

Preventing atrial fibrillation by combined right isthmus ablation and cryoballoon pulmonary vein isolation in patients with typical atrial flutter: the PAF-CRIOBLAF study

Frederic Anselme¹, Arnaud Savoure², Nicolas Clementy³, Olivier Cesari⁴, Dominique Pavin⁵, Laurence Jesel⁶, Pascal DEFAYE⁷, Serge Boveda⁸, Jean-Pierre Cebron⁹, Jacques Mansourati¹⁰, Alexis Mechulan¹¹, Gilles Lande¹², Michael Bubenheim¹³, Antoine Milhem¹⁴, and Philippe Rivat¹⁵

¹Hôpital Charles Nicolle

²Rouen University Hospital

³Centre Hospitalier Régional Universitaire de Tours

⁴Clinique Saint-Gatien

⁵Rennes University Hospital

⁶Centre Hospitalier Universitaire de Strasbourg

⁷Grenoble University Hospital

⁸Clinique Pasteur

⁹Confluent Nouvelles Cliniques Nantaises

¹⁰University hospital La Cavale Blanche

¹¹Ramsay Général de Santé

¹²Centre Hospitalier Universitaire de Nantes

¹³Centre Hospitalier Universitaire de Rouen

¹⁴Centre hospitalier de la Rochelle

¹⁵Centre Hospitalier de Valenciennes

May 29, 2020

Abstract

Aims - Although less common, typical atrial flutter (AFL) shares similar pathophysiologic roots with atrial fibrillation (AF). Following successful cavo-tricuspid isthmus ablation using radiofrequency (RF), many patients, however, develop AF in the mid-to-long-term. This study sought to assess whether pulmonary vein isolation (PVI) conducted at the same time as cavo-tricuspid isthmus ablation would significantly modify the AF burden upon follow-up (FU) in patients suffering from typical AFL. **Methods** - This was a multicenter randomized controlled study involving AFL patients with history of non-predominant AF (1 AF episode only in 67% of population) who were scheduled for CTI RF ablation. Patients were randomly assigned to either undergo cavo-tricuspid isthmus (CTI) ablation alone or CTI plus PVI (CTI+). PVI was performed using cryoballoon technology. An outpatient consultation with ECG and 1-week Holter monitoring was performed at 3, 6 months, 1 year, and 2 years post-procedure. The primary endpoint was AF recurrences lasting more than 30 s at 2 years post-ablation. **Results** - Of the patients enrolled, 36 were included in each group. At 2-year FU, the AF recurrence rate was significantly higher in the CTI versus CTI+ group (25/36, 69% vs. 12/36, 33% respectively; $p < 0.001$), with similar AFL recurrence rates. There were no differences in quality of life or undesirable events, except for transient phrenic nerve palsy reported from three PVI patients (8.3%). **Conclusion** - PVI using cryoballoon technology was proven to significantly reduce the AF incidence at 2 years

post-CTI-ablation.

Hosted file

JCE PAF_CRIOBLAF_Manuscript (final-FA).doc available at <https://authorea.com/users/327793/articles/455227-preventing-atrial-fibrillation-by-combined-right-isthmus-ablation-and-cryoballoon-pulmonary-vein-isolation-in-patients-with-typical-atrial-flutter-the-paf-crioblaf-study>