Prospective comparison of Neuropsychological Outcome after CEA and protected CAS and TCAR. Despite an increase in emboli and DWMRI lesions with CAS, no difference was noted on testing
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Disclosures

I have the following potential conflicts of interest to report:

- Receipt of grants/research support
- Receipt of honoraria and travel support
- Medtronic, Abbott Vascular, Cordis, Bard, W.L. Gore, Terumo, Boston Scientific
- Participation in a company sponsored speakers' bureau
- Employment in industry
- Shareholder in a healthcare company
- Owner of a healthcare company
- I do not have any potential conflict of interest

Renewed interest in CAS

CREST – Long term results

ACT-1 Trial

ICSS – Long term results

Peri-procedural stroke rate

Emboliisation

P=0.01

P=0.002

P=0.25

P=0.01

Carotid revascularisation and cognitive functioning

72 patients in prospective comparative study

- 46 patients treated for significant carotid stenosis
- 26 CEA, 20 CAS (10 filter, 10 TCAR)
- 26 control patients
- Vascular patients without carotid disease

Interventions under TCD monitoring

Neurocognitive testing by neuropsychologist

- 18 neuropsychological variables
- Pre-op, 1, 6 and 12 months postoperatively

Complications of embolisation

- Stroke
- Silent brain infarctions
- Neuro-
- Dementia

Is there a difference in neuro-
- Cognitive functioning after CEA vs CAS and between CAS with filter and proximal protection?
**Embolic protection**
- Filter protection
- Proximal protection: TCAR

**Neurocognitive tests**
- Cognitive problems at baseline in 54% of carotid patients and 46% of controls
- Practice effect: Increase in performance for 13/18 variables over time – no difference between groups
- Individual basis @ 6mth: Deterioration in 22% vs 4% Improvement in 9% vs 4%

**Embolisation**
- TCAR effectively prevents embolisation during CAS, bringing it to a level similar to CEA

**Influence of embolisation**
- Stroke/death: 0%
- S100 Beta (biomarker)
- Similar in all groups

**Conclusions**
- In studies on neurocognitive functioning an adequate control group is necessary
- Vascular patients often have some neurocognitive impairment
- Overall neurocognitive functioning does not improve after carotid revascularisation
- Embolisation occurs more often with filter-protected CAS than with CEA or TCAR
- There is no influence on neuro-cognitive functioning