

Exercise training in pulmonary arterial hypertension associated with connective tissue diseases

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Background: The objective of this prospective study was to assess short- and long-term efficacy of exercise training (ET) as add-on to medical therapy in patients with connective tissue diseases-associated pulmonary arterial hypertension (CTD-APAH).

Methods: Patients with invasively confirmed CTD-APAH received ET in-hospital for 3 weeks and continued at home for 15 weeks. Efficacy parameters have been evaluated at baseline and after 15 weeks by blinded-observers. Survival rate has been evaluated in a follow-up period of 2.9 ± 1.9 years.

Results: Twenty-one consecutive patients were included and assessed at baseline, and after 3 weeks, 12 after 15 weeks. Patients significantly improved the mean distance walked in 6 minutes compared to baseline by 67 ± 52 meters after 3 weeks ($p < 0.001$) and by 71 ± 35 meters after 15 weeks ($p = 0.003$), scores of quality of life ($p < 0.05$), heart rate at rest, peak oxygen consumption, oxygen saturation and maximal workload. Systolic pulmonary artery pressure and diastolic systemic blood pressure improved significantly after 3 weeks of ET. The 1- and 2-year overall-survival rates were 100%, the 3-year survival 73%. In one patient lung transplantation was performed 6 months after ET.

Conclusion: ET as add-on to medical therapy is highly effective in patients with CTD-APAH to improve work capacity, quality of life and further prognostic relevant parameters and possibly improves the 1-, 2- and 3-year survival rate. Further randomized controlled studies are needed to confirm these results.

Biography

Felicitas C Maier, born in Kempten - Allgaeu on 24.10.1988, began her studies in medicine at the University of Heidelberg in 2008 and passed the Physikum, the preclinical medical examination, in 2011. She is continuing her studies at the Ludwig-Maximilians-University in Munich. She is doctoral candidate, working on the development of new therapies for PAH-treatment in the team of Professor Gruenig at the University of Heidelberg. She has published her first paper "Exercise training in pulmonary arterial hypertension associated with connective tissue diseases" in Arthritis Research and Therapy this year. Further research results will be published soon.

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