CONFORMABLE INFRARENAL ENDOGRAFT IN ABDOMINAL AORTIC ANEURYSM TREATMENT: A FEASIBLE SOLUTION IN CASE OF HOSTILE AORTIC NECK.

A SINGLE CENTER EXPERIENCE

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Disclosure

Speaker name:

......Paola Scrivere.................................................................

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
INTRODUCTION

• AAA hostile anatomy represents an unfavourable factor, determining EVAR unfeasability

• Consequently, more than 30% of EVAR procedures are performed outside the IFU

**Hostile neck anatomy (HNA):**

- neck diameter >28 mm
- neck length <15 mm
- neck angulation >60°
- neck thrombus or calcification
- Conical-reverse tapered neck
INTRODUCTION

• New generation aortic Gore Conformable Endograft could represent a valid alternative in hostile aortic neck.

• Thanks to angulation and repositionable system and optional cable car technique, angulated short and conical shaped necks could be treated with an infrarenal endograft.

This retrospective study investigates mid-term outcome of conformable aortic endograft, comparing Hostile vs non-Hostile proximal aortic neck in AAA treatment.
INTRAOPERATIVE ADJUNCTIVE MANOUVERS IN CASE OF ANGULATED NECK : CABLE-CAR TECHNIQUE

ANGULATION

REPOSITIONING

FINAL ANGIOGRAM

REPOSITIONING AND ROLE OF THE CABLEWAY WITH THE ACTIVE CONTROL SYSTEM:
This technique permits to conform the endograft to the neck shape, guaranteeing greater precision in the positioning and release phase and reducing endograft migration.
METHODS

- In our Institution, between July 2019 and July 2022, 68 consecutive patients were treated with a new generation Conformable infrarenal endograft with active control system.
- 32 patients defined with Hostile proximal neck.
- 36 patients with non-Hostile proximal neck (n-H Group).
- FU was performed with an angio-TC scan at 1,6,12,24,36 months (Mean FU: 12 months).

<table>
<thead>
<tr>
<th></th>
<th>Hostile Group Median (range: min-max)</th>
<th>n-Hostile Group Median (range: min-max)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neck Diameter at 5 mm from lowest renal artery (mm)</td>
<td>22,3 (17,5-29)</td>
<td>23 (18-28,5)</td>
</tr>
<tr>
<td>Neck Diameter at 15 mm from lowest renal artery (mm)</td>
<td>25 (20-31,5)</td>
<td>23 (18,5-29)</td>
</tr>
<tr>
<td>Neck Length (mm)</td>
<td>21 (10-40)</td>
<td>26 (20-50)</td>
</tr>
<tr>
<td>Suprarenal neck α angle (deg)</td>
<td>23,5° (10°-60°)</td>
<td>18 (0-40)</td>
</tr>
<tr>
<td>Infrarenal neck β angle (deg)</td>
<td>44,5° (10°-90°)</td>
<td>38 (0-50)</td>
</tr>
<tr>
<td>AAA diameter (mm)</td>
<td>60 (50-90)</td>
<td>56 (44-75)</td>
</tr>
</tbody>
</table>

Anatomical Characteristics in Hostile vs Favourable proximal aortic neck.
METHODS
HOSTILE NECK CHARACTERISTICS

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Nº (32 patients)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conical Shape</td>
<td>12</td>
<td>37.5%</td>
</tr>
<tr>
<td>Short Neck (length range: 15mm - 10mm)</td>
<td>6</td>
<td>18.9%</td>
</tr>
<tr>
<td>Angulated Neck (β angle ≥ 60°)</td>
<td>7</td>
<td>22%</td>
</tr>
<tr>
<td>Conical &amp; Short Neck</td>
<td>3</td>
<td>9.3%</td>
</tr>
<tr>
<td>Conical &amp; Angulated Neck</td>
<td>3</td>
<td>9.3%</td>
</tr>
<tr>
<td>Conical, Angulated &amp; Short Neck</td>
<td>1</td>
<td>3%</td>
</tr>
</tbody>
</table>
**RESULTS**

**INTRAOPERATIVE DATA**

<table>
<thead>
<tr>
<th></th>
<th>LOCAL ANESTHESIA</th>
<th>GENERAL ANESTHESIA</th>
<th>PERCUTANEOUS GROIN ACCESS</th>
<th>CABLE CAR TECHNIQUE</th>
<th>REPOSITIONING MANOUVERS ( &lt; 2)</th>
<th>REPOSITIONING MANOUVERS ( &gt;2)</th>
<th>SAC EMBOLIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H-GROUP (32 pts)</strong></td>
<td>25 (78%)</td>
<td>7 (22%)</td>
<td>30 (94%)</td>
<td>10 (31%)</td>
<td>12 (37,5%)</td>
<td>10 (31%)</td>
<td>8 (25%)</td>
</tr>
<tr>
<td><strong>nH-GROUP (36 pts)</strong></td>
<td>30 (83%)</td>
<td>6 (17%)</td>
<td>34 (94%)</td>
<td>0</td>
<td>16 (44%)</td>
<td>0</td>
<td>13 (36%)</td>
</tr>
</tbody>
</table>

Technical success was 100% both in H and n-H group, with no signs of type I / III EL.
MID-TERM FOLLOW-UP

- Mortality rate: 8%
- Overall reintervention rate: 7.3% related to lumbar arteries embolization
- Any reintervention for type IA and III or for migration
**MID-TERM FU: FREEDOM FROM ENDOLEAK**

- In H group: no type III EL or migration were observed, but one case of type IA EL was detected due to an enlargement of proximal neck diameter.

- In n-H group: No type IA /III EL and endograft migration were observed. At the mean FU the

- Type 2 EL : 8 pts (28% )in H-group and 12 pts (33%) in nH-group
MID-TERM FOLLOW-UP

- Aneurysm shrinkage was observed in 90% of H-patients and in 95% of n-H patients.
- Aneurysm stability was observed in 9% of H-patients and 3% of n-H patients.
CONCLUSIONS

• According to our preliminary data, treatment inside IFU of hostile aortic neck with conformable infrarenal device ensures a high technical success rate and excellent early and mid-term outcome.

• Primary outcome and technical success are similar in both groups.

• The high conformability and the repositioning system guarantee a precise endograft positioning and release, obtaining an adequate sealing zone.

• Long term FU is advisable.