Abstract: P2549

The cardiovascular predictors of clinical outcomes in patients after ischemic stroke of undetermined etiology

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Purpose: The study aimed to identify echocardiographic, hemodynamic and biochemical predictors of unfavourable prognosis after ischemic strokes of undetermined etiology (ESUS) in patients (pts) at age <65.

Methods: Out of 520 ischemic stroke pts we selected 64 pts diagnosed with ESUS [mean age 54 (SD: 47-58) years, 42% males] and additional 36 without stroke but with similar risk profile, which were treated as a reference group [age 53 (SD:47-58) years, 61% males]. All pts underwent echocardiography, non-invasive assessment of hemodynamic parameters using SphygmoCor tonometer (Atcor Med., Australia), HDL subfraction distribution using Lipoprint (Quantimetrix) as well as measurements of selected biomarkers. Follow-up was 12 months.

Results: At 12-month follow-up 9% of patients had died, and recurrent ischemic stroke also occurred in 9% of patients - only in the ESUS group (Figure). Patients who died had significantly lower levels of LDL and HDL cholesterol (included HDL-8 and -9 subfractions) and higher level of triglicerides (p=0.01, p=0.01, and p=0.02; respectively), lower level of adiponectin (p=0.01), lower value of mean early diastolic (E') mitral annular velocity (p=0.04) and lower diastolic blood pressure (p=0.04). The atrial fibrillation (AF) occurred in 10% of pts during the 12 months (log-rang, p=0.254) (Figure). The log-rank test showed that ESUS group had a significantly poorer outcome of AF in the first 2 months after hospitalization compared to reference group (11% vs 5%, p=0.041). Based on a Kaplan-Meier analysis, the outcome of re-hospitalization the 1st year was 28% (18/64) in the ESUS group and 17% (6/36); log-rank, p=0.058. In the multivariate analysis mean early diastolic (E') mitral annular velocity (odds ratio [OR] 0.75, 95% confidence interval [CI]: 0.6-0.94; p=0.01) was significantly associated with AF occurrence in the 12-month follow-up was lower value of Tissue Doppler-derived right ventricular systolic excursion velocity S’ (OR 0.65, 95% CI 0.45-0.93; p=0.01). The only independent predictor of recurrent stroke was the ratio of peak velocity of early diastolic transmitral flow to peak velocity of early diastolic mitral annular motion as determined by pulsed wave Doppler (E/E’) (OR 0.75, 95%CI: 0.6-0.94; p=0.01). E/E’ ratio was also independently associated with composite endpoint consisting of death, hospitalization and recurrent stroke (OR 1.90, 95%CI 1.1-3.2, p=0.01).

Conclusions: The indices of diastolic dysfunction are significantly associated with unfavourable prognosis after ESUS. There is a robust role for outpatient cardiac monitoring especially during first 2 months after ESUS to detect potential AF.
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