

Feasibility of hybrid telerehabilitation as component of a novel comprehensive care program after acute myocardial infarction in a one-year follow-up preliminary experience of a single center

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Background. A novel comprehensive care program after acute myocardial infarction (AMI) „KOS-zawał” was implemented in Poland. It includes acute intervention, complex revascularization, implantation of cardiovascular electronic devices (in case of indications), rehabilitation or hybrid telerehabilitation (HTR) and scheduled outpatient follow-up. HTR is a unique component of this program.

The purpose of the pilot study was to evaluate a feasibility, safety and patients' acceptance of HTR as component of a novel care program after AMI and to assess mortality in a one-year follow-up.

Methods: The study included 55 patients (LVEF $55.6 \pm 6.8\%$; aged 57.5 ± 10.5 years). Patients underwent a 5-week HTR based on Nordic walking, consisting of an initial stage (1 week) conducted within an outpatient center and a basic stage (4-week) home-based telerehabilitation five times weekly. HTR was telemonitored with a device adjusted to register electrocardiogram (ECG) recording and to transmit data via mobile phone network to the monitoring center. The moments of automatic ECG registration were pre-set and coordinated with exercise training. The influence on physical capacity was assessed by comparing changes in functional capacity (METs) from the beginning and the end of HTR. Patients filled in a questionnaire in order to assess their acceptance of HTR at the end of telerehabilitation.

Results: HTR resulted in a significant improvement in functional capacity and workload duration in exercise test (Table). Safety: there were neither deaths nor adverse events during HTR. Patients accepted HTR, including the need for interactive everyday collaboration with the monitoring center.

Prognosis: all patients survived in a one-year follow-up.

Conclusions: Hybrid telerehabilitation is a feasible, safe form of rehabilitation, well accepted by patients. There were no deaths in a one-year follow-up.

Outcomes before and after HTR

	Before telerehabilitation	After telerehabilitation	P
Exercise time [s]	381.5 ± 92.0	513.7 ± 120.2	<0.001
Maximal workload [MET]	7.9 ± 1.8	10.1 ± 2.3	<0.001
Heart rate rest [bpm]	68.6 ± 12.0	66.6 ± 10.9	0.123
Heart rate max effort [bpm]	119.7 ± 15.9	131.0 ± 20.1	<0.001
SBP rest [mmHg]	115.6 ± 14.8	117.7 ± 13.8	0.295
DBP rest [mmHg]	74.3 ± 9.2	76.2 ± 7.3	0.079
SBP max effort [mm Hg]	159.5 ± 25.7	170.7 ± 25.5	0.003
DBP max effort [mm Hg]	84.5 ± 9.2	87.2 ± 9.3	0.043

SBP systolic blood pressure, DBP diastolic blood pressure.