Analysis of Proteins Associated with the Carmeda® Bioactive Surface (CBAS®) After Acute Blood Contact

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Carmeda® Bioactive Surface (CBAS®)

- heparin-based surface treatment for medical devices
- end-point covalent attachment
- non-leaching
- specific uptake of antithrombin
- catalytic, inhibits thrombin and other coagulation proteases (Xa, XIIa, and others)
- improved hemocompatibility and thromboresistance

Animation of CBAS® on the GORE® PROPATEN® Vascular Graft
CBAS Thromboresistance, Reduced Platelet Attachment in Pre-Clinical Models

uncoated control

CBAS-coated


CBAS in Multiple Clinical Applications For More than 20 Years

• Perfusion Systems
• Ventricular Assist Devices
• Coronary Stents
• **Vascular Grafts**
• Venous Catheters
• Stent-Grafts
## Clinical Experience with the GORE PROPATEN® Vascular Graft

### Primary Patency in Below-Knee Bypasses

<table>
<thead>
<tr>
<th></th>
<th>1 yr</th>
<th>2 yrs</th>
<th>3 yrs</th>
</tr>
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<tbody>
<tr>
<td>Vein*</td>
<td>81%</td>
<td>72%</td>
<td>69%</td>
</tr>
<tr>
<td>(N=9703)</td>
<td>(N=5097)</td>
<td>(N=4789)</td>
<td></td>
</tr>
<tr>
<td>Propaten®</td>
<td>82%</td>
<td>75%</td>
<td>68%</td>
</tr>
<tr>
<td>(N=494)</td>
<td>(N=361)</td>
<td>(N=78)</td>
<td></td>
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<tr>
<td>Standard ePTFE*</td>
<td>66%</td>
<td>56%</td>
<td>52%</td>
</tr>
<tr>
<td>(N=1323)</td>
<td>(N=1038)</td>
<td>(N=686)</td>
<td></td>
</tr>
</tbody>
</table>

Overall Weighted Average Primary Patency from published clinical studies.

See Literature summary at goremedical.com/propaten/clinicaldata/
Background to the Current Study

- Heparin bioactivity persists over time in explants of chronically implanted CBAS-treated devices
- Reduced intimal hyperplasia in an animal model
- Does CBAS-treatment alter protein deposition and remodeling at the blood-device interface?

Intimal Hyperplasia Reduction

Methodology

Collect proteins from surface after recirculating blood contact.

Separate and analyze by conventional protein analysis methods.

Identify by mass spec and confirm with Western Blot.

Fresh human blood in Chandler Loop.

W. L. Gore & Associates
AT is the Dominant Protein Recovered from the CBAS® Surface

- [Diagram showing protein recovery from different surfaces: CBAS-Heparin Low Affinity, CBAS-Heparin, Dextran Sulfate Uncoated Control, ATIII, Other Proteins]
  - CBAS-Heparin shows high AT binding with anionic surface.
  - Dextran sulfate and uncoated control show lower AT binding.

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