Recurrent vascular events after ESUS (embolic stroke of undetermined source) in young adults

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Background

The existing knowledge about baseline characteristics and recurrent vascular events in young patients with embolic stroke of undetermined source (ESUS) is scarce (1,2). We compared baseline characteristics and risk of recurrent vascular events and vascular death between ESUS and non-ESUS young patients.

Methods

Retrospective analysis of consecutive patients aged 18 to 55 years with first-ever ischemic stroke from January 1st 2009 to November 30th 2017. Patients with less than 1 month of follow-up and of undetermined cause due to incomplete study were excluded. ESUS patients were identified and recurrent cerebrovascular events (stroke and TIA), composite vascular events (stroke, TIA, myocardial infarction, any venous or arterial thrombosis, and any revascularization procedure) and vascular death were compared between ESUS and non-ESUS patients. Survival analysis using incidence-rate (IR) ratios was performed. Adjusted risks were calculated using Cox proportional hazard analyses.

Results

Composite vascular events Cox regression

	HR	Std. Err.	z	p-value	95% CI
ESUS	0.58	0.20	-1.57	0.117	0.02-1.15
Male sex	0.98	0.28	-0.08	0.933	0.56-1.71
Age	1.02	0.02	0.02	0.412	0.98-1.06
Hypertension	1.57	0.47	1.49	0.136	0.87-2.83
Diabetes	1.96	0.57	2.31	0.021	1.11-3.47
Migraine	0.17	0.17	-1.73	0.083	0.02-1.26

Discussion

As in the previous study (1), ESUS patients are younger, have a lower prevalence of diabetes and a higher prevalence of migraine.

While in all age groups, ESUS patients have a higher incidence of recurrent events (2), in the young adults subgroup the rate of events is at least non-superior (1). Different etiologies of ESUS according to age groups (ex.: paroxysmal AF in the older versus low risk embolic source in the younger) could explain these differences.

Conclusions

In our cohort, ESUS patients were younger, less often diabetic and had more frequently migraine. There were no differences in recurrent vascular events and vascular death between ESUS and non-ESUS young patients.

1 – Martinez-Majander N, et al. - Embolic strokes of undetermined source in young adults: baseline characteristics and long-term outcome. Eur J Neurol. 2018 Mar;25(3):535-541. 2 – Hart RG, et al. Embolic Stroke of Undetermined Source - A Systematic Review and Clinical Update. Stroke 2017 Apr;48(4):867-872.