5 MECHANICAL THROMBECTOMY IN ACUTE ISCHEMIC STROKE PATIENTS WITH LOW ALBERTA STROKE PROGRAM EARLY COMPUTED TOMOGRAPHY SCORES

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Background and purpose Limited data exists on the benefit of mechanical thrombectomy (MT) in acute ischemic stroke patients presenting with low ASPECTS (Alberta Stroke Program Early Computed Tomography (CT) Score). The aim of this substudy was investigate the outcome of low ASPECTS (0–5) patients undergoing mechanical thrombectomy in the Systematic Evaluation of Patients Treated With Neurothrombectomy Devices for Acute Ischemic Stroke (STRATIS) Registry.

Methods Data from the STRATIS Registry, a prospective, multicenter, non-randomized, observational study of AIS LVO patients treated with the Solitaire stent-retriever as the first choice therapy within 8 hours from symptoms onset, was used to identify patients with baseline ASPECTS 0–5. CT ASPECTS was adjudicated by a core lab blinded to clinical outcomes.

Results A total of 57/763 (7.5%) patients had a baseline ASPECTS 0–5, of which 10 were ASPECTS 0–3 and 47 ASPECTS 4–5. Mean baseline NIHSS was 19.9 ± 5.1 . The majority of patients presented with ICA (42.1%) and M1 (47.4%) occlusions. IV-rtPA was administered in 68.4%. Mean onset to arterial puncture was 276 ± 102.9 minutes and puncture to reperfusion time was 45.3 ± 25.3 minutes. The majority of patients (85.5%) achieved substantial reperfusion ($mTICI \geq 2b$). Ninety-day outcome was reported in 52/57 (91.2%). The rate of good functional outcome ($mRS \leq 2$) was 28.8% (versus 59.7% in ASPECTS 6–10 group, $p < 0.001$), which is higher than the 14.1% reported in the control arm 0–5 in the HERMES pooled analysis. Symptomatic intracranial hemorrhage and mortality rates were 7.0% and 30.8%, respectively. When further dichotomizing the group to ASPECTS 0–3 and 4–5 to determine the cut-off for MT futility, the rate of good outcome was 10% and 33.3%, respectively. In investigating the interaction between age and ASPECTS 0–5, low ASPECTS patients older than 75 had a lower rate of good clinical outcome than those 65–75 and less than 65 (0%, 18.2%, 44.8%).

Conclusion In the STRATIS Registry, low ASPECTS 0–5 is associated with lower functional outcomes in patients undergoing mechanical thrombectomy. Clinical outcome in low ASPECTS may be age dependent. Prospective studies are needed to understand the benefit of MT in this patient population.

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6 ROBOTIC-ASSISTED NEUROVASCULAR INTERVENTION

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Background Despite advances in robotic-assisted technology for cardiac and peripheral vascular interventions, a robotic-assisted platform for neurovascular intervention is not yet available.

Objective The goal of this preclinical study was to evaluate the feasibility of the CorPath® GRX robotic-assisted platform (Corindus Inc., Waltham, MA, USA) for neurovascular interventions including stroke.

Methods The robotic system was tested for its ability to accurately navigate a variety of common neurovascular devices in an *in vitro* flow model and in a live, anesthetized pig, under conditions and following procedures appropriate for clinical intervention. An access catheter was introduced manually at the equivalent of the common carotid artery in both models. Endovascular wires and catheters were navigated through the external and internal carotid artery and posterior cerebral vasculature under robotic assistance, using 0.014 in guidewires, 2.4F/1.7F microcatheters, bare-metal stents, and embolic coils.

Results All procedures in both the flow and porcine models, including navigation, wiring, and deployment of the stent, and coils, were performed successfully with no technical complications. There was no evidence of extravasation, dissection, thrombosis, or other vascular injury when angiography was compared before and after the live-animal procedure.

Conclusion This is the first study to demonstrate that use of a robotic-assisted platform is feasible for intracranial neurovascular intervention. The robotic system was successful at navigating and deploying the small-gauge devices specific to neurovascular procedures. Given the potential benefits of robotic-assisted surgery for the patient and the surgeon, further investigation is warranted for this indication.

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7 MECHANICAL THROMBECTOMY FOR ACUTE BASILAR ARTERY OCCLUSION

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Purpose The present our experience in mechanical thrombectomy for acute basilar artery occlusion.

Method and material By reviewing our databank, in the last 300 patients of acute cerebral ischemic stroke of large vessel occlusion, we found 29 patients were due to basilar artery occlusion (BAO). The inclusion criteria were; >18 years old, no evidence of hemorrhage on CT, BAO found on CTA, bridging therapy after IV-tPA in eligible patients, posterior circulation ASPECTS >6. We recorded the initial NIHSS, time from onset to needle, method of recanalization, TICI, time of