

## **PO04-27 - Pulmonary Venous Isolation by Antral Ablation with a Large Cryo-balloon for Paroxysmal and Persistent Atrial Fibrillation**

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**Introduction:** Cryoablation (CA) of the pulmonary venous (PV) ostia is safe with no PV stenosis nor ablation induced perforation but point by point CA of PVs is time-consuming with a higher recurrence rate than other energies. PV isolation by antral ablation may be more effective than segmental ostial ablation. We report the use of a large CA balloon to perform antral CA with "touch-up" ostial CA to isolate PVs in patients with paroxysmal (PAF) and persistent (PerAF) AF.

**Methods:** All patients (pts) had medically refractory AF. After 2 transeptal punctures, a 28mm cryoballoon (Arctic Front, CryoCath) was introduced via a 12 Fr FlexCath (CryoCath) and a 20-pole PV curvilinear mapping catheter via an 8Fr sheath. All PVs were mapped after angiography and the same cryoballoon introduced over a guidewire into each PV regardless of PV size. Luminal contrast injection into the PV showed a good seal between the balloon and PV ostia. Two 5-minute balloon freezes were applied to each PV. The right phrenic nerve was captured by SVC pacing during CA of both right PVs. After all PV antra had been treated with the cryoballoon, each was remapped and treated with focal ostial CA if necessary (Freezor Max, Cryocath) to complete PV isolation. Pts were followed for > 6 months with Holters.

**Results:** 82 pts (mean age  $59 \pm 10$  years, 66 male, 55 PAF, 27 PerAF) undergoing their first procedure were recruited. 60% of pts required PV ostial touch-up for a mean of 1.5 PVs per pt. Mean trough temperature achieved during balloon CA was  $-46.6 \pm 8.1^\circ\text{C}$ . Balloon CA that isolated PV reached a lower minimum temperature of  $-47.4 \pm 7.4^\circ\text{C}$  versus  $-43.7 \pm 9.4^\circ\text{C}$  for non-isolated PVs ( $p = 0.001$ ). Procedural time was  $103 \pm 27$  minutes with  $29 \pm 9$  minutes of fluoroscopy. 82% of PAF and 64% of PerAF pts were free from AF at 6 months after a single procedure. 3 complications occurred: 2 cases of transient right nerve palsy which recovered completely and a pericardial effusion from guidewire LUPV perforation.

**Conclusions:** PV isolation can be achieved in under 2 hours by a simple cryoablation protocol with excellent results after a single intervention, particularly for PAF.

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