

## **PO02-37 - Efficacy of a Tailored Single Balloon Approach for Pulmonary Vein Isolation with the Cryoballoon Technique**

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**Introduction:** Cryoballoon ablation using the Arctic Front-catheter (CryoCath™) represents a novel technology for circumferential pulmonary vein isolation (PVI) in patients with atrial fibrillation (AF). Circumferential contact of the cryoballoon with the antrum of the pulmonary vein (PV) is required for adequate tissue freezing. Therefore, varying anatomy of the PVs is a challenging problem.

**Methods:** We consecutively included 273 patients (mean age  $59,6 \pm 10,2$  years) with symptomatic, drug refractory paroxysmal AF (mean duration of AF  $5,2 \pm 5,0$  years). All patients obtained a CT or MRI-scan prior to procedure to assess the diameter of the pulmonary veins and to detect anatomical variabilities. According to the individual PV anatomy, either a 23 mm or a 28 mm balloon was chosen for the ablation procedure. Cryoballoon ablation was limited to 4 freezes/PV. Primary endpoint of the study was the rate of isolated pulmonary veins, documented by Lasso-catheter recordings. Secondary endpoint was the freedom of symptomatic and asymptomatic episodes of AF after a single cryoballoon ablation.

**Results:** According to the PV anatomy, in 186 patients (68%) a 28 mm balloon and in 87 patients (32%) a 23 mm balloon was used. Mean procedure, cryoablation, and fluoroscopy times were  $139 \pm 38$  min,  $50 \pm 15$  min and  $34 \pm 14$  min, respectively. A total of 1031 of the targeted 1089 PVs (95%) could be isolated with a limited ( $\leq 4$  freezes/PV) cryoballoon approach. 74% of the patients remained in stable sinus rhythm (SR) during a mean follow up time of 12 months.

**Conclusions:** Knowledge of the individual PV anatomy provided by CT or MRI-scan allows the selection of the best suitable balloon-device in cryothermal ablation for patients with paroxysmal AF. As a consequence, a high rate of successful PVI can be achieved with a limited single balloon approach. SR can be maintained in the majority of these patients.

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