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073_16735-H5 Reverse Electrical Remodeling Induced by Sinus Rhythm and Calcium Channel Blockers May Play a Role for Better Long-Term Follow-Up Results in Patients With Long Standing Persistent Atrial Fibrillation and Treated With Cryo-Balloon Ablation

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Introduction

The electrical disconnection of the pulmonary veins (PV) from the left atrium (LA) by cryo-balloon ablation (CB), has proven effective to treat patients (pts) with atrial fibrillation (AF). However the results significantly differ from paroxysmal to persistent, and several factors related with the atrial remodeling process play an important role on this. AF causes electrical remodeling, and chronic AF led to shortening of the atrial effective refractory period (AERP), and to loss of its physiological rate adaptation, which could make atria more vulnerable to fibrillation. Human and experimental studies have demonstrated that electrophysiological changes are influenced by intracellular calcium overload, and verapamil (VP), but not other antiarrhythmic drugs (ADD) could markedly attenuate this effect. According with the aforementioned, we sought to achieve electrical atrial stabilization with VP after cardioversion (CV) 3 months before CB-PV ablation in patients with long standing persistent atrial fibrillation (LSPAF).

Methods

Sixty nine pts, 56 male (61±10 mean age) were treated for LSPAF, 54 with the second generation CB and PV isolation demonstrated. The mean time duration of stable arrhythmia was 5±5 years (2-24). All previously treated with AAD. Mean LA size: 42±6 mm. After CV, electrophysiological evaluation pre and post 0.15 mgr/Kg body weight of VP was done and the AERP at 500 ms pacing CL measured. Criteria of exclusion for CB-PV ablation included: left atrial size ≥ 50mm, and failed CV to reverse AF. After 3 months blanking period on AAD, PV complete electrical isolation was achieved with CB, and a mean period follow-up duration of 42.6 months (4±2 years), analyzed.

Results

Mean AERP increased from 205±16 to 237±16 ms ($p \leq 0.05$) after VP. Forty six pts (66%) maintain SR without AAD after a single procedure. AF recurred in 23 pts (33%) who were given AAD: 9 pts refused a second procedure (REDO) and remain in AF. In the remaining 14, sinus rhythm (SR) was restored with AAD and were REDO. In a mean REDO follow-up of 30±20 months, all 14 REDO pts remain in SR (4 on AAD). After REDO, 60 pts (87%) remain in SR.

Conclusions

Reverse atrial electrical remodeling induced by SR + VP 3 months before CB-PV ablation can select LSPAF pts for CB-PV isolation with better long term outcomes.