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Tele-rehabilitation program in antifibrotic medicated Idiopathic Pulmonary Fibrosis Patients

J Cerdan-de-las-Heras [*1]

F Balbino [2]

[1]*Department of Respiratory Medicine and Allergy, Aarhus University Hospital, Denmark*

[2]*Physio R&D ApS, Denmark*

Abstract

In Idiopathic Pulmonary Fibrosis (IPF), antifibrotic medication is recommended to delay disease progression and pulmonary rehabilitation to improve quality of life (QoL) and Exercise Capacity. Not all patients with IPF are medicated or can participate in hospital based pulmonary rehabilitation due to frailty and long travelling distances. Tele-rehabilitation (TR) as an add-on to medication, might be an alternative solution. We investigated the usefulness and efficacy of tele-rehabilitation with a Virtual Autonomous Physiotherapist Agent (VAPA) compared to standard treatment on exercise capacity and QoL in patients with IPF. A randomized study, including stable patients with IPF for 3 months of TR: video and chat-consultations with a physiotherapist and workout sessions with VAPA. 6-minute-walk-test (6MWT), forced vital capacity (FVC), diffusion capacity of the lung for carbon monoxide (DLCO), 7-days-pedometry, Saint-George- Respiratory-Questionnaire for interstitial lung disease (SGRQ-I), The King's-Brief-Interstitial-Lung-Disease-Questionnaire (KBILD) and General-Anxiety-Disorder-7-Questionnaire (GAD7) were tested before and after 3 months of TR, and after 3 and 6 months follow-up. Patient satisfaction and adherence were also measured for TR with VAPA. Twenty-nine patients aged 70.9±8.6 years, male 72.4%, FVC% 83.5±17.7, DLCO% 50.6±13.0, 6MWT 468.4±14.8 were included. Fifteen patients were randomized to tele-rehabilitation with VAPA and fourteen patients to the control group. Three patients were not medicated and excluded. Differences in 6MWTD distance between groups was at baseline (+48.35m (p=0.11)), after 3 (+96.45m (p=0.01)), 6 (+104.96 m (p=0.01)) and 9 months (+115.26 m (p=0.03)) follow-up (Figure1). No difference was observed in pedometry and QoL. Adherence was above 63%. Patient satisfaction was high. Tele-rehabilitation with VAPA is useful for IPF, exercise capacity was maintained at 3, 6 and 9 months follow up while remarkable decrease was shown in the control group. No change in QoL.

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***Corresponding authors:** J Cerdan-de-las-Heras, F Balbino, Email: frank.gieseler@uksh.de

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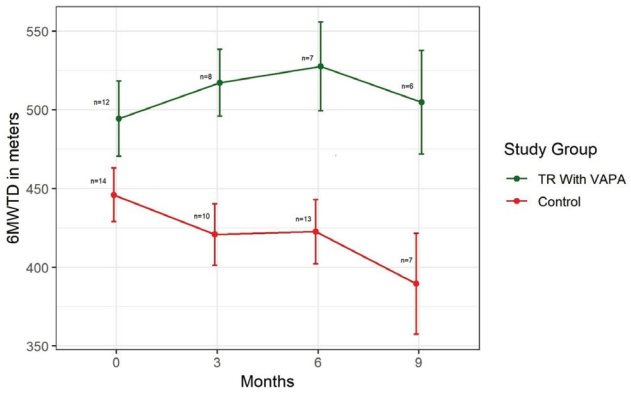

EXERCISE CAPACITY (6MWT DISTANCE)	
Baseline	+48.35 m (P= 0.11)
3 month	+96.45 m (P= **0.01**)
6 month	+104.96 m (P= **0.01**)
9 month	+115.26 m (P= **0.03**)

Figure 1: 6MWT Distance in meters, mean, std error and differences between groups at baseline, 3, 6, and 9 months follow up.