Propensity Matched Comparison Of 2 IBDs
(1 From Cook And 1 From Gore):
Advantages And Limitations Of Each

Carlo Pratesi, MD
Giovanni Pratesi, MD
Vascular Surgery – University of Florence
Vascular Surgery – University of Rome "Tor Vergata"

Disclosures

Speaker name: Giovanni Pratesi
I have the following potential conflicts of interest to report:
✓ Consulting: Abbott, Cook, Cordis, Medtronic, WL Gore & Associates
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)
☐ I do not have any potential conflict of interest

Endovascular Treatment of Aorto-Iliac Aneurysms: Four-year Results of Iliac Branch Endograft
G. Pratesi et al., J Vasc Surg 2018
Vascular Surgery – University of Florence, University of Rome "Tor Vergata"
700 EVAR: 85 branch endograft (12.1%)
(September 2007 – August 2012)

4-year outcome N %
Non-AAA related mortality 7 8.6
Branch occlusion -
Iliac endoleak -
Reinterventions 3 3.7
CIAA shrinkage 43 53.1
Non IBD limb occlusion -
Buttock claudication 7 8.6

Chaikof et al., J Vasc Surg 2018

Iliac Branch: factors affecting outcomes

- Unilateral vs bilateral vs isolated aneurysm
- Tortuous anatomy
- Hypogastric involvement
- Bridging stents
- IBD stent-grafts
Iliac branched devices: current configurations

Cook's ZBIS vs Gore's IBE:
Advantages And Limitations Of Each

- Cook IBD:
  - Longitudinal independent stainless steel stent
  - Different proximal lengths, with longer overlapping zones
  - Need for an IIA mating stent
- Gore IBD:
  - Sinusoidal nitinol stent design
  - Increased conformability
  - Dedicated IIA component

Aim of the study
To compare early and late outcomes of endovascular treatment of aorto-iliac aneurysms with two different dedicated iliac branch devices:

- Cook ZBIS
  (Cook Medical, Bloomington, In, USA)
- Gore IBE
  (W. L. Gore and Associates, Flagstaff, Ariz)

Materials and methods

- Perioperative outcomes included technical success, IBD related complications, type I/II endoleak, conversion and mortality
- Follow-up data were analyzed with Kaplan-Meier curves in terms of survival, AAA-related survival, freedom from IBD-endoleak, freedom from IBD-reintervention. The results in the two groups were compared by means of the log-rank test.
- Statistical analysis was performed with dedicated Windows software (Statistical Package for the Social Sciences (SSPS) 23; SPSS Inc., Chicago, IL, USA)

Study Group

180 iliac branched devices implanted in the study period

- 123 Cook ZBIS (Group 1)
- 57 Gore IBE (Group 2)
Demographics and baseline characteristics

**Unmatched Groups**

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Group 1 (n=123)</th>
<th>Group 2 (n=57)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age</td>
<td>72.9 ± 8.3</td>
<td>70.7 ± 8.7</td>
<td>.39</td>
</tr>
<tr>
<td>Male sex</td>
<td>121 (98.4%)</td>
<td>57 (100%)</td>
<td>.33</td>
</tr>
<tr>
<td>Arterial hypertension</td>
<td>100 (81.3%)</td>
<td>50 (87.7%)</td>
<td>.28</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>63 (51.2%)</td>
<td>30 (52.6%)</td>
<td>.68</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>14 (11.4%)</td>
<td>9 (15.8%)</td>
<td>.41</td>
</tr>
<tr>
<td>CAD</td>
<td>53 (43.1%)</td>
<td>15 (26.3%)</td>
<td>.04</td>
</tr>
<tr>
<td>COPD</td>
<td>67 (54.5%)</td>
<td>32 (56.1%)</td>
<td>.64</td>
</tr>
<tr>
<td>CKD</td>
<td>7 (5.7%)</td>
<td>9 (15.8%)</td>
<td>.02</td>
</tr>
<tr>
<td>PAOD</td>
<td>12 (9.7%)</td>
<td>1 (1.8%)</td>
<td>.06</td>
</tr>
</tbody>
</table>

**Anatomical Features**

<table>
<thead>
<tr>
<th>Group 1 (n=123)</th>
<th>Group 2 (n=57)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Proximal neck diameter</td>
<td>23.9 ± 3.9 mm</td>
<td>22.9 ± 2.8 mm</td>
</tr>
<tr>
<td>Proximal neck length</td>
<td>24.5 ± 15.3 mm</td>
<td>25.7 ± 12.4 mm</td>
</tr>
<tr>
<td>Aortic diameter</td>
<td>44.9 ± 15 mm</td>
<td>48 ± 16.1 mm</td>
</tr>
<tr>
<td>Right CIA diameter</td>
<td>31.9 ± 12.3 mm</td>
<td>37.1 ± 13.7 mm</td>
</tr>
<tr>
<td>Left CIA diameter</td>
<td>27.7 ± 10.9 mm</td>
<td>30.7 ± 15.3 mm</td>
</tr>
<tr>
<td>CIA diameter on branched side</td>
<td>34.1 ± 10 mm</td>
<td>41.4 ± 13.7 mm</td>
</tr>
<tr>
<td>IIA diameter on branched side</td>
<td>11.2± 7.9 mm</td>
<td>10.5 ± 5.8 mm</td>
</tr>
</tbody>
</table>

