

## Endovascular Treatment for Carotid Atherosclerosis. Long-term Follow-up Results.

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### Introduction

The stenosis of the internal carotid artery is one of the most important causes of ischemic stroke. Now-a-days, endovascular therapy has been established as an alternative to endarterectomy in patients who would benefit from it, but in whom surgery is not deemed appropriate, due to a high surgical or anesthetic risk.

### Methods

We performed a descriptive, retrospective and blinded analysis of the clinical records of patients diagnosed with carotid disease between January 2007 and January 2013. The occurrence of stroke, acute myocardial infarction and mortality was analyzed at one month, 6 months, 12 months and 24 months after follow-up; also the degree of functional disability according to the Modified Rankin Scale.

### Learning Objectives

To share our institutions results with carotid stenting as a safe procedure with a low mortality and low morbidity incidence.

### Results

61 cases were analyzed, of which 20 patients met inclusion criteria for the study. The average age was 63.0 years (range: 41-83 years); 15 men and 5 women. 100% had a previous history ischemic cerebrovascular event prior to treatment. Two patients (10%) had an ischemic vascular event during follow-up; mortality at 2 years in the population was 5% (1 patient). 75% (15 patients) showed an improvement of 1 or more points in the Functional Modified Rankin scale.

### Conclusions

The results shown in this series are similar to those shown in international studies with a high degree of scrutiny. Endovascular procedures for treatment of carotid stenosis are safe and show good results in symptomatic patients.

### References

- Brott TG, Halperin JL, Abbara S, et al. 2011 ASA/ACCF/AHA/AANN/AANS/ACR/ASNR/CNS/SAIP/SCAI/SIR/SNIS/SVM/SVS guideline on the management of patients with extracranial carotid and vertebral artery disease. *Stroke* 2011; 42:e464.
- Inzitari D, Eliasziw M, Gates P, et al. The causes and risk of stroke in patients with asymptomatic internal-carotid-artery stenosis. *N Engl J Med* 2000;342:1693-700.
- Gurm HS, Yadav JS, Fayad P, et al. Long-term results of carotid stenting versus endarterectomy in high-risk patients. *N Engl J Med* 2008;358:1572-80.
- Cohen DJ, Stolker JM, Wang K, et al. Health-related quality of life after carotid stenting versus carotid endarterectomy: results from CREST (Carotid Revascularization Endarterectomy Versus Stenting Trial). *J Am Coll Cardiol* 2011; 58:1557.
- Mas JL, Chatellier G, Beyssen B, et al. on behalf of EVA-3S Investigators. Endarterectomy versus stenting in patients with symptomatic severe carotid stenosis. *N Engl J Med* 2006;355:1660-71.
- Qureshi AI. Carotid angioplasty and stent placement after EVA-3S trial. *Stroke* 2007; 38:1993
- SPACE Collaborative Group, Ringleb PA, Alken J, et al. 30 day results from the SPACE trial of stent-protected angioplasty versus carotid endarterectomy in symptomatic patients: a randomised non-inferiority trial. *Lancet* 2006; 368:1239
- Ederle J, Dobson J, Featherstone RL, et al. on behalf of International Carotid Stenting Study Investigators. Carotid artery stenting compared with endarterectomy in patients with symptomatic carotid stenosis (International Carotid Stenting Study): an interim analysis of a randomized controlled trial. *Lancet* 2010;375:985-97.
- Schreiber TL, Strickman N, Davis T, et al. Carotid artery stenting with emboli protection surveillance study. *J Am Coll Car* 2010;56:49-57.
- Gruberg L. SAPHIRE: Stenting and Angioplasty With Protection in Patients at High Risk for Endarterectomy. *Medscape*. Nov 25, 2002.
- Ederle J, Dobson J, Featherstone RL, et al. on behalf of International Carotid Stenting Study Investigators. Carotid artery stenting compared with endarterectomy in patients with symptomatic carotid stenosis (International Carotid Stenting Study): an interim analysis of a randomized controlled trial. *Lancet* 2010;375:985-97.
- Mantese VA, Timaran CH, et al. The Carotid Revascularization Endarterectomy versus Stenting Trial (CREST) – Stenting versus Endarterectomy in Carotid Disease. *Stroke* 2010;41(Suppl 10).