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Is atrio-ventricular node ablation a neglected option after failure of atrial fibrillation ablation? a French nationwide cohort study

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Background. Atrial fibrillation (AF) catheter ablation is a validated therapy for patients with symptomatic AF after failure or intolerance to antiarrhythmic drug therapy. Despite improvements in ablation technique, 30 to 50% of the patients may have AF recurrences. The APAF-CRT trial recently demonstrated that atrio-ventricular node ablation (AVNA) and cardiac resynchronization pacing was superior to pharmacological therapy in reducing HF and hospitalization in patients with permanent AF. The purpose of the study was to quantify the use of AVNA after AF catheter ablation and to find independent predictors factors associated with AVNA in this setting.

Methods. This French longitudinal cohort study was based on the national hospitalization database covering hospital care from the entire population. The data for all patients admitted in France from January 2010 to December 2015 were collected from the national administrative database, the PMSI (Programme de Médicalisation des Systèmes d’Information). We included all patients, over 18 years old, with AF and at least one AF catheter ablation. Routinely collected medical information includes the principal or secondary diagnoses and procedures performed. Items from the baselines characteristics were pooled into a multivariate Cox model to identify predictors of AV node ablation.

Results. Of 1,663,284 patients identified with AF, 28,018 patients were treated with AF ablation (28% female, mean age 60±10 yo). Of those, there were only 369 patients (1.3%) treated with AVNA after a mean follow-up of 374±488 days. Most powerful independent predictors of AV node ablation (HR > 1.7) were age=75 yo, heart failure at baseline, abnormal renal function and valve disease. Other independent predictors for AV node ablation (HR 1.2-1.7) were age 65-74 yo, female gender, obesity, coronary artery disease, thyroid disorders, lung disease and hypertension.

Conclusion. AVNA seems a very rare option after AF ablation considering the usual rate of AF recurrence and the possible benefits to be obtained with AVNA in these patients. Several factors were anyway associated with the need for AVNA after AF catheter ablation. Our findings, along with the results of the APAF-CRT trial, suggest to choose more frequently a rate control strategy with AVNA. This might also be decided earlier in patients with highly symptomatic AF and with high risk of ablation (or re-do ablation) failure.