Abstract: 6076

**Improvement of exercise capacity over the course of outpatient cardiac rehabilitation is an independent predictor of prognosis after a myocardial infarction**

**Authors:**
M Novakovic\(^1\), T Novak\(^2\), T Vizintin Cuderman\(^1\), B Krelči\(^1\), J Tasie\(^1\), U Rajkovič\(^3\), Z Fras\(^1\), B Jug\(^1\),
\(^1\)University Medical Centre Ljubljana, Department of Vascular Diseases - Ljubljana - Slovenia, \(^2\)University of Ljubljana, Faculty of Medicine - Ljubljana - Slovenia, \(^3\)University of Maribor, Faculty of Organisational Sciences - Kranj - Slovenia,

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Background: Cardiac rehabilitation after myocardial infarction improves cardiovascular health and quality of life. However, data on long-term prognostic impact of surrogate rehabilitation parameters—such as exercise capacity improvements—remain scarce.

Purpose: To assess the independent prognostic impact of exercise capacity improvement over the course of outpatient cardiac rehabilitation after myocardial infarction.

Methods: Consecutive patients undergoing outpatient cardiac rehabilitation (3-times weekly for 12 weeks) after a myocardial infarction at a university centre were included. Exercise testing was performed at inclusion and after completion of the rehabilitation programme, with exercise capacity improvement defined as \( \geq 2 \) MET increase over the course of the programme. Clinical data and risk factors were systematically collected, and patients were followed up for a minimum of 2 years. Kaplan-Meier curves and a multivariate Cox proportional hazard model were constructed for prediction of events (defined as a composite of incident cardiovascular death, re-infarction and coronary revascularisation), with age, sex, LDL-cholesterol levels and body mass index as co-variates.

Results: A total of 409 patients were included (20% women). Exercise capacity and expected exercise performance were significantly improved after cardiac rehabilitation programme (6.6 to 9.5 METs, \( p<0.001 \), and 82 to 117%, \( p<0.001 \), respectively). After a median follow-up of 6.5 years, 93 patients experienced an event. Exercise capacity improvement of \( \geq 2 \) METs was associated with reduced event rates (Figure 1), retaining statistical significance even after adjusting for age, sex, LDL-cholesterol and body mass index (HR 0.485, 95% CI 0.285-0.824).

Conclusion: Improvement of exercise performance over the course of outpatient cardiac rehabilitation is an independent predictor of prognosis after a myocardial infarction, with improvements of \( \geq 2 \) METs associated with a 50% reduction in events.
Improvement of exercise capacity over the course of outpatient cardiac rehabilitation is an independent predictor of prognosis after a myocardial infarction, with improvements of ≥2 METs associated with a 50% reduction in events.