

## **PO03-44 - Side Effects and Success of Antral Isolation of Pulmonary Veins with Cryoballoon Technique in a Large Patient Cohort**

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**Introduction:** In treatment of paroxysmal atrial fibrillation (af) circumferential substrate modification of the antrum of pulmonary veins (pv) with RF energy includes risks of pv stenoses and esophago - left atrial fistula. This study reports on antral isolation of pv with cryoballoon technique.

**Methods:** Pv isolation was performed with best fitting 28/23mm balloon (Arctic Front, Cryocath, Canada) freezing down to minus 35 - 75 ° C 6 minutes two times per vein with nitrous oxide. Lasso mapped rest potentials were eliminated with balloon freezes or touch up with a 9 french Freezor Max catheter. To avoid phrenic nerve palsy movement of right diaphragm or pacing of phrenic nerve were monitored. Patients (p) were followed three monthly with 7 day holter and symptoms.

**Results:** We treated 293 p (92 women, mean age 59±10 years, 273 with paroxysmal, 20 persistent af, left atrium 43±5 mm, 151 p with lone af, 102 hypertension, 40 mild structural heart disease). With 2.4±1.1 impulses we isolated in 83% all pv with balloon only, in 17 % with additional touchup. In the last 181 p all pv could be isolated with balloon only, in 44 % combining two balloon sizes. Procedure time decreased to 169±38 min and x ray burden to 26±8 min. Phrenic nerve palsy in 8 p (3%, 7 with 23 mm balloon) recovered within 3 to 9 months. With pacing technique damage of phrenic nerve could be significantly reduced. In 5 p we observed cough, reversible hemoptysis over 3 days and hematomas/edema around single pv's in ct scans due to freezing lung tissue. During a mean follow up of 8.5±6 months and 1.1 procedures per p (23 redos) of 168 p analyzed after blanking time of 3 months 81 % (136 p) were free of af with one procedure 72%, with left common ostia (11 of 13) 85%. No pv stenoses, no fistulas were observed. Other side effects were 1 stroke, 1 pericardial effusion, 4 groin hematomas.

**Conclusions:** Antral cryoisolation of the pv with balloon technique is highly efficient. With pacing technique persistent phrenic nerve palsy can be minimized. Due to freezing to far inside of pv cough, hemoptysis and peri pv hematoma may occur. Balloon position inside of pv should be avoided. Cryoballoon therapy may be used as first line therapy.

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