WHAT IS ON THE HORIZON FOR IMPROVING CAS OUTCOMES: A Vascular Surgeon’s Epiphany

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DISCLOSURES
• CREST 2 executive committee
• ROADSTER 1&2 participant

CAS STROKE RISK
• The periprocedural risk of stroke/death following transfemoral CAS has been shown to be twice that of CEA in EVA3s, ICSS, and CREST.

CAS vs CEA
• The increase in events with CAS is front loaded and occurs within the first 30 days. After that, the subsequent event rates and durability parallel CEA.

EVA 3S 4 YEAR IPSILATERAL STROKE RATE

ORIGINAL ARTICLE
Long-Term Results of Stenting versus Endarterectomy for Carotid-Artery Stenosis

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POTENTIAL CAUSES FOR PERI-PROCEDURAL EVENTS IN TRANSFEMORAL CAS

• 1. Diseased aortic arch
• 2. Type 3 aortic arch
• 3. Need to traverse the lesion in order to place a distal embolic protection device
PROOF TRIAL

- 44 Patients underwent TCAR
- Deaths-0
- Strokes-0
- Silent brain infarction by MRI-16%, comparable to CEA

THE ROADSTER TRIAL

- 141 Pivotal high risk (anatomic or medical) patients in 20 U.S. Sites

ROADSTER TRIAL

- 141 patients high risk for CEA
- Technical success-100%
- Major strokes-0%
- Minor strokes-2(1.4%)
- Death-2(1.4%)
- Cranial nerve injury (CNI) temp-0.7%
- CNI permanent-0
ROADSTER 2 Outcomes by Symptom Status

Asymptomatic Patients – Per Protocol

<table>
<thead>
<tr>
<th></th>
<th>ROADSTER 1</th>
<th>ROADSTER 2</th>
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<tbody>
<tr>
<td></td>
<td>n=157</td>
<td>n=348</td>
</tr>
<tr>
<td>Stroke/Death/MI</td>
<td>4 (2.5%)</td>
<td>6 (1.7%)</td>
</tr>
<tr>
<td>Stroke</td>
<td>1 (0.6%)</td>
<td>2 (0.6%)</td>
</tr>
<tr>
<td>Death</td>
<td>1 (0.6%)</td>
<td>1 (0.3%)</td>
</tr>
<tr>
<td>MI</td>
<td>2 (1.3%)</td>
<td>3 (0.9%)</td>
</tr>
<tr>
<td>Stroke/Death</td>
<td>2 (1.3%)</td>
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Symptomatic Patients – Per Protocol

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<tbody>
<tr>
<td></td>
<td>n=46</td>
<td>n=122</td>
</tr>
<tr>
<td>Stroke/Death/MI</td>
<td>1 (2.2%)</td>
<td>1 (0.8%)</td>
</tr>
<tr>
<td>Stroke</td>
<td>0 (0.0%)</td>
<td>1 (0.8%)</td>
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<tr>
<td>Death</td>
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UCLA EXPERIENCE

• I now can offer patients their choice between CEA and CAS
• We have now done more than 30 TCAR cases without death or stroke

SUMMARY

• Direct carotid stent/angioplasty with flow reversal (TCAR) has results that are comparable to CEA
• Currently it is a hybrid procedure requiring a limited exposure of the common carotid artery, however
• There is a future possibility of a percutaneous approach

THE FUTURE OF INVASIVE INTERVENTION TO TREAT ASYMPTOMATIC CAROTID ARTERY STENOSIS WILL DEPEND UPON THE TRIAL RESULTS

POSSIBLE CREST 2 OUTCOMES

• Intensive medical mgmt may equal or be better than CEA and CAS.
• CEA and CAS may be better than intensive medical management alone.
• CEA but not CAS may be better than intensive medical management alone.
STAY TUNED