Comparison of carotid artery stenting results in primary stenosis and post-surgical restenosis

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Disclosure

Speaker name:

Andrea Spertino, MD

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
Carotid artery stenting (CAS)

ESVS guidelines

<table>
<thead>
<tr>
<th>ESVS</th>
<th>2009</th>
<th>Symptomatic</th>
<th>Asymptomatic</th>
<th>Evidence level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>&gt; 70%, Grade I</td>
<td>70%, Grade I</td>
<td>A</td>
</tr>
<tr>
<td></td>
<td></td>
<td>&gt; 50%, Grade IIa</td>
<td></td>
<td></td>
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</tbody>
</table>

Carotid endarterectomy (CEA) is the gold standard

CAS should be performed only in high-risk for CEA patients

Role of CAS in restenosis

Addressed as intervention of choice

Several studies on CAS for primary stenosis

Lack of evidence on different outcome of CAS on restenosis treatment

Post-CEA restenosis

150,000 CEA are performed every year in the USA

6% to 14% restenosis rate

15,000 restenosis in the USA every year

Experimental design

Comparison of CAS in primary stenosis and restenosis

1. Difference in patients’ characteristics
2. Intraoperative management
3. Postoperative results
Methods

480 patients submitted to CAS from 2008-2016

- 300 primary stenosis
- 180 restenosis
Methods

Preoperative data\(^6\)  
(34 items)

- Demographic
- CV risk factors
- Plaque characteristics
- Anatomy

Methods

Intraoperative data
(17 items)

• Drugs administration
• Surgical procedure
• Materials used
Methods

Postoperative data

(14 items)

• TIA
• Minor stroke
• Major stroke
• Inotropic support
• Myocardial infarction
• Death
### Statistical analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>Primary Stenosis (n = 300)</th>
<th>Restenosis (n = 180)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>73.83 ± 8.93</td>
<td>72.07 ± 7.18</td>
<td>0.026 +</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>224 (74.66%)</td>
<td>119 (66.11%)</td>
<td>0.044 §</td>
</tr>
<tr>
<td>F</td>
<td>76 (25.34%)</td>
<td>61 (33.89%)</td>
<td></td>
</tr>
<tr>
<td>Systolic Pressure (mmHg)</td>
<td>135.63 ± 19.61</td>
<td>139.67 ± 18.33</td>
<td>0.025 +</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>245 (81.66%)</td>
<td>165 (91.66%)</td>
<td>0.003 §</td>
</tr>
<tr>
<td>Cardiac Status</td>
<td>141 (47%)</td>
<td>63 (35%)</td>
<td>0.010 §</td>
</tr>
<tr>
<td>Ipsilateral stenosis SPV</td>
<td>282.44 ± 84.58</td>
<td>337.43 ± 107.54</td>
<td>&lt; 0.001 +</td>
</tr>
</tbody>
</table>

+ T Student Test. § Chi Square Test
Results

Hyperlipidaemia

Cardiac Disease

Type 3 plaque

Symptomatic

Brain CT-scan

Primary Stenosis

Restenosis

Preoperative

$p = 0.003$

$p = 0.010$

$p < 0.001$

$p < 0.001$

$p < 0.001$

$p = 0.028$
Results

Technical Success

Carotid Filter

2 Stents

Open Cells Stents

Double Layer Stents

Atropine

- Primary Carotid Stenosis
- Carotid Restenosis

p = 0.272

p = 0.035

p = 0.023

p = 0.052

p = 0.847

p < 0.001
Conclusions

CAS for carotid post-CEA restenosis

• safe and effective procedure

• lower risk of any neurological events (TIA+stroke)

• lower risk of periprocedural hemodynamic instability (inotropic support)
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