

Outdoor walking training in severe COPD, a feasibility randomized controlled trial.

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Background

- Walking is one of the most important activities of daily living in patients with COPD¹
- Most endurance training programs use cycle ergometer (CET)¹
- The feasibility of an interval outdoor walking training (OWT) in an inpatient rehabilitation setting is unknown

Aim

- To evaluate the feasibility of the study design and an interval OWT.
- To estimate the effect of OWT compared with CET on health-related quality of life, physical capacity, physical activity after three weeks treatment and exacerbation rate at three months follow-up.

Methods

- Feasibility randomized controlled trial with three months follow-up at the rehabilitation center Walenstadtberg
- Patients with COPD GOLD stage III-IV²
- OWT: 4x/week + 2x/week CET, 30 min.
- CET: 6x/week, 30 min.

Results

- 16 patients were included, recruitment rate was 33% (16/48)
- Feasibility was good, BORG scale was preferred
- Patients completed 75% of scheduled trainings
- Patient satisfaction with OWT was high
- Exacerbations: 0 in OWT and 3 in CET during follow-up
- OWT compared with CET significantly improved health-related quality of life in inpatient rehabilitation after three weeks ($p=0.042$, 95%CI 1.06-49.94, effect size (d)=1.19, Table 1, Figure 2).
- There was no significant difference in the other outcomes.

Conclusion

- Study design and OWT are feasible
- OWT improves health-related quality of life and reduces exacerbations
- A RCT with a total of 46 patients and 3 months' follow-up is needed

References

- ¹Gloeckl R, Marinov B, Pitta F. Practical recommendations for exercise training in patients with COPD. European respiratory review : an official journal of the European Respiratory Society. 2013;22(128):178-86.
- ²GOLD. Global Strategy for Diagnosis, Management and Prevention of Chronic Obstructive Pulmonary Disease. GOLD Report. 2017.



Patient using heart-rate watch to monitor training intensity



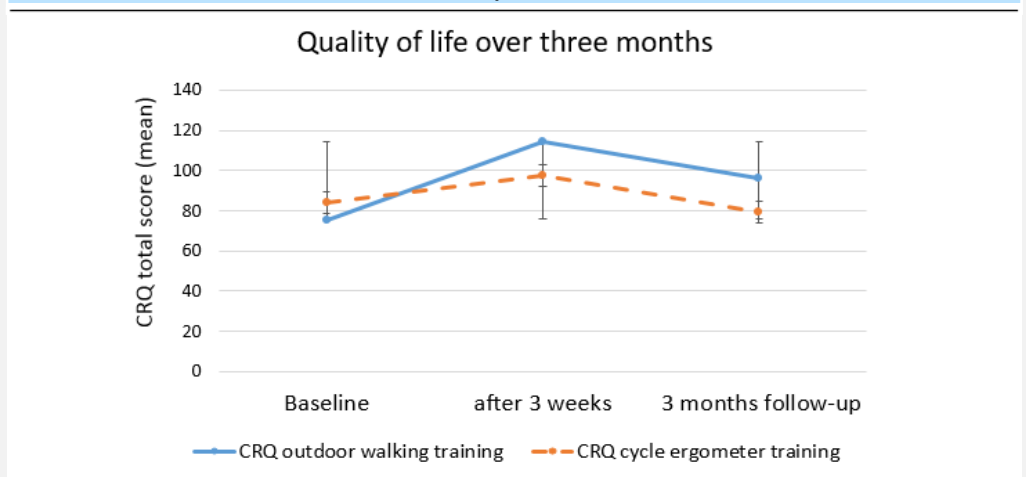
Borg scale was easier to use to monitor training intensity

Table 1: Health-related quality of life (CRQ) after three weeks rehabilitation

	Outdoor walking training		Cycle ergometer training		Difference at 3 weeks (p-value, 95%CI)	Effect Size (d)
	Baseline (mean (SD))	3 weeks (mean (SD))	Baseline (mean (SD))	3 weeks (mean (SD))		
CRQ (total score) ^a	75.50 (27.96)	114.44 (7.77)	84.25 (10.17)	97.71 (17.76)	0.042 (1.06 - 49.94)	1.19

CRQ Chronic Respiratory Questionnaire, 6MWT Six Minute Walk Test, m meters
^a Difference of the improvement between the groups

Figure 2: Quality of life over three months: at baseline, after three weeks and three months follow-up



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