

Telerehabilitation in coronary artery disease (TRIC-study), 3 months data

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Purpose

The aim of the study was to evaluate safety and feasibility of home-based telerehabilitation for patients with uncomplicated coronary artery disease (CAD).

Methods

This non-randomised parallel group study assigned forty-five male patients for shortened 2 weeks inpatient rehabilitation followed by a 10 weeks telerehabilitation program (TRG) versus forty-one patients who completed a conventional 4 weeks inpatient rehabilitation program (CG). The telerehabilitation equipment in the participant's home included a bicycle ergometer, a computer, a heart rate sensor, and a digital blood pressure monitor. Data transfer to a central server was performed by using a special coded SIM-card. Training was individually prescribed by a physician and a medical technician.

Outcome measures were assessed at baseline (T0) and after 12 weeks (T1) using cardiopulmonary function (Watt (W)peak, Wpeak/kg, WVAT1(ventilatory aerobic threshold1), VO2peak/kg, VO2VAT1/kg), ratings for anxiety and depression (Hospital Anxiety and Depression Scale (HADS-D)), and quality of life (QOL SF36).

Results

No statistical difference was observed between the two groups at baseline.

After 12 weeks in the TRG, Wpeak (+21,5%), Wpeak/kg (+27,8%), WVAT1 (+18,9%), VO2peak/kg (+17,8%), and VO2VAT1/kg (+13,7%) were increased ($p < 0,001$ for all variables).

In the CG, Wpeak, Wpeak/kg, WVAT1, VO2peak/kg, VO2VAT1/kg increased by 3,7%, 5,3%, 5,3%, 3,6%, 6,9% respectively, only Wpeak/kg improved statically significant ($p = 0,048$).

The difference between TRG and CG was highly significant for VO2peak/kg ($p = 0,045$), Wpeak ($p = 0,021$), and Wpeak/kg ($p < 0,01$).

Anxiety, depression, and quality of life were not different between the groups at T0 or T1, but both groups showed a statically significant improvement due to physical quality of life after three months.

No adverse events were documented and TRG-patients acceptance of home-based rehabilitation program was very high.

Conclusions

Accordingly home-based telerehabilitation can be regarded as safe and feasible for patients with uncomplicated CAD. In addition we could show significant improvements due to physical fitness in the TRG.