Neurocognitive Functioning After Carotid Endarterectomy and Carotid Stenting With Filter Protection or Flow Reversal

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Disclosure

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I have the following potential conflicts of interest to report:

- [ ] Consulting
- [ ] Employment in industry
- [ ] Shareholder in a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)

- [ ] I do not have any potential conflict of interest
Cognitive effects?

**Carotid stenting vs surgery**

**Carotid endarterectomy**

**Carotid artery stenting**

- **Plaque**
- **Distal embolic protection device**
- **Emboli**
- **Stent**
- **Plaque**
- **Catheter**
FAST-CAS
Flow Altered Short Transcervical CAS
With MICHI™ Neuroprotection System

Transcervical Arterial Sheath (8F)
Large Bore Arteriovenous Shunt Circuit
Flow Controller
Venous Return Sheath (8F)
Current Research

• Asymptomatic high grade carotid stenosis on BMT or symptomatic TIA
  • 26 CEA
  • 20 CAS
    • 10 Transfemoral distal protection
    • 10 Transcervical flow reversal

• 26 Matched controls, patients with PAD
  • carotid stenosis < 50%
  • matched for age, sex, SES

• Exclusion criteria
  • Age > 80
  • Ethyl
  • Symptomatic stroke
  • CEA / CAS < 2
  • CABG < 1
  • MMSE ≤ 24
Research protocol

<table>
<thead>
<tr>
<th>Neurocognitive testing</th>
<th>Pre-operative</th>
<th>1 Month</th>
<th>6 Months</th>
<th>12 Months</th>
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</thead>
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- Mini Mental State Examination
- Adult Reading Test
- Complex Figure Test
- Audio Verbal Learning Test
- Trail Making Test
- Digit span (repeat numbers)
- Spatial span (Corsi block-tapping test)
- Stroop
- Line bissection
- Symbol Substitution Coding Task
- Grooved pegboard
- D-2 concentration endurance test
- Verbal fluency
Preoperative Cognition
(compared with normative data)

- Cognitive impairment
  - 54% of carotid patients
  - 46% of vascular controls
Outcome after revascularization

• No group differences
• No interactions
• Large effects of timing for 13 out of 18 variables
Conclusions

• Similar cognitive effects for each intervention
  – Limitation: statistical power
• Large practice effects
• Control group is important