IV Thrombolysis or Endovascular Therapy for AIS Associated With Cervical Internal Carotid Artery Occlusion: The ICARO-3 Study

**History:** IV thrombolysis is recommended for acute ischemic stroke (AIS) within 4.5 hours of symptom onset. However, the benefit for patients with AIS attributable to extracranial internal carotid artery occlusion is uncertain. Endovascular treatment offers more direct treatment of the occlusion in an extended timeframe.

**Questions to answer:** Do favorable functional outcomes increase with use of endovascular treatment as compared to IV thrombolysis in AIS patients with extracranial internal carotid artery occlusion?

**Trial Design**
- Prospective, case-control multicenter efficacy and safety study
- N=648;
  - 324 cases treated with endovascular treatment within 6 hours of stroke onset
  - 324 controls treated with IV thrombolysis within 4.5 hours from symptom onset

**Primary Endpoints**
- Efficacy: disability at 90 days assessed by the modified Rankin Scale; scored 0-2 as favorable and 3-6 as unfavorable
- Safety: death, bleeding, or other adverse events

**Trial Results**
- Efficacy: 32.4% of cases had favorable outcome vs. 27.4% of controls (p=0.1)
- Safety: 17.6% of cases died vs. 23.1% of controls (p=0.022)
  - 37.0% of cases had bleeding vs. 17.3% of controls (p=0.0001)

**Take Away:** Efficacy of endovascular treatment was comparable to IV thrombolysis. Death was significantly reduced; however, bleeding was more prevalent.