Center of Rehabilitation Research

Influence of patients' expectation of return to work on employable discharge from multi-component cardiac rehabilitation after acute cardiac event

Annett Salzwedel[1], Miralem Hadzic[1], Hermann Buhlert[2], Heinz Völler[1,2]

Introduction

Psychosocial factors such as depression and negative expectations reduce the probability of return to work after cardiac rehabilitation (CR). We aimed to characterize patients after an acute coronary syndrome (ACS) or cardiac surgery with negative expectations in terms of return to work and its impact on employable discharge from CR.

Methods

We analyzed data from 884 CR-patients (52 ± 7 years, 77% men). The 3-week inpatient multi-modal CR started within 14 days after discharge from hospital. Sociodemographic data (e.g. age, sex, education level), diagnoses including comorbidities, functional parameters (echocardiography, exercise stress test, 6-min walking test), hospital anxiety and depression scale (HADS) as well as self-assessment of occupational prognosis (negative expectations and/or unemployment, Würzburger screening) at admission to CR were taken from patient records. The status at discharge from CR (employable vs. not) as primary outcome was analyzed by regression model.

Results

384 patients (43%) had a negative occupational prognosis: 368 of these (96%) expected no return to work after CR; 113 (29%) were unemployed before CR (Fig. 1). Affected patients showed reduced left ventricular ejection fraction, exercise capacity and 6-min walk distance, more often depression diagnosis as well as higher depression level and anxiety level in the HADS (Table, Fig. 2).
At discharge, 21% of this group (n = 81) and 35% of patients with normal occupational prognosis (n = 175), respectively, were considered to be able to work (P <0.01). The probability of employable discharge was reduced by sick leave before ACS and negative occupational expectations. An additional unemployment and higher exercise capacity were positively associated (Fig. 3).

Conclusion

A high proportion of patients in CR after ACS expected no return to work. These patients showed often a reduced physical performance and high psychosocial burden. Patients' occupational expectation is a predictor of employable discharge from CR. Therefore, affected patients should be identified at admission to allow a targeted psychological care.

Fig. 1 Proportion of patients with negative occupational prognosis according to Würzburger Screening in CR
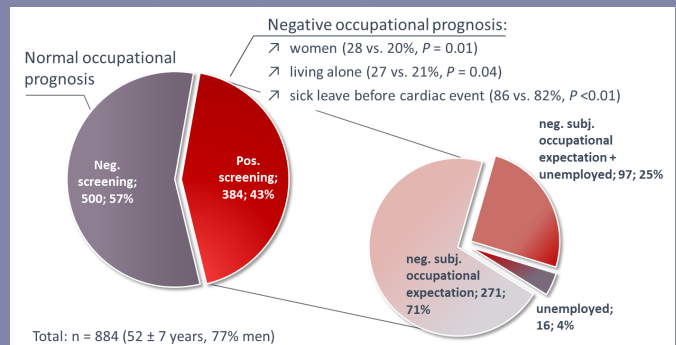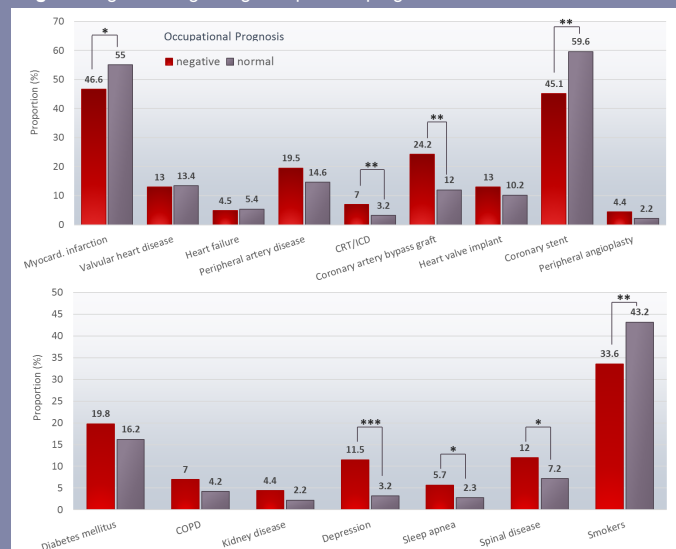

Negative occupational prognosis:
↗ women (28 vs. 20%, P = 0.01)
↗ living alone (27 vs. 21%, P = 0.04)
↗ sick leave before cardiac event (86 vs. 82%, P <0.01)

Total: n = 884 (52 ± 7 years, 77% men)

Table Functional parameters by occupational prognosis at admission to CR

Parameter	Occupational prognosis		P-value
	Normal (n=500)	Negative (n=384)	
LVEF (%)	56.0 ± 8.5	53.8 ± 9.2	< 0.001
Max. exercise capacity (Watt)	117.7 ± 33.2	99.8 ± 34.8	< 0.001
6-min walk distance (meter)	420.8 ± 61.8	380.1 ± 83.7	< 0.001
HADS-depression (point)	4.9 ± 3.8	6.9 ± 4.3	< 0.001
HADS-anxiety (point)	5.9 ± 4.0	7.7 ± 4.4	< 0.001

Data given as mean ± standard deviation; LVEF, left ventricular ejection fraction; HADS, hospital anxiety and depression scale

Fig. 2 Diagnoses regarding occupational prognosis

CRT/ICD, cardiac resynchronization therapy/implantable cardioverter-defibrillator; COPD, chronic obstructive pulmonary disease

Fig. 3 Predictors of employable discharge from CR (employable n = 249; 29 %)

Parameter	OR	(95% CI)	p-value
Unfavourable occupational prognosis			
Negative occupational expectations (yes vs no)	0.43	(0.26-0.71)	0.001
Negative occupational expectations + unemployed (yes vs no)	2.89	(1.63-5.13)	< 0.001
Unemployed (yes vs no)	1.31	(0.41-4.26)	0.649
Sick leave before cardiac event (yes vs no)	0.38	(0.24-0.61)	< 0.001
Diagnoses/procedures			
CABG (yes vs no)	0.16	(0.07-0.34)	< 0.001
Valve implantation (yes vs no)	0.07	(0.02-0.22)	< 0.001
Valve insufficiency (yes vs no)	2.57	(1.12-5.94)	0.028
Peripheral artery disease (yes vs no)	0.55	(0.32-0.96)	0.036
Diabetes mellitus n (yes vs no)	1.85	(1.14-3.02)	0.014
COPD (yes vs no)	0.40	(0.17-0.93)	0.033
Depression (yes vs no)	0.32	(0.13-0.77)	0.012
Functional parameters			
6-min walking distance at CR admission (per SD=75 m)	1.36	(1.07-1.73)	0.013
Max. exercise capacity at CR admission (per SD=35 W)	1.26	(1.02-1.57)	0.035
Left ventricular ejection fraction (per SD=9 %)	1.30	(1.05-1.60)	0.017

Probability of employable discharge from cardiac rehabilitation

1 Center of Rehabilitation Research, University of Potsdam, Potsdam, Germany
2 Klinik am See, Rehabilitation Center for Internal Medicine, Rüdersdorf, Germany

Disclosures (all authors): none
Contact: annett.salzwedel@uni-potsdam.de