**Matched Groups: 35 ZBIS vs 35 IBE**

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</thead>
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<tr>
<td>Mean age</td>
<td>72.9 ± 8.3</td>
<td>70.1 ± 8.7</td>
<td>.21</td>
</tr>
<tr>
<td>Male sex</td>
<td>35 (100%)</td>
<td>35 (100%)</td>
<td>1</td>
</tr>
<tr>
<td>Arterial hypertension</td>
<td>26 (74.3%)</td>
<td>30 (85.7%)</td>
<td>.20</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>14 (40%)</td>
<td>16 (45.7%)</td>
<td>.41</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>3 (8.6%)</td>
<td>2 (5.7%)</td>
<td>.50</td>
</tr>
<tr>
<td>CAD</td>
<td>9 (25.7%)</td>
<td>9 (25.7%)</td>
<td>1</td>
</tr>
<tr>
<td>COPD</td>
<td>21 (60%)</td>
<td>21 (60%)</td>
<td>1</td>
</tr>
<tr>
<td>CKD</td>
<td>2 (5.7%)</td>
<td>2 (5.7%)</td>
<td>1</td>
</tr>
<tr>
<td>PAOD</td>
<td>1 (1.7%)</td>
<td>0 (-)</td>
<td>.50</td>
</tr>
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**Anatomical Features**

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<tr>
<td>Proximal neck diameter</td>
<td>23.3 ± 2.4 mm</td>
<td>23.1 ± 2.5 mm</td>
</tr>
<tr>
<td>Proximal neck length</td>
<td>25.1 ± 17.5 mm</td>
<td>26.1 ± 13.5 mm</td>
</tr>
<tr>
<td>Aortic diameter</td>
<td>43.3 ± 15.6 mm</td>
<td>48.9 ± 17 mm</td>
</tr>
<tr>
<td>Right CIA diameter</td>
<td>30.6 ± 11.5 mm</td>
<td>35.1 ± 15.1 mm</td>
</tr>
<tr>
<td>Left CIA diameter</td>
<td>27.8 ± 10.4 mm</td>
<td>30.1 ± 14.8 mm</td>
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<td>CIA diameter on branched side</td>
<td>34.5 ± 9.1 mm</td>
<td>39.8 ± 14.7 mm</td>
</tr>
<tr>
<td>IIA diameter on branched side</td>
<td>12.7± 6.1 mm</td>
<td>10.5 ± 5.6 mm</td>
</tr>
</tbody>
</table>

**Perioperative Outcomes**

**Group 1** (ZBIS; n=35)

- Technical success: 35 (100%)
- IBD - occlusion: 1 (2.8%)
- IBD - Type I/III endoleak: (-)
- Adjunctive procedures: 35 (28.2%)
- Conversion: (-)
- Mortality: (-)

**Group 2** (IBE; n=35)

- Technical success: 35 (100%)
- IBD - occlusion: 1 (-)
- IBD - Type I/III endoleak: (-)
- Adjunctive procedures: 240 (21.7%)
- Conversion: (-)
- Mortality: (-)

**p**

- General anaesthesia: 28 (80%)
- Percutaneous access: 19 (54.2%)
- Access-related complications: 1 (2.8%)
- Procedure time: 158.1 ± 71.5 min
- Fluoroscopy time: 40.5 ± 11.3 min
- Systemic complications: 1 (2.8%)
- Hospitalization: 6.6 ± 2.9 days

**Systemic complications:** 1 miocardial infarction

**Outcomes at Follow-up**

**Group 1** (ZBIS; n=35)

- Mortality: 3 (8.6%)
- Aneurysm-related mortality: 2 (5.7%)
- Net occlusion: 0 (-)
- IBD type I endoleak: 1 (2.8%)
- IBD-related reinterventions: 2 (5.7%)
- Migration: 0 (-)
- Bridging stent occlusion: 2 (5.7%)
- Conversion to open surgery: (-)

**Group 2** (IBE; n=35)

- Mortality: 4 (11.4%)
- Aneurysm-related mortality: 1 (2.8%)
- Net occlusion: 0 (-)
- IBD type I endoleak: 1 (2.8%)
- IBD-related reinterventions: 1 (2.8%)
- Migration: 1 (2.8%)
- Bridging stent occlusion: 0 (-)
- Conversion to open surgery: 2 (5.7%)

**p**

- General anaesthesia: 8 (22.9%)
- Percutaneous access: 10 (28.6%)
- Access-related complications: 1 (2.8%)
- Procedure time: 155 ± 71.5 min
- Fluoroscopy time: 36 ± 17.3 min
- Systemic complications: 0 (-)
- Hospitalization: 6 ± 1.9 days

**Systemic complications:** 1 miocardial infarction

Mean follow-up was 46.7 months in group 1 (SD ± 36.3), 20.8 months in group 2 (SD ± 15.9); p <.001
Outcomes at Follow-up

Conclusions

- Iliac branch device is now considered the standard of care for endovascular repair of aorto-iliac aneurysms
- The propensity matched comparison between the Cook ZBIS and the Gore IBE devices showed similar, satisfying perioperative and mid-term outcomes, when used in appropriately selected patients
- Based on the comparable results of the two devices, we will continue to use a tailored device-selection policy according to the preoperative anatomy

Cook’s ZBIS vs Gore’s IBE: Advantages And Limitations Of Each