

P1927

A European randomised controlled trial for m-health guided cardiac rehabilitation in the elderly; results of the EU-CaRE RCT study

E.P. De Kluiver¹, A.E. Van Der Velde¹, E.P. Meindersma², L.F. Prins³, M. Wilhelm⁴, M.C. Iliou⁵, C. Pena Gil⁶, J.R. Gonzalez-Juanatey⁶, J.A. Snoek¹, E. Kolkman³, A.W.J. Van't Hof⁷, E. Prescott⁸

¹Isala Hospital, Zwolle, Netherlands (The); ²Radboud University Medical Centre, Nijmegen, Netherlands (The); ³Diagram BV, Zwolle, Netherlands (The); ⁴Preventive Cardiology & Sports Medicine, Inselspital Bern, Bern, Switzerland; ⁵Assistance Hopiteaux Publique de Paris, Paris, France; ⁶University Hospital of Santiago de Compostela, Santiago de Compostela, Spain; ⁷Maastricht University Medical Centre (MUMC), Maastricht, Netherlands (The); ⁸Bispebjerg University Hospital, Copenhagen, Denmark

On behalf of EU-CaRE study group

Funding Acknowledgement: European Union's Horizon 2020 research and innovation programme under grant agreement number 634439, and funding from the Swiss Government.

Introduction: Knowledge about effectiveness of cardiac rehabilitation (CR) in the elderly is limited. Participation rates in supervised CR are consistently lower in the elderly and innovative interventions are needed. The EU has granted a CR study project; a randomised controlled trial conducted in 5 European countries, investigating the effectiveness of mobile telemonitoring guided CR (mCR) in elderly cardiac patients who declined regular CR.

Methods: Patients ≥ 65 years with indication for CR who declined regular CR were eligible for inclusion. Patients were randomised between regular care (without CR) and a 6-month mCR programme: dedicated programmed smartphone, heartrate monitoring (target HR zones) and coaching. The primary endpoint is the difference in VO₂peak between 6-months follow-up and baseline.

Results: Between 2015 and 2018 179 patients were included. Baseline characteristics between groups (table 1) did not differ significantly, except for hypertension. The difference in VO₂peak was significantly better in the mCR group (table 1). After correction (mixed linear model) for baseline VO₂ peak (fixed factor) and centre (random factor) this difference remained significant. Mean number of registered activity sessions was 4.79 (95% CI; 4.07–5.50) per patient per week.

Conclusions: The application of mCR in elderly patients who declined regular CR results in a better physical condition after 6 months. Compliance to mCR was excellent.

Table 1. Baseline and primary outcome parameters

Baseline	Control Programme (n=90)	mCR Programme (n=89)	P-value
Gender (m/f)	76/14	69/20	0.238
Age (mean \pm SD)	73.57 \pm 5.46	72.38 \pm 5.37	0.121
Diabetes	15 (16.7%)	23 (25.8%)	0.133
Hypertension	60 (66.7%)	73 (82.0%)	0.019*
Hypercholesteremia	71 (78.3%)	74 (83.1%)	0.468
Normal LV-function	48/89 (53.9%)	53/89 (59.6%)	0.497
Index event (CABG/Valve/PCI/none)			0.735
Cardiac history prior to index event	48/89 (53.9%)	53/89 (59.6%)	0.702
Non cardiac comorbidity	40 (44.4%)	44 (49.4%)	0.503
Results			
Baseline VO ₂ peak (ml/kg/min) (95% CI)	19.83 (18.65–21.01)	18.78 (18.67–19.89)	0.191
Delta VO ₂ peak at 6 months (ml/kg/min) (95% CI)	0.20 4 (-0.34–0.83)	1.62 (0.86–2.39)	0.005*
Corrected delta VO ₂ peak at 6 months (ml/kg/min)	0.50 (-1.04–2.04)	1.65 (0.11–3.2)	0.015*

*Significant.