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Scientific Communication SC2 - IV Thrombolysis

BRIDGING THERAPY WITH TENECTEPLASE OR ALTEPLASE IN PATIENTS WITH LOW DIFFUSION-WEIGHED IMAGING ALBERTA STROKE PROGRAM EARLY COMPUTED TOMOGRAPHY SCORE

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Background and aims: Intravenous tenecteplase is an alternative to alteplase before mechanical thrombectomy (MT) in patients with large-vessel occlusion ischemic stroke (LVOS). Little data is available on its use in patients with large ischemic core. We aimed to compare the efficacy and safety of both thrombolytics in this population.

Methods: We conducted a retrospective analysis of patients with anterior circulation LVOS and diffusion-weighed imaging Alberta Stroke Program Early Computed Tomography Score (DWI-ASPECTS) $\leq$ 5 treated with tenecteplase or alteplase before MT from the TETRIS (tenecteplase) and ETIS (alteplase) French multicenter registries. Primary outcome was reduced disability at 3-month (shift analysis of the mRS). Safety outcomes were parenchymal hemorrhage (PH) and symptomatic intracranial hemorrhage (sICH). We used propensity score-weighting for all analyses.

Results: We analyzed 439 patients (tenecteplase: n=140; alteplase: n=299; inclusion period 2015-2021). Median [IQR] age was 70 years [55-81], NIHSS score 19 [16-22], DWI-ASPECTS 4 [3-5], onset-to-IVT and onset-to-puncture times 150 minutes [125-180] and 235 minutes [188-296], respectively. Successful reperfusion rate was 84.5%. Following propensity score weighting, all baseline variables were well-balanced between both treatment groups. Compared with alteplase, patients treated with tenecteplase had similar 3-month mRS (cOR for reduced disability: 1.16; 0.91-1.49; p=0.23), lower rates of PH (OR 0.61; 0.43-0.88; p=0.01) but similar rates of sICH (OR 1.11; 0.61-2.02; p=0.74).

Conclusions: Our data are reassuring regarding the safety and efficacy of tenecteplase compared to alteplase in bridging therapy for patients with LVOS and a large ischemic core in routine clinical care.

Disclosure of interest: No

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INTRA-ARTERIAL THROMBOLYSIS FAVORS DELAYED CLEARANCE OF VESSEL OCCLUSIONS FOLLOWING INCOMPLETE REPERFUSION WITH THROMBECTOMY

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Background and aims: Intra-arterial thrombolysis (IAT) may be applied to treat distal vessel occlusions which cause incomplete reperfusion following thrombectomy. Because immediate reperfusion after IAT occurs rarely, aim of this analysis was to assess the effect of IAT using 24h perfusion imaging.

Methods: All patients undergoing thrombectomy with incomplete reperfusion (Thrombolysis in Cerebral Infarction (TICI) 2a-2c score) and available 24h perfusion imaging were assessed (n=459). Perfusion imaging was rated as delayed distal vessel occlusion clearance if time-sensitive perfusion maps (Tmax/TTP) did not show wedge-shaped delays suggestive of persisting occlusions corresponding to the post-procedural angiographic deficit. Forty patients treated with intra-arterial (IA) Urokinase were compared to controls using logistic regression and inverse probability weighting adjusting for baseline differences and factors associated with delayed distal vessel occlusions clearance (e.g. collateral status, higher TICI score).

Results: Rate of distal vessel occlusion clearance was 60.5% (278/459). Patients treated with IA Urokianse were younger and had worse TICI scores. After adjustment, however, IA Urokinase was associated with higher rates of delayed distal vessel occlusion clearance (aOR 2.7, 95%CI 1.2 – 6.5) and lower rates of new infarction in the hypoperfused territory

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Background and aims: Cognitive impairment (CI) is common in patients with cerebro- and cardiovascular disease, including heart failure (HF). Characteristics of HF (e.g. ejection fraction [EF]) are known to differ between sexes. We aimed to investigate whether cognitive performance differs between women and men with HF, and secondly whether possible differences are modified by HF-characteristics or characteristics of vascular brain injury.

Methods: 162 patients (mean age 69.7±10.0, 33% women) with HF from the Heart-Brain Study underwent a neuropsychological assessment and brain-MRI. Results were standardized into z-scores (using a reference group) for memory, language, attention/speed, executive functioning and global cognition (the average across the four domains). With linear models we calculated age and education adjusted women-to-men differences (W-MΔ) in cognitive performance. Additional adjustments were made by adding separate covariates of HF- and vascular brain injury-characteristics.

