

Supplemental table 1. Clinical characteristics of the patients enrolled in the

	Non-AF (n=10)	Persistent AF (n=10)	p-value	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47	VATS PVI,
Surgery type					
VATS PVI	-	10 (100)	NA		
CABG	10 (100)	-	NA		
Aortic valve	1 (10)	-	NA		
CABG+valve	1 (10)	-	NA		
Baseline					
Sex, male, n(%)	10 (100)	10 (100)	NA		
Age, years (±SD)	72.5±6.4	69.2±6.6	0.269		
AF duration, years [IQ]	-	5 [1.5-9]	NA		
Previous catheter PVI, n(%)	-	1 (10)	NA		
BMI, kg/m ² (±SD)	27.2±1.5	26.4±4.1	0.85		
Creatinine, ml/l (±SD)	86.6±11.0	94±10.4	0.139		
CHA2DS2-VASc [IQ]	2.5 [2-3.8]	2 [2-2]	0.056		
Vascular disease, n(%)	10 (100)	1 (10)**	<0.001		
Previous PCI, n(%)	2 (20)	0 (0)	0.456		
Myocardial infarction, n(%)	4 (40)	1 (10)	0.302		
Hypertension, n(%)	5 (50)	6 (60)	1		
Diabetes Mellitus, n(%)	3 (30)	1 (10)	0.576		
Stroke/TIA/embolus, n(%)	1 (10)	2 (20)	1		
Medication					
NOAC/vitK antagonist, n(%)	0 (0)	10 (100)	<0.001		
Antiplatelet, n(%)	9 (90)	0 (0)	<0.001		
Class IA AAD, n(%)	0 (0)	0 (0)	NA		
Class IC AAD, n(%)	0 (0)	2 (20)	0.456		
Class II AAD, n(%)	9 (90)	5 (50)	0.143		
Class III AAD, n(%)	0 (0)	2 (20)	0.456		
Class IV AAD, n(%)	0 (0)	2 (20)	0.456		
Digoxin, n(%)	0 (0)	1 (11)	0.957		
ACE inhibitor, n(%)	2 (20)	3 (30)	1		
Angiotensin II blocker, n(%)	2 (20)	2 (20)	1		

video assisted thoracoscopic pulmonary vein isolation. CABG, coronary artery bypass grafting. BMI, body mass index. PCI, percutaneous coronary intervention. TIA, transient ischemic attack. NOAC, non-vitamin K antagonist oral anticoagulants. AAD, anti-arrhythmic drugs. The categorical variables (eg. sex, CHA2DS2-VASc, the presence of comorbidities and medication) were compared by Chi-squared test. The continuous variables (eg. age, BMI and creatinine) were compared by Mann-Whitney U test.

Supplemental table 2. Clinical parameters of the patients whose atrial fibroblasts were used in this study

	AF patients (n=10)
AF type	
Paroxysmal AF	1 (10)
Persistent AF	7 (70)
Long-standing persistent AF	2 (20)
Baseline	
Sex, male, n(%)	8 (80)
Age, years (±SD)	64.5±7.1
AF duration, years [IQ]	2 [1.8-3.5]
Previous catheter PVI, n(%)	0 (0)
BMI, kg/m ² (±SD)	29.5±3.1
CHA2DS2-VASc [IQ]	1.5 [0-2.3]
Vascular disease, n(%)	1 (10)
Myocardial infarction, n(%)	1 (10)
Hypertension, n(%)	3 (30)
Diabetes Mellitus, n(%)	1 (10)
Stroke/TIA/embolus, n(%)	1 (10)
Medication	
NOAC/vitK antagonist, n(%)	8 (80)
Class IA AAD, n(%)	0 (0)
Class IC AAD, n(%)	2 (20)
Class II AAD, n(%)	6 (60)
Class III AAD, n(%)	7 (70)
Class IV AAD, n(%)	1 (10)

PVI, pulmonary vein isolation. BMI, body mass index. TIA, transient ischemic attack. NOAC, non-vitamin K antagonist oral anticoagulants. AAD, anti-arrhythmic drugs.