efficient and safe training to prospective neurointerventionalists.1–3

Aim To establish and assess a systematic 3-step approach including simulator training and virtual supervision by remote streaming support (RESS).

Methods The concept was evaluated by three trainees using a ten-item questionnaire for step 1 (simulator), as well as a standardized questionnaire following the initial 15 consecutive thrombectomies for each trainee and the supervisor.

Results Simulator training was rated helpful to prepare for thrombectomies (mean 4.33, median 4). Supervision by RESS resulted in a subjectively high level of safety during all steps (extracranial catheterization (4.46±0.81, 3.60±0.71, 3.33±0.94), intracranial catheterization (4.23±0.68, 3.13±0.88, 3.33±0.6), stent retriever deployment (4.67±0.59, 3.20±0.75, 3.40±0.71), and retrieval maneuver (4.40±0.71, 3.27±0.77, 3.60±0.49). During extracranial (6/45) and intracranial stenting (1/45), the subjective level of safety was high (extracranial: 3.75±0.43, 3.5±0.50, intracranial: 3.0±0.00). Trainees would have accepted active manual assistance from the supervisor in 6 situations. The supervisor reported an overall high sense of safety with the desire to intervene in 4 situations. Benefit declined over time for all trainees.

Conclusions The 3-step approach increases the level of safety, as reported by the trainees and supervisor in this study, and may enable an accelerated training of neurointerventionalists.

REFERENCES

Do you have any conflict of interest to declare?: Yes

Conflict of Interest statement FD serves as a proctor/consultant for Cerenovus, Balt, Cereus Endovascular, Stryker and Acandis

BENEFIT OF THROMBECTOMY IN PATIENTS WITH EXTENSIVE BASELINE STROKE DEPENDS ON EARLY ISCHEMIC LESION WATER UPTAKE: RESULTS FROM THE I-LAST STUDY

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Background The benefit of mechanical thrombectomy (MT) in ischemic stroke patients with ASPECTS<6 is still uncertain. ASPECTS rating is based on the presence of relative hypotension, however the degree of hypotension, which directly reflects net uptake of water, is currently not considered as imaging biomarker in stroke triage. We hypothesized that quantitative lesion water uptake in admission-CT mediates the effect of thrombectomy on functional outcome in low ASPECTS patients.

Methods For this multicenter study, anterior circulation stroke patients with ASPECTS<55 were consecutively analyzed. Net water uptake (NWU) was assessed as quantitative imaging biomarker in admission-CT. Primary endpoint was favorable functional outcome defined as mRS≤3 at day 90. The effect of recanalization on functional outcome was analyzed according to the degree of NWU within the early infarct lesion.

Results 254 patients were included, of which 148 (58%) underwent MT. The rate of favorable outcome was 27.6% in patients with low NWU (<11.4%) versus 6.3% in patients with high NWU (≥11.4%; p<0.0001). NWU was an independent predictor of outcome, while vessel recanalization (mTICI≥2b) was only associated with better outcomes if NWU was lower than 12.6%. In inverse-probability-weighting analysis, recanalization was associated with 20.7% (p=0.01) increase in favorable outcome in patients with low NWU compared to 9.1% (p=0.06) in patients with high NWU.

Discussion Early NWU was an independent predictor of clinical outcome, and might serve as an indicator of futile MT in low ASPECTS patients. NWU could be tested as tool to select low ASPECTS patients for MT.

REFERENCES

Do you have any conflict of interest to declare?: No

SECONDARY STROKE LESION GROWTH IN THE FOLLOW-UP AFTER ENDOVASCULAR THERAPY: A PROSPECTIVE LONGITUDINAL IMAGING STUDY

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Introduction Clinical outcome of endovascular treated stroke is dependent on multiple variables, resulting in a large inter-individual variability. In this context, secondary stroke injury might be of relevance but has not been systematically investigated yet.

Aim of the study was to uncover secondary phenomenon in follow-up-imaging and identify possible underlying reasons.

Methods In a prospective, longitudinal single-center study endovascular treated patients were included and followed-up after 3 to 12 months by clinical and imaging investigations. Stroke lesions were segmented, microstructural alterations were assessed by analyzing DTI-metrics and associations to clinical parameters were investigated.

Results Within the cohort (n=81), 25 patients (31%) are identified with lesion growth (LG) in the follow-up-imaging, either adjacent to primary stroke lesion or distant. DTI-metrics show a partially reversible loss of microstructural integrity.