

## Radiofrequency catheter ablation of focal atrial tachycardia: characteristics and results of a series in a tertiary hospital

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**Background:** Focal atrial tachycardia (AT) is a relatively uncommon arrhythmia with poor response to medical treatment. Radiofrequency (RF) ablation appears to be a good option for treatment of symptomatic patients (P).

**Purpose:** To describe the clinical characteristics, electrophysiological (EP) findings, safety and short-term efficacy of catheter ablation in P with AT.

**Methods:** Retrospective analysis of consecutive P submitted to AT ablation using electroanatomical mapping between 2015 and 2020. If the AT was not present spontaneously, pacing maneuvers (atrial drive or burst pacing with up to 3 extra-stimuli) and isoprenaline was employed until reproducible induction of an ectopic atrial rhythm. Radiofrequency (RF) ablation was delivered at the site of earliest activation after validation of local electrograms until non-inducibility.

**Results:** A total of 46P (61% female) were included, with a mean age of  $48 \pm 23$  years (minimum 8 months, maximum 86 years). Idiopathic AT was observed in 47.8%, while 52.2% had other relevant comorbidities (chronic pulmonary disease 17.4%; previous cardiac surgery 8.7%; congenital heart disease 10.9%; coronary artery disease 6.5%). Despite anti-arrhythmic therapy, daily palpitations were present in 87% of the cases and dizziness or syncope occurred in 22%. Nearly half (47.8%) had previously sought urgent medical care and 30.4% had a hospital admission due to arrhythmia. The clinical arrhythmia was documented in 34P (47.8% by 12-lead electrocardiography and 26.1% in 24h Holter monitoring). During the EP study a focal AT was documented in all P (spontaneously in 54.3% and induced with pacing maneuvers in 45.7%). AT origin after electroanatomical activation mapping is depicted in figure 1. After focal RF ablation, a second AT was induced in 16P (34.8%) and a new ablation was performed in 15 cases (93.8%). Total RF time was  $508 \pm 386$  sec. One P developed right phrenic nerve palsy after ablation on the lateral wall of the right atrium. No other complications were noted. On follow-up (mean  $320 \pm 92$  days), symptoms improved in 88.1% of the P, with a 3-fold decrease in urgent medical care visits and hospital admission for arrhythmia. Three P (8.7%) were submitted to a new EP study, in which an AT was documented and ablated in 2P.

**Conclusion:** AT is a very symptomatic arrhythmia, associated with increased usage of hospital resources and poor response to antiarrhythmic therapy. Ablation is an efficient treatment option, with a high success rate, low rate of complications and short-term clinical benefits.

Abstract Figure. Distribution of focal atrial tachycardia

