

CANADIAN STROKE CONSORTIUM (CSC)

B.1

CT Or MRI protocol for acute stroke reperfusion with EVT (COMPARE): an international retrospective cohort study

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Background: Patients with an acute ischemic stroke (AIS) are selected to receive reperfusion therapy using either computed tomography (CT-CTA) or magnetic brain imaging (MRI). The aim of this study was to compare CT and MRI as the primary imaging modality for AIS patients undergoing EVT. Methods: Data for AIS patients between January 2018 and January 2021 were extracted from two prospective multicenter EVT cohorts: the ETIS registry in France (MRI) and the OPTIMISE registry in Canada (CT). Demographics, procedural data and outcomes were collected. We assessed the association of qualifying imaging (CT vs. MRI) with time metrics and functional outcome. Results: From January 2018 to January 2021, 4059 patients selected by MRI and 1324 patients selected by CT were included in the study. Demographics were similar between the two groups. The median imaging-to-arterial puncture time was 37 minutes longer in the MRI group. Patients selected by CT had more favorable 90-day functional outcomes (mRS 0-2) as compared to patients selected by MRI (48.5% vs 44.4%; adjusted OR (aOR), 1.54, 95%CI 1.31 to 1.80, $p < 0.001$). Conclusions: Patients with AIS undergoing EVT who were selected with MRI as opposed to CT had longer imaging-to-arterial-puncture delays and worse functional outcomes at 90 days.

B.2

Time from symptom onset and number of health care encounters prior to diagnosis of cerebral venous thrombosis

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Background: Cerebral venous thrombosis (CVT) most commonly affects younger women. Diagnosis may be delayed due to its distinct presentation and demographic profile compared to other stroke types. Methods: We examined delays to diagnosis of CVT in the SECRET randomized trial and TOP-SECRET parallel registry. Adults diagnosed with symptomatic CVT within

<14 days were included. We examined time to diagnosis and number of health care encounters prior to diagnosis and associations with demographics, clinical and radiologic features and functional and patient-reported outcomes (PROMS) at days 180&365. Results: Of 103 participants, 68.9% were female; median age was 45 (IQR 31.0-61.0). Median time from symptom onset to diagnosis was 4 (1-8) days. Diagnosis on first presentation to medical attention was made in 60.2%. The difference in time to diagnosis for single versus multiple presentations was on the order of days (3[1-7] vs. 5[2-11.75], $p=0.16$). Women were likelier to have multiple presentations (OR 2.53; 95% CI 1.00-6.39; $p=0.05$) and longer median times to diagnosis (5[2-8]days vs. 2[1-4.5] days; $p=0.005$). However, this was not associated with absolute or change in functional, or any patient reported, outcome measures (PROMs) at days 180&365. Conclusions: Diagnosis of CVT was commonly delayed; women were likelier to have multiple presentations. We found no association between delayed diagnosis and outcomes.

B.3

Neuroimaging markers of cerebrovascular disease and cognition in adults with moderate-great complexity congenital heart disease

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Background: Adults with congenital heart disease (ACHD) are at risk for stroke and dementia. We report baseline and Year 1 results from an ongoing study assessing brain health in people with moderate- and great-complexity ACHD. Methods: Participants aged ≥ 18 undergo baseline and Year-3 brain MRI/MRA and annual cognitive assessment (MoCA, NIH Toolbox-Cognitive Battery (NIH-TB)). Results: Of 93 participants to date, 79 (85%) have completed Year 1 follow-up. At baseline, the great-complexity group had lower MoCA (26.32 vs. 27.38; $p=0.04$) and NIH-TB scores (total composite 45.63 vs. 52.80; $p=0.002$) than the moderate-complexity group. Year-1 testing showed numerical improvements across cognitive batteries in both groups. More participants with great-complexity ACHD had white matter hyperintensities (WMH; 72% vs. 55%; $p=0.21$) and cerebral microbleeds (CMBs; 72% vs. 54%; $p=0.17$) on baseline neuroimaging, but differences were not significant. Conclusions: Baseline neuroimaging shows a greater-than-expected burden for age of CMB and WMH in the context of previous cardiac surgery. Baseline cognitive performance was worse with great-complexity ACHD. Improved cognitive battery performance across both subgroups at Year-1 suggests a practice effect. Repeat neuroimaging will be performed in Year-3 and cognitive performance is reassessed annually.