

Associations of exercise-based cardiac rehabilitation with all-cause mortality among patients with atrial fibrillation

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Background: There is limited evidence of long-term impact of exercise-based CR on clinical endpoints for patients with AF. We therefore compared 18-month all-cause mortality, hospitalisation, stroke, and heart failure in patients with AF and an electronic medical record (EMR) of exercise-based CR to matched controls.

Methods and Results

This retrospective cohort study included patient data obtained on 11 December 2020, from a global federated health research network. AF patients undergoing exercise-based CR were propensity score matched to AF patients without exercise-based CR by age, sex, race, medication, and co-morbidities. We ascertained 18-month incidence of all-cause mortality, hospitalisation, stroke, and heart failure.

Of 1,350,886 patients with AF, 10,625 patients had an EMR of exercise-based CR within 6-months of incident AF. The propensity score matched cohort of 21,250 patients with AF demonstrated that exercise-based CR was associated with 64% lower odds of all-cause mortality (odds ratio 0.36, 95% confidence interval (CI) 0.33-0.40), 41% lower odds of hospitalisation (0.59, 95% CI 0.56-0.63), and 17% lower odds of incident stroke (0.83, 95% CI 0.71-0.98) compared to propensity score matched controls. No significant associations were shown for heart failure at 18-months (0.92, 95% CI 0.81-1.02). The beneficial association of exercise-based CR on all-cause mortality was independent of sex, older age, comorbidities, and AF subtype.

CONCLUSIONS: Exercise-based CR among patients with incident AF was associated with lower odds of all-cause mortality, hospitalisation, and stroke at 18-months follow-up. The longitudinal nature of this retrospective follow-up study strongly supports the provision of exercise programmes for patients with incident AF.