Home-based cardiac rehabilitation versus conventional care for patients with atrial fibrillation treated with catheter ablation: A randomized controlled trial

Cheng Cai
Gang Yang
Zhipeng Bao
Fengxiang Zhang
Weizhu Ju
Hongwu Chen
Mingfang Li
Kai Gu
Guozhen Sun
Minglong Chen

Introduction: Radiofrequency ablation (RFA) is often undertaken in symptomatic patients and has been achieved a very high success rate. However, the symptoms like palpitations, dyspnea and fatigue are common and the exercise capacity decreases. This study was aimed to assess the effects of comprehensive home-based cardiac rehabilitation compared with usual care on cardiac function and mental health for patients treated with catheter ablation for atrial fibrillation.

Methods: Patients with atrial fibrillation treated by catheter ablation were randomized to cardiac rehabilitation consisting 8-week home-based physical exercise and smartphone-based follow-up versus usual care. The exercise proposal required the patients to exercise at the target heart rate for at least 150 minutes per week and report completion via a smartphone-based follow-up system. The primary endpoint was the value of VO2 peak. The secondary outcomes included performance in 6-minute walk, self-rated mental health measured by the Short Form-36 questionnaire and Zung’s Self-Rating Anxiety Scale, sleep quality assessed by Pittsburgh sleep quality index scale.

Result: Fifty-six patients (mean age: 55.2 ± 9.2, 78.6% male, 27 subjects in control and 29 in cardiac rehabilitation group) completed the follow-up. Baseline characteristics were comparable between the two groups. Compared with usual care, the cardiac rehabilitation group showed a significant improvement in cardiac function assessed by VO2 peak (baseline vs. 8-week follow-up, 18.8 ± 5.6 vs. 28.9 ± 7.5 mL/kg·min; P < .001) and 6-minute walk (baseline vs. 8-week follow-up, 456(408, 496) vs. 495(480, 543) m; P < .001). Meanwhile, there was significant improvement in self-rated mental health in cardiac rehabilitation group, but not in usual care group. In addition, multivariate logistic regression analysis showed that rehabilitation was the only factor associated with improvement in exercise performance measured by VO2 peak after adjustment (OR [95% CI], 16.3 [2.9-92.4]; P = .002).

Conclusion: Comprehensive home-based cardiac rehabilitation had a positive effect on physical capacity compared with usual care in atrial fibrillation patients treated with catheter ablation in a short period, as well as on mental health.