

Maintaining sinus rhythm after electrical cardioversion

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INTRODUCTION AND PURPOSE

Atrial fibrillation (AF) and atrial flutter (AFL) are commonly terminated by **electrical cardioversion** (EC) when a rhythm control strategy is adopted. The **long-term success** following EC is variable and can be increased by the use of **antiarrhythmic drugs** (AAD)^{1,2}. However, preservation of sinus rhythm (SR) remains a challenge and some factors have been suggested to predict SR maintenance^{2,3}. Our study aims to determine the clinical characteristics and independent predictors of SR maintenance after EC due to AF/AFL.

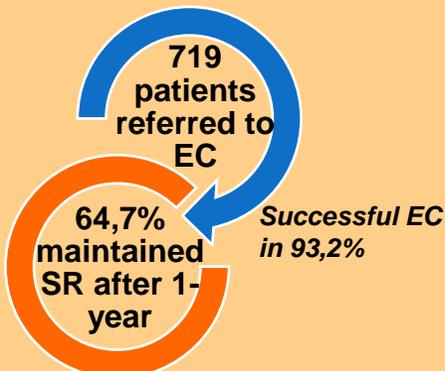
METHODS

- Retrospective study;
- **Population:** patients with AF/AFL referred to EC in our Cardiology Department, from September 2011 to September 2020;
- We analysed clinical characteristics, echocardiographic studies and follow-up data;
- **Primary endpoints** were the incidence of ischemic stroke, all-cause and cardiovascular (CV) mortality;
- Independent predictors of SR maintenance were identified through a binary logistic regression analysis, considering $p=0,05$.

RESULTS

Basal characteristics:

- ✓ Median age: 67 years-old
- ✓ Male gender: 506 (70,4%)
- ✓ Outpatient setting - 60,6%
- ✓ AFL - 21%
- ✓ Arterial hypertension – 57,3%
- ✓ Obesity – 34,6%
- ✓ Preserved LVEF – 66,7%



- 62,1% - persistent AF/AFL
- 19,6% - first diagnosed AF/AFL
- 17,2% - paroxysmal AF/AFL

Clinical characteristics	SR after 1-year	Non-SR after 1-year	p-value
Chronic kidney disease (%)	2,6	10,7	<0,001
Electric shocks during EC (mean)	1,2	1,39	0,005
Antiarrhythmic therapy (%)	88,1	88,3	0,968
LVEF recovery after EC (%)	58,8	31,9	0,008
Preserved LVEF after EC (%)	88,8	73,6	<0,001
Additional EC (mean)	0,26	0,65	<0,001
Ablation procedures(%)	7,1	15,1	0,011
Stroke rate (%)	4,1	4,1	0,969
All-cause mortality (%)	12,8	25	0,002
Cardiovascular death (%)	3,8	10,9	0,005

Median follow-up of 1368 days

EC = Electrical cardioversion; LVEF = Left ventricular ejection fraction; SR = Sinus rhythm

INDEPENDENT PREDICTORS OF SR MAINTENANCE:

- ✓ Absence of chronic kidney disease ($p=0,013$);
- ✓ Applying fewer electric shocks during EC ($p=0,013$);
- ✓ Preserved LVEF after EC ($p=0,004$)

CONCLUSIONS

In our study, most patients maintained SR 1-year after successful EC, reflecting a higher percentage than previous reports³. SR maintenance was associated with **lower all-cause and CV mortality**, but similar stroke rate. A sub-study of the AFFIRM trial showed SR maintenance 1-year after cardioversion in 80% of patients treated with AAD¹. However, we did not report significant differences regarding AAD use between both groups. **Absence of CKD**, applying **fewer electric shocks** during EC and **preserved LVEF after EC** were independent predictors of SR maintenance.