

## First-in-world assessment of outcomes of catheter ablation for atrial arrhythmias in arrhythmogenic right ventricular cardiomyopathy

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**Introduction:** Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a genetically inherited disease characterized by fibro-fatty infiltrations (FFI). FFI in ARVC patients usually originates in the ventricles, but recent imaging studies showed FFI at the atrial level as well. Effectiveness of catheter ablation (CA) for atrial arrhythmias (AA) in this subset of patients is currently unknown.

**Purpose:** Aim of our study is to describe acute and long-term effectiveness of CA for AA in ARVC patients.

**Methods:** Nine ARVC registries from Europe, US, and China were retrospectively searched for ARVC patients undergoing CA for AA (namely: atrial fibrillation (AF), atrial tachycardia (AT), and cavo-tricuspid dependent atrial flutter (CTI-FL)). Baseline, procedural, and long-term outcome data were collected.

**Results:** Thirty-five pts (86% male, median CHA<sub>2</sub>DS<sub>2</sub>-VASC 1 [1–2], HAS-BLED 1 [0–2], and EHRA scores 2 [2–3]) were enrolled, in which a total of 45 CA procedures for AA were performed (left atrial CA: n=19 AF, n=10

AT; right atrial CA: n=16 CTI). Mean age at AA CA was 48.2±14.8 y.o. At baseline, 63% of pts were on oral anticoagulants (OAC) (n=9 warfarin; n=13 NOAC). Catheter ablation was successful and sinus rhythm obtained at the end of the procedure in all patients, with 2 (6%) AF patients requiring electrical cardioversion. Over a median follow-up of 36 [14–74] months, 12 (27%) pts experienced arrhythmia recurrence (left atrial group: n=6 AF recurrences, n=3 AT recurrences; CTI-FL group: n=1 CTI-FL recurrence; n=1 new AF with previous CTI-dependent flutter ablation), with a 1-year follow-up resulting comparable to what has been reported in the literature for the general population. [Figure 1 and 2]. 61% pts were on OAC at last follow-up.

**Conclusion:** Age at the time of CA for AA is about 10 years younger in patients with ARVC as compared to the general population. CA for AA in ARVC pts is safe and effective; surprisingly, long-term CA outcomes for AF and left AT result comparable to those reported in the general population, whereas recurrence rates of CTI-dependent flutter seem to be higher.

Overall Cohort (n=35)	
Age at diagnosis, years (mean ± s.d.)	40.6±13.7
Male, n (%)	30 (86)
CHA <sub>2</sub> DS <sub>2</sub> -VASC, median [IQR]	1 [1–2]
HAS-BLED, median [IQR]	1 [0–2]
EHRA score pre-procedure, median [IQR]	2 [2–3]
Arrhythmias ablated at first procedure	
Left sided only ablation, n (%)	19 (54)
CTI only ablation, n (%)	6 (17)
Left sided and additional CTI ablation, n (%)	10 (29)