Results: Women performed better on global cognition than men (W-MΔ in z-score 0.20, 95%CI 0.03-0.37), predominantly on the memory domain (0.40, 0.02-0.78)(Figure). These differences were largely attributable to an ischaemic HF-etiology, as they disappeared after adjustment for this. After adjustment for non-lacunar infarcts the difference in global cognition remained similar but the difference in memory performance disappeared. Adjustments for NYHA-class, EF, white matter hyperintensities and microbleeds did not change the results.

Conclusions: Women and men with HF differ in cognitive performance, these differences are related to an ischaemic HF-etiology and non-lacunar infarcts, but not to EF. These differences may result in under-estimation of CI in women, when only the memory domain is tested.

Adjusted women-to-men differences in z-score (95% CI)
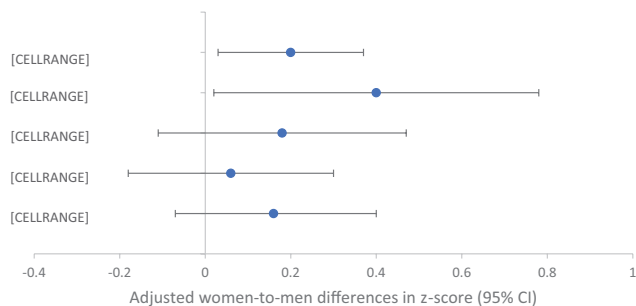
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The association between inflammatory biomarkers with dementia after acute ischemic stroke

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Background and aims: The purpose of the study is to compare levels of inflammatory biomarkers such as neutrophil-to-lymphocyte (NLR), platelet-to-lymphocyte (PLR) and derived neutrophil-to-lymphocyte ratio (dNLR) in patients with post-stroke dementia (PSD) and without it and find the relationship between these markers and PSD.

Methods: 76 patients with acute ischemic stroke (AIS) were enrolled in this study and followed up during one month. The severity of stroke was assessed by the National Institutes of Health Stroke Scale (NIHSS) within 24h of admission. Hamilton Depression Scale (HDS) was used to evaluate depressive symptoms at a month after stroke. NLR, PLR and dNLR were calculated from the blood test at admission.

Results: 26 patients were diagnosed with PSD during one month period. Patients with PSD had higher NLR (2.41 vs 2.13, p=0.010), dNLR (1.72 vs 1.54, p=0.009), PLR (126.75 vs 112.3, p=0.015) compared to patients. The score of HDS in the patients with PSD was higher than patients without it after 1 month, 9 and 3 (p= 0.001) respectively. Values of dNLR (OR=1.833, 95% CI, p <0.05), PLR (OR= 1.828, 95% CI, p =0.05) and NLR (OR =1.732, 95% CI, p =0.05) were associated with occurance of PSD. The PSD group had a more severe stroke with NIHSS 3 and 2 (p<0.001), in turn.

Conclusions: Higher levels of dNLR, NLR and PLR were associated with an elevated prevalence of PSD and can use as prognostic marker to find early occurance of PSD.

Disclosure of interest: No

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PRESENCE OF COGNITIVE IMPAIRMENT AND FATIGUE IN TIA PATIENTS AND IN PATIENTS WITH LACUNAR STROKE. A PROPOSAL OF NEUROPSYCHOLOGYCAL ASSESSMENT PROTOCOL

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Background and aims: Even though CVD is the second cause of CI (cognitive impairment), there are no standardized batteries for its systematic assessment. Our objective is to describe the obtained results of a new neuropsychological assessment protocol.

Methods: We select patients with TIA or lacunar stroke in the last year, exempt from significant disability after the stroke (mRS<3). Assessment protocol: MoCA, TMT, SDMT and FDT for cognitive functions; and D-FIS, BDI-II and WHOQOL-BREF for measuring fatigue, depressive symptomatology and quality of life.

Results: We complete the study in 39 TIA (average age: 68) and 37 lacunar stroke patients (average age: 66) out of a total of 102 patients (51 per group), illiteracy being the main reason for incomplete realization. MoCA detected CI in 59% and 57%, respectively. TIA patients with CI scored worse on short-term memory recall and phonemic fluency, and lacunar patients with CI, in short-term memory recall and task switching. A greater difficulty in task stwitching (FDT) and cognitive flexibility was found in lacunar patients in comparison to TIA, although both obtained a very low score for this domain. In the remaining, scores were below population mean for both groups. TIA patients showed higher fatigue level (p=0,0039), according to DFIS. Values for mood and quality of life were typical and without differences between groups.

Conclusions: This protocol shows more than a half of TIA and lacunar patients experience CI, being memory, task switching and cognitive flexibility the most affected domains. TIA patients exhibit a greater level of fatigue.

Disclosure of interest: No