Cochrane Corner

Local Versus General Anesthetic for Carotid Endarterectomy

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Carotid endarterectomy reduces the risk of stroke in people with recently symptomatic 70% to 99% stenosis and, to a lesser extent, in people with 50% to 69% stenosis. However, benefit requires a low operative risk, which may depend on the type of anesthetic used. In our previous Cochrane review of several small, randomized control trials (RCT) of carotid endarterectomy using local anesthesia (LA) vs general anesthesia published during 1966 to 2007, there was a trend toward lower operative mortality with LA and no difference in risk of stroke, but statistical power was limited.

Objectives
We aimed to update the review of operative risks in RCT of carotid endarterectomy using LA vs general anesthesia.

Search Strategy
Using the same search strategies and inclusion criteria as previous versions of the review, 2 reviewers independently searched MEDLINE, EMBASE, and Index to Scientific and Technical Proceedings (all to November 2008). We also searched the Stroke Group Trial register (September 2008), hand-searched 6 relevant journals up to September 2008, and searched the reference list of articles identified.

Main Results
We identified 1 new, large RCT (GALA Trial) with 3526 randomized patients. Meta-analysis of the GALA trial with the 9 previous smaller RCT showed no evidence of a reduction in operative strokes or deaths (OR, 0.85; 95% CI, 0.63–1.16; Table). There was a nonsignificant trend toward fewer operative deaths with LA. As expected, LA was associated with a substantial reduction in use of arterial shunts.

Implications for Practice
Patients and surgeons can choose either anesthetic technique, depending on the clinical situation and preferences.

Table. Odds of Operative Complications During the 30 Days After Surgery in 10 RCT of Carotid Endarterectomy Performed With LA vs GA

<table>
<thead>
<tr>
<th>Outcome</th>
<th>LA Event/Cases</th>
<th>GA Event/Cases</th>
<th>OR</th>
<th>95% CI</th>
<th>I² (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stroke</td>
<td>72/211</td>
<td>77/2081</td>
<td>0.92</td>
<td>0.67–1.28</td>
<td>0</td>
</tr>
<tr>
<td>Death</td>
<td>20/2057</td>
<td>32/2026</td>
<td>0.62</td>
<td>0.36–1.07</td>
<td>0</td>
</tr>
<tr>
<td>Stroke or death</td>
<td>78/2057</td>
<td>90/2026</td>
<td>0.85</td>
<td>0.63–1.16</td>
<td>0</td>
</tr>
<tr>
<td>MI</td>
<td>14/2111</td>
<td>9/2081</td>
<td>1.53</td>
<td>0.67–3.47</td>
<td>0</td>
</tr>
<tr>
<td>Local hematoma</td>
<td>154/2002</td>
<td>160/1974</td>
<td>0.95</td>
<td>0.75–1.19</td>
<td>47</td>
</tr>
<tr>
<td>Cranial nerve injury</td>
<td>217/1946</td>
<td>186/1919</td>
<td>1.17</td>
<td>0.95–1.44</td>
<td>0</td>
</tr>
<tr>
<td>Use of arterial shunt</td>
<td>304/1959</td>
<td>798/1941</td>
<td>0.27</td>
<td>0.23–0.31</td>
<td>91</td>
</tr>
</tbody>
</table>

GA indicates general anesthesia; I², heterogeneity.
Implications for Research
Analysis of currently available RCT is underpowered to reliably determine the effect of LA vs general anesthesia on operative mortality. More RCT are needed.

Disclosures
None.

References
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