Impact of tailored cardiac rehabilitation on clinical outcome after catheter ablation in patients with atrial fibrillation: A single center, Prospective, Randomized Clinical Trial

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Introduction: The aim of our study was to assess the impact of aerobic interval training by comprehensive cardiac rehabilitation on physical capacity and clinical outcome in catheter ablation in patients with atrial fibrillation (AF) patients.

Methods: We enrolled 68 AF patients who underwent AF ablation (mean age $56 \pm 7$ years, 15 (21.7%) female, 35 paroxysmal AF (47.8%)) with randomized cardiac rehabilitation (CR) group (cardiac rehabilitation programmed of 18 times by specialist of rehabilitation medicine after AF ablation) versus conventional group (patients who had not performed cardiac rehabilitation). CR group were divided into two subgroups according to CR completion: unfinished group (patients who had partially performed less than 9 times among total 18 times of CR program) and completion group (patients who had completely performed more than 9 times among total CR program) in detail. Clinical variables were compared between each group. The primary end points including Oxygen uptake during peak exercise (VO2 peak) and AF recurrence were assessed.

Result: There were no significant differences in proportions of comorbidities and use of medication between CR and conventional group. Mean CHA2DS2-VASc score were $1.8 \pm 1.1$ and $2.0 \pm 1.2$, respectively ($p=0.68$). During $12 \pm 7$ months follow-up, fewer patients in CR group were recurred for AF compared to conventional group (2 (8.7%) vs. 7 (15.6%)); However, Kaplan-Meier estimates did not reach statistical significance between CR and conventional group (Log-rank $p=0.39$). Compared with the unfinished group, the completion group had a beneficial effect on VO2 peak at CR program of 18 times ($43.1 \pm 5.3$ vs. $49.5 \pm 5.6$ mL kg $^{-1}$ min $^{-1}$, $p=0.10$; 9.7% vs. 21.9% of VO2 improvement, $p=0.02$) among patients with CR.

Conclusion: Comprehensive cardiac rehabilitation had a positive effect on physical capacity compared with conventional post AF ablation management. Further research is needed to assess clinical outcome.