

CRYOBALLOON VS. RADIOFREQUENCY ABLATION OF PAROXYSMAL ATRIAL FIBRILLATION: NO IMPACT OF PULMONARY VEIN ANATOMY IN MIDTERM PROCEDURAL SUCCESS.

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Background: Pulmonary vein (PV) electrical disconnection is the mainstay of treatment in catheter ablation of paroxysmal atrial fibrillation (PAF). Cryoballoon (CRYO) ablation has been introduced in more recently than radiofrequency (RF) ablation, the standard technique in most centers, and head-to-head studies assessing sinus rhythm maintenance beyond 12 months are currently very scarce. PV frequently display anatomic variants (left common trunk at and right supernumerary veins), which are thought, according to some authors, to compromise the results of CRYO.

Methods: Single-centre study, comprising 614 consecutive pts undergoing a first procedure of PAF ablation (CRYO = 287 and RF = 327 pts). Comparisons between CRYO and RF ablation were performed concerning safety and efficacy endpoints during a 12 median follow-up (IQR = 7-19).

Results: Baseline characteristics (age, gender prevalence, body mass index, AF duration, left atrial volume, left ventricle ejection fraction, CHADS₂ and HAS-BLED) did not differ between groups. No differences were found regarding the number of PV at left (1.8 ± 0.4 RF vs 1.8 ± 0.4 CRYO; $p=0.17$) and right (2.2 ± 0.5 RF vs 2.2 ± 0.4 CRYO; $p=0.10$). CRYO pts presented more relapses during hospitalization (4.9% vs 9.1%; $P=0.04$), but use of class I or III anti-arrhythmic agents was similar (15.0% vs 16.4%; $p=0.37$). However, no differences were found during the 3 months blanking period (14.4% RF vs 16.7%; $p=0.10$) and at mid-term (18.3% RF vs 17.8% CRYO; log rank $p=0.25$). Complication rate was similar, except for phrenic palsy that was more frequent in CRYO (2.4% vs 0.3%; $p=0.02$). We observed no interaction of PV anatomy on mid-term procedural success: presence of a left common pulmonary trunk (log rank $p=0.30$); presence of right supernumerary veins (log rank $p=0.33$).

Conclusions: The cryoballoon performed similarly, at mid-term, to radiofrequency ablation of PAF in all different PV anatomic subsets. The presence of PV anatomic variants should not discourage the referral of patients for cryoablation of PAF.