

AN IMPORTANT PREDICTOR OF ATRIAL FIBRILLATION IN EMBOLIC STROKE OF UNDETERMINED SOURCE

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BACKGROUND: Atrial cardiopathy (AC) is more frequent in patients with embolic stroke of undetermined source (ESUS) than in patients with non-cardioembolic strokes and it has been suggested as potential risk factor for cardiac embolism. **The aim of this study is to evaluate the impact of AC on detection of atrial fibrillation (AF) during follow-up.**

METHODS AND RESULTS:

Retrospective observational cohort study

3147 patients with acute ischemic stroke
1/2014-6/2019
34-months follow-up



178 ESUS

76 (43%) with AC

At least one

Severe left atrial fibrillation ≥ 47 mm (♀) | ≥ 52 mm (♂)
P-wave terminal force in lead V1 > 5000 $\mu\text{V} \times \text{ms}$
Excessive premature atrial complexes ($> 30/\text{hour}$)

102 (57%) without AC

Older
More frequently had arterial hypertension

Lower total cholesterol

Table 1. Baseline characteristics of the study population according to the presence of AC.

	No AC (n=102)	AC (n=76)	P-value
Age (years)	53 (43-64)	64 (55-73)	<0.001
Male sex	50 (49.0)	46 (60.5)	0.128
Arterial hypertension	37 (36.3)	46 (60.5)	0.001
Diabetes	17 (16.7)	15 (19.7)	0.598
Dyslipidemia	53 (52.0)	46 (60.5)	0.255
Current smoking	27 (26.5)	18 (23.7)	0.672
Coronary heart disease	1 (1.0)	2 (2.6)	0.576
Peripheral artery disease	1 (1.0)	1 (1.3)	1.000
Previous ischemic stroke or transient ischemic attack	9 (8.8)	11 (14.5)	0.238
Previous hemorrhagic stroke	0	1 (1.3)	0.429
OCSF classification of index stroke			0.951
Total anterior circulation infarct	22 (21.6)	17 (22.4)	
Partial anterior circulation infarct	35 (34.3)	28 (36.8)	
Posterior circulation infarct	31 (30.4)	22 (28.9)	
Lacunar infarct	9 (8.8)	7 (9.2)	
Systolic blood pressure (mmHg)	137 (122-152)	145 (131-159)	0.069
Diastolic blood pressure (mmHg)	78 (70-84)	78 (70-88)	0.845
Serum glucose (mmol/L)	6.6 (5.8-7.1)	6.8 (5.7-8.3)	0.585
Total cholesterol (mmol/L)	5.0 (± 1.0)	4.4 (± 1.0)	<0.001
Low density lipoprotein cholesterol (mmol/L)	3.1 (± 0.9)	2.7 (± 0.8)	0.012
High density lipoprotein cholesterol (mmol/L)	1.29 (± 0.4)	1.2 (± 0.3)	0.241
Tryglicerides (mg/dl)	1.45 (1.1-1.8)	1.1 (0.9-1.5)	0.010
HbA1c (%)	5.4 (4.6-5.8)	5.4 (4.6-5.8)	0.874
Anticoagulation after index event	25 (24.5)	26 (34.2)	0.157
Total follow-up (months)	35 (12-67)	32 (13-52)	0.362
Death during follow-up	2 (2.0)	4 (5.3)	0.404

Table 2. Cox regression analyses for prediction of AF during follow-up in patients ESUS.

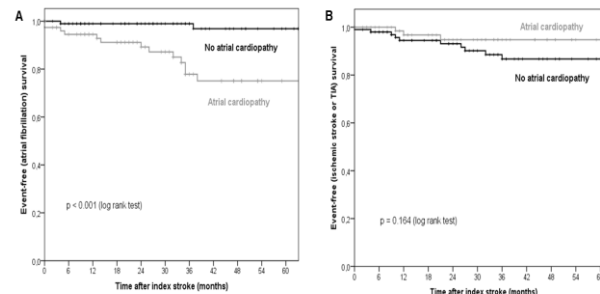
AC	Hazards ratio	p
Unadjusted	7.00	0.002
Model 1*	4.71	0.023
Model 2†	4.88	0.022
Model 3‡	5.85	0.016

* Adjusted for age

† Adjusted for age and arterial hypertension

‡ Adjusted for age, arterial hypertension, diabetes mellitus, LDL-cholesterol and previous ischemic stroke or transient ischemic attack

Figure 1. Kaplan-Meier survival curves for AF detection (A) and stroke or transient ischemic attack (B) stratified according to the presence of AC.



There were no differences in stroke or TIA recurrence between groups with and without AC.

AC predicted AF \rightarrow 86.7% sensitivity; 61.3% specificity; 97.1% NPV; 18.4% PPV.

CONCLUSION:

ESUS patients with AC have different baseline clinical characteristics than patients without AC and have a higher detection of AF during follow-up.