; 6 ×</td>
<td>6 ×</td>
<td>&lt; 0.9 ×</td>
<td>86 %</td>
</tr>
</tbody>
</table>

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<table>
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<th>Concentration compared to whole blood ¹</th>
<th>Yield</th>
</tr>
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<tbody>
<tr>
<td>PDGF AB</td>
<td>VEGF</td>
</tr>
<tr>
<td>APC</td>
<td>28 ×</td>
</tr>
</tbody>
</table>

→ PDGF AB initiates, amongst other things, the healing of connective tissue and increases mitogenesis, angiogenesis and macrophage activity.
→ VEGF takes effect primarily in vasculogenesis as well as in angiogenesis.
→ TGF β increases chemotaxis as well as mitogenesis and stimulates the storage of collagen.

(¹) Serum concentrations: TU Munich, Institute of Medical and Polymer Engineering
IMPACT APC – exemplary indications

ORTHOPAEDICS

• Ligament rupture (collateral ligament and lateral collateral ligament)
• Bursitis (Bursitis trochanterica)
• Plantar fasciitis, lateral epicondylitis / tennis elbow
• Pseudarthrosis
• ACL reconstruction

IMPACT APC can also be combined with other intra-operative therapeutic approaches, such as in combination with scaffolds for cartilage repair or with autologous or allogenic bone graft.

DERMATOLOGY / PLASTIC SURGERY

• Chronic wounds/ulcers
• Reconstruction (e.g., breast reconstruction in combination with fat graft)
• (Split) skin grafts

LITERATURE SELECTION


