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**Publishing Title:** Intravenous Thrombolysis or Endovascular Therapy for Acute Ischemic Stroke Associated With Cervical Internal Carotid Artery Occlusion: The ICARO-3 Study

**Author Block:** Maurizio Paciaroni, Stroke Unit, Perugia, Italy; The ICARO Investigators

**Abstract Body:**

**Background and Purpose:** The benefit from intravenous (IV) thrombolysis in patients with acute ischemic stroke (AIS) attributable to the occlusion of extracranial internal carotid artery (ICA) remains unclear. The aim of the ICARO-3 study was to evaluate whether intra-arterial (IA) treatment, compared to IV thrombolysis, increases the rate of favourable functional outcome at three-months in AIS and extracranial ICA occlusion.

**Methods:** ICARO-3 was a prospective, case-control multicenter study. Patients treated with endovascular treatment within 6 hours from stroke onset (cases) were compared to matched patients treated with IV thrombolysis within 4.5 hours from symptom onset (controls). The efficacy outcome was disability at 90 days assessed by the modified Rankin Scale (mRS), dichotomized as favourable (score of 0-2) or unfavourable (score of 3-6). Safety outcomes were death and any intracranial bleeding.

**Results:** Included in the analysis were 324 cases and 324 controls: 105 cases (32.4%) had a favourable outcome as compared with 89 controls (27.4%) (adjusted odds ratio (OR), 1.25; 95% confidence interval [CI], 0.88-1.79; p=0.1). A total of 132 patients died: 57 cases (17.6%) and 75 controls (23.1%) (adjusted OR, 0.61; 95% CI, 0.40 -0.93; p=0.022). The rates of patients with severe disability or death (mRS 5-6) were similar in cases and controls (30.5% vs. 32.4%, p=0.67). An ordinal analysis showed a non-significant shift in mRS scores: common OR 1.15 (95% IC 0.86-1.54, p=0.33). There were more cases of intracranial bleeding (37.0% versus 17.3%; p=0.0001) in the IA procedure group than in the intravenous group.

**Conclusions:** Endovascular treatment of patients with acute ICA occlusion resulted in a non-significant improvement of efficacy and in a higher rate of intracranial bleeding. Overall mortality was significantly reduced in patients treated with endovascular treatment but the rates of patients with severe disability or death were similar.

**Author Disclosure Block:**

M. Paciaroni: None.