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Emergency stenting of the internal carotid artery in combination with anterior circulation thrombectomy in acute ischemic stroke: a retrospective multicenter study

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Purpose: From 10% to 20% of acute ischemic stroke patients suffer from an occlusion or a relevant stenosis of the ipsilateral cervical artery. Promising results have been achieved when emergency stenting of the internal carotid artery (ICA) was carried out in combination with mechanical thrombectomy. Alas, symptomatic intracranial hemorrhages were reported in about 20% cases. We therefore conducted a multicenter study in order to investigate the safety and efficacy of this technique in a large cohort.

Material and Methods: The neurointerventional databases of four German stroke centers were screened for all patients who received emergency stenting of the ICA in combination with mechanical thrombectomy of the anterior circulation between 2007 and 2014. The primary outcome measure was the rate of symptomatic intracranial hemorrhage according to the ECASS III criteria; secondary outcome measures included the angiographic revascularization results and the clinical outcome.

Results: In all, 170 patients with a median age of 64 (25-88) years were treated. The patients presented after a median of 98min (52-160), with a median NIHSS score of 15 (12-19). sICH occurred in 15/170 (9%) cases. There were no statistically significant differences in age, sex, rate of rtPA, procedural timings, and the rate of successful recanalization between the groups with and without sICH. A TIC1 score $\geq 2b$ could be achieved in 77% cases, and the in-hospital mortality rate was 19%; 36% patients had a favorable outcome.

Conclusion: Emergency stenting of the ICA in combination with anterior circulation thrombectomy is not associated with a significantly higher risk of sICH compared to mechanical thrombectomy alone.