



Effectiveness and safety of remote cardiac rehabilitation for patients following acute coronary syndrome

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Objective

We aimed to evaluate the effectiveness of remote cardiac rehabilitation compared to center-based cardiac rehabilitation.

Background

Cardiac rehabilitation improves cardiovascular outcomes in patients following acute coronary syndrome. Recently there has been a growing interest in remote cardiac rehabilitation programs.

Methods

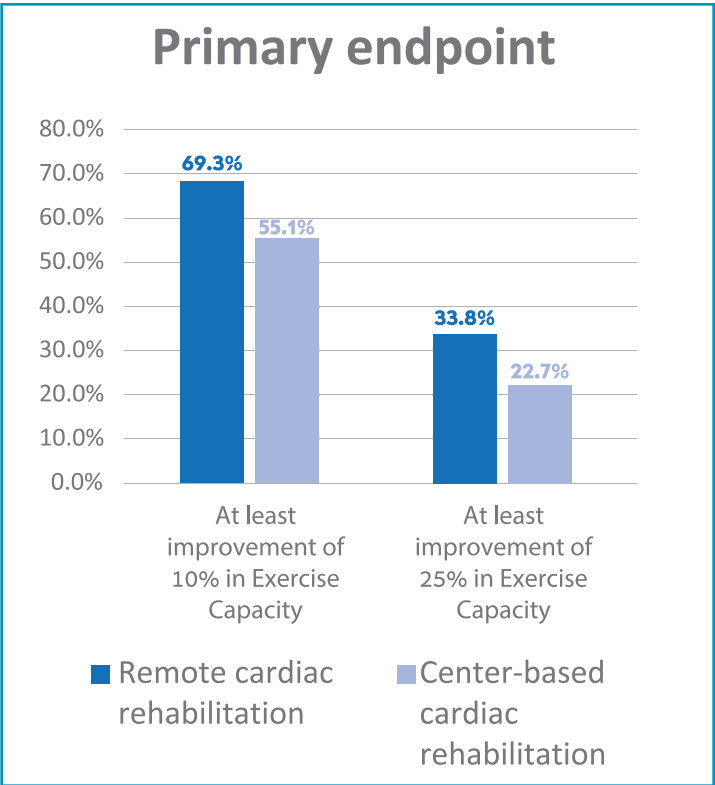
An observational study including patients following hospital admission for acute coronary syndrome. The study group included patients at low to moderate risk for cardiovascular complications who were referred for remote cardiac rehabilitation. The control group included patients at similar risk who participated in center-based cardiac rehabilitation. The primary endpoints were the improvement of at least 10% to 25% in exercise capacity following 6 months of cardiac rehabilitation.

Results

Included were 305 patients who completed 6 months of cardiac rehabilitation. Of them, 107 patients participated in remote cardiac rehabilitation, and 198 in center-based cardiac rehabilitation. Remote cardiac rehabilitation patients were younger and more frequently males. Improvement of ≥10% in exercise capacity following 6 months was achieved more frequently in patients participating in remote cardiac rehabilitation compared to center-based cardiac rehabilitation (69.3% and 55% respectively, p=0.03). A similar trend was observed for improvement of ≥25% in exercise capacity following 6 months (33.8% and 22.7% in Remote cardiac rehabilitation and center-based cardiac

Baseline demographic and clinical parameters

Demographic Characteristics	Remote cardiac rehabilitation (N=107)	Center-based cardiac rehabilitation (N=198)	Overall p-value
Gender			
Male	92 (86%)	133 (67.2%)	<0.001
Age (years)	58.1±10.6	67.9±9.5	<0.001
≥ 65	39 (36.4%)	131 (66.2%)	<0.001
Baseline Measurements			
Height (cm)	173.5±7.2	169.4±10.2	<0.001
Weight (kg)	84.5±13.6	81±16.6	0.065
BMI (kg/m²)	28.0±3.9	28.2±4.5	0.635
Body fat (%)	27.5±7.9	30.5±8.8	0.005
Visceral fat (%)	12.3±4.5	12.9±4.7	0.313
Muscle mass (%)	32.3±4.1	29.9±4.3	<0.001
Clinical Characteristics			
Dyslipidemia	80 (74.8%)	152 (81.3%)	0.188
Diabetes mellitus	20 (18.7%)	41 (20.7%)	0.675
Cigarette smoking	39 (36.4%)	55 (29.4%)	0.213
Family history of CAD	45 (42.1%)	61 (32.6%)	0.105
PVD	11 (10.3%)	15 (8.0%)	0.503
LV EF (%)	55.1±7.6	48.7±9.5	<0.001
NSTE-ACS	58 (54.2%)	108 (54.5%)	0.955
STEMI	49 (45.8%)	90 (45.5%)	0.955
PCI	98 (91.6%)	158 (84%)	0.066
CABG	21 (19.6%)	39 (20.9%)	0.801



	Remote cardiac rehabilitation (N=107)	Center-based cardiac rehabilitation (N=198)	p-value
Body weight change (kg)	-2.69	-2.69	0.271
BMI change (kg/m2)	-1.0	-1.0	0.147
Body fat percentage change (%)	-2.53	-2.53	0.004
Visceral fat percentage change (%)	-1.2	-1.2	0.079
Muscle mass change (%)	+1.1	+1.1	0.87

Conclusion

Remote cardiac rehabilitation program is an effective and safe option for low to moderate risk patients following hospital admission for acute coronary syndrome. It enables optimizing the utilization of this important service for patients with coronary artery disease.