

## **LONG TERM FOLLOW-UP AFTER CRYOBALLOON ISOLATION OF THE PULMONARY VEINS IN PATIENTS WITH PAROXYSMAL ATRIAL FIBRILLATION**

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**Introduction:** Isolation of the pulmonary veins (PVI) with cryoenergy through balloon delivery is a new approach in the treatment of patients with paroxysmal and persistent atrial fibrillation (AF). Long term follow-up data are lacking.

**Purpose:** To provide better insight into the success rate and the incidence of recurrences using a wide array of follow-up modalities.

**Methods:** Patients with symptomatic AF despite anti-arrhythmic drugs (AAD) were treated with cryoballoon PVI. Daily transtelephonic ECG monitoring was started one month before ablation to define AF burden and continued for three months afterwards. Patient also transmitted an ECG in case of symptoms. Before and 3 months after ablation a 24 hours Holter-ECG was made, along with a focused questionnaire on arrhythmia symptoms. Clinical follow-up was continued for at least six months.

**Results:** 100 patients (29 females), age  $54 \pm 10$  years (range 30 to 72), with a mean LA volume of  $66 \pm 19$  ml completed a mean follow-up of  $356 \pm 168$  days in this prospective study. Before ablation AF was recorded in 44% of patients, using Holter-ECG including 18% of continuous AF throughout the recording. Event recording showed a median AF burden of 24%. The questionnaire showed that the median patient had weekly AF-complaints lasting for hours. All but one patient had successful PVI with a single procedure. After ablation, paroxysmal AF recurrences were seen in 8% of Holter-ECG s; 1% showed continuous AF. The event recording revealed an AF burden of 7%. The median patient afterwards reported no more AF related symptoms. A clinical judgment resulted in an advice for a second procedure in 23 patients (24%), of which 17 were performed. All showed reconduction in  $3 \pm 1$  PV s. After the second procedure, the freedom of AF was 64% without AAD; and additional 30% was free from AF under AAD treatment, yielding a clinical success of 93%. Four instances of temporary right phrenic nerve paralysis occurred, all resolving within six months. No PV stenosis, nor life threatening long term complications were observed.

**Conclusion:** PVI with a cryothermal balloon is an effective treatment for paroxysmal AF, resulting in a high clinical success rate even after a single procedure. Temporary right phrenic nerve paralysis is the most important complication.