Prospective Evaluation Of Acute Cerebral Injury By DW-MRI Following Transcarotid Artery Revascularization Using A Double-Layer Micromesh Stent

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Introduction: Endarterectomy remains the gold standard in carotid artery revascularization because carotid artery stenting entails more embolization. But the Roadster trial with the Enroute device showed excellent results, similar to CEA stroke rates. Unfortunately, the device is no longer available in Europe.

The goal of this study is to report the results of a prospective study comparing patients treated with TCAR using the Enroute system or TCAR with the “homemade” system.

Methods: 40 consecutive patients with an asymptomatic carotid artery stenosis greater than 70% or with a symptomatic carotid artery stenosis greater than 50% were enrolled and assigned to Enroute or homemade. Periprocedural and demographic variables were similar in both groups). A neurological examination and an ultrasound were performed within 24 hours before and after the procedure and 30 days after the procedure. A DW-MRI was performed 24 hours before the procedure and 48-96 hours after the procedure. All patients were monitored with transcranial doppler (TCD) during the procedure.

Primary endpoint was any new ischemic lesion on DW-MRI. Secondary endpoints were any neurological event, stent thrombosis or death within 30 days.

Results: Technical success was achieved in all patients. New postprocedural MRI ischemic brain lesions were found in 2 Enroute (10,00%) and in 3 “homemade” (15%) patients, without clinical sequelae. 30 days freedom of any neurological event, stent thrombosis and death was 100% in both groups.

Conclusion: Our study suggests that transcervical approach with the “homemade” system develops a similar incidence of postprocedural new ischemic brain lesions when compared to the Enroute device. Further studies are needed.