Propensity Matched Comparison of F/B/EVAR and Open Repair For TAAAs Shows That Endovascular Treatment Is Best

Piergiorgio Cao, MD, FRCS

Disclosure
Speaker name: Piergiorgio Cao

Proctorship for Cook Medical

Background

- TAAA repair is today performed with respectable results mainly in high-volume centers, regardless the technique

- Endo repair is attracting more and more patients with TAAA, most of which generally denied open repair

- Data supporting endo repair also in low to average-risk patients are lacking

- Comparative studies including only pure TAAA are few

Open repair of thoracoabdominal aortic aneurysms in experienced centers

Inverse association between mortality and volume of cases performed in the vascular center

9963 patients

Pooled mortality 11.2%
Pooled SCI 8.2%
Fenestrated and branched endovascular aneurysm repair outcomes for type II and III thoracoabdominal aortic aneurysms

Editor's Choice — A Study of the Cost-effectiveness of Fenestrated/branched EVAR Compared with Open Surgery for Patients with Complex Aortic Anomalies at 2 Years

Outcomes and cost of open versus endovascular repair of intact thoracoabdominal aortic aneurysm

...what about comparative studies with matched cohorts?

A propensity-matched comparison of fenestrated endovascular aneurysm repair and open surgical repair of pararenal and paravesical aneurysms

84 TAAA endo repair (Group 1)

257 TAAA open repair (Group 2)


84 TAAA endo repair (Group 1)

257 TAAA open repair (Group 2)

Group 1 (N = 65)

Proximal thoracic component: 43 (66.1%)
CSFD: 64 (98.4%)
Staged: 21 (32.3%)
Branched: 37 (56.9%)
Fenestrated: 21 (32.3%)
Mix: 7 (10.8%)

Operative technique (ER)

Group 2 (N = 65)

CSFD: 54 (83.1%)
LHBP: 56 (86.1%)
Intercostal artery reattachment: 32 (49.2%)

Operative technique (OS)

PERIOPERATIVE RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Composite endpoint</td>
<td>12 (18.5)</td>
<td>24 (36.9)</td>
<td>0.03</td>
</tr>
<tr>
<td>Death</td>
<td>5 (7.7)</td>
<td>4 (6.2)</td>
<td>1</td>
</tr>
<tr>
<td>Spinal cord ischemia</td>
<td>8 (12.3)</td>
<td>13 (20)</td>
<td>0.34</td>
</tr>
<tr>
<td>Paraplegia</td>
<td>6 (9.2)</td>
<td>7 (10.8)</td>
<td>1</td>
</tr>
<tr>
<td>Dialysis</td>
<td>6 (9.2)</td>
<td>8 (12.3)</td>
<td>0.78</td>
</tr>
<tr>
<td>Permanent</td>
<td>1 (1.5)</td>
<td>1 (1.5)</td>
<td>1</td>
</tr>
<tr>
<td>Respiratory complications</td>
<td>0 (0)</td>
<td>8 (12.3)</td>
<td>0.006</td>
</tr>
<tr>
<td>ICU days</td>
<td>1.6 (0-12)</td>
<td>2.8 (1-13)</td>
<td>0.01</td>
</tr>
<tr>
<td>In-hospital days</td>
<td>6.3 (3-23)</td>
<td>16.3 (3-30)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table I: Demographics and baseline characteristics of 114 patients undergoing endovascular repair (ER) and 237 patients undergoing open surgery (OS) for thoracoabdominal aortic aneurysms (TAAA)

Table II: Demographics and baseline characteristics after propensity score matching
Endovascular repair of TAAAs continues to evolve with improvements in device design and implantation techniques.

- Learning curve, and adjunct procedures are major factors for improving results (mortality, and SCI).
- Nowadays (mortality, major morbidity) are comparable to open surgery also in low to average-risk patients.
- The operation require centralisation as well as OS.

Well-matched but still small studies

ER and OS should not be offered at random

The choice should be individualized.