Carotid artery revascularization using second generation stents versus surgery: A meta-analysis of clinical outcomes


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Background

Individual studies suggest that the use of second generation carotid stents (SGS) may have clinical outcomes that are similar (or superior) to carotid endarterectomy (CEA). Large-scale comparison is lacking.

Methods

PubMed was systematically searched for carotid stenting studies using First-Generation (single-layer) carotid stents and Second-Generation (mesh-covered) stents – SGS. Using the meta-analytical tool, SGS outcomes were compared to surgery in randomized trials (RCTs) involving CEA: SAPHIRE, EVA 3S, SPACE-1, SPACE-2, iCASS, CREST, ACST-1, ACT-1, and SPACE-2, and to the CEA in contemporary clinical practice – Vascular Quality Initiative (VQI) database (PRISMA methodology). SGS and CEA data meta-analysis was performed using a random effect model.

Results

Principal findings in 169,154 meta-analyzed patients

- **CGUARD MicroNET Stent and RoadSaver/Casper reduce 30-day stroke compared to RCT/VQI CEA**
- **12-mo ipsilateral Stroke is reduced with RoadSaver and CGUARD**
- **Casper/RoadSaver and Gore Stent Increase 12-mo restenosis vs. CEA, whereas restenosis is reduced with the CGUARD MicroNET stent**

Second-generation vs. First-generation stents comparisons

- **30-day Death/Stroke/MI**
- **12-month Restenosis**

Conclusions

- SGS reduce 30-day stroke rate against CEA; an effect driven by MicroNET-covered CGUARD
- **12-month adverse outcomes are reduced with CGUARD, Increased with RoadSaver/Casper, and are not significantly affected by the Gore Stent**

Findings from this meta-analysis may impact clinical decision-making in carotid revascularization.

References


"NO "class" effect of SGS!"