SIGNIFICANT PULMONARY VEIN REMODELING AFTER DUTY-CYCLED BIPOLAR AND UNIPOLAR RADIOFREQUENCY ABLATION FOR SYMPTOMATIC ATRIAL FIBRILLATION

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Monday, March 26, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Arrhythmias: AF/SVT: Outcomes after Catheter Ablation of Atrial Arrhythmias
Abstract Category: 16. Arrhythmias: AF/SVT
Presentation Number: 1237-186

Authors: Marieke Compier, Darryl Leong, Nina Ajmone Marsan, Victoria Delgado, Katja Zeppenfeld, Martin Schalij, S. A. I. P. Trines, Leiden University Medical Center, Leiden, The Netherlands

Introduction: A novel duty-cycled bipolar and unipolar ablation catheter (PAVC) has been developed for isolation of the pulmonary veins (PVs) in patients with atrial fibrillation (AF). The effect on PV dimensions is unknown however.

Methods: 73 patients (age 60, 64% male) with drug-refractory AF scheduled for a first ablation procedure were included. A CT-scan was performed before and one year after ablation. PV diameters, ostial areas and left atrial (LA)-volumes were measured on CT. Patients were divided in two groups depending on maintenance of sinus rhythm (SR) or AF-recurrence one year after ablation.

Results: Baseline characteristics and PV dimensions were comparable. Patients in SR one year after PAVC showed a significant decrease of the diameter and ostial area of all PVs (mean reduction 31 ± 14%, figure 1). Patients with AF-recurrence also showed a significant reduction of all PVs (mean reduction 18 ± 10%). In 4% of the patients, a stenosis of at least one PV was found. In the majority of cases, this appeared to be mild stenosis. LA volumes were 16% reduced in the SR group (p = 0.00) and 7% in the AF-recurrence group at follow-up (p = 0.005)

Conclusion: Ablation with PAVC leads to a significant decrease in PV dimensions much larger than observed with other ablation catheters. The reduction of PV ostial area was more pronounced in patients with SR compared to patients with AF-recurrence. Only part of this reduction can be explained by the occurrence of reverse remodeling of the left atrium.