The next steps of pulmonary rehabilitation

S98 EFFECTIVENESS OF HOME MAINTENANCE TELE-REHABILITATION ON COPD EXACERBATIONS

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Acute exacerbations are cardinal events in the natural history of chronic obstructive pulmonary disease (COPD) and are associated with increased morbidity and mortality. Tele-monitoring interventions are a relatively new field in COPD research and management. Furthermore, the effect of home tele-rehabilitation on COPD exacerbation has not been thoroughly studied. Therefore, we set out to investigate whether a home tele-rehