MID-TERM IMPACT OF CONTACT FORCE ON PROCEDURAL SUCCESS OF PAROXYSMAL ATRIAL FIBRILLATION ABLATION.

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Background: Real-time measurement of contact force (CF) during catheter ablation of atrial fibrillation (AF) has been recently made possible and seems to impact on acute procedural results. However, the role of CF intensity on midterm results and best cutoff values in humans are yet to be determined.

Methods: Ablation of paroxysmal AF (pulmonary vein encircling) using the Smart Touch ^{TM} catheter was performed in 100 consecutive patients (age 63±9; 79% men) undergoing a first ablation procedure. CF was measured during the procedure and average values were used for grouping patients into two groups: higher quartile of average CF (≥22g) and remaining patients. Patients were followed during a mean of 15±6 months using 24-hour Holter recordings at 1st, 3, 6, 12 and 24 months, and symptom-driven, when necessary.

Results: Average CF among all procedures was 19.6±3.7 g. Acute pulmonary vein (PV) isolation was obtained in all patients. However, more patients in the lower CF group needed complementary segmentary radiofrequency applications (36.0% vs. 8.0% P=0.008). During the 3 months blanking period, only one patient relapsed in the high CF group and the same occurred in seven of the remaining (4.0% vs 9.3%; P = 0.379). During the remaining follow-up, 14 patients presented an AF relapse. Kaplan-Meyer curves illustrate the higher incidence of AF relapse observed in lower CF patients during follow-up (log rank P = 0.019). Pericardial tamponade occurred in one patient in higher CF group. No thromboembolism or procedure-associated deaths were observed.

Conclusions: Higher values of CF seem to be associated with a higher likelihood of sinus rhythm maintenance after paroxysmal AF ablation. Aiming at CF values ≥ 22g does not seem to increase the overall rate of procedure-related complications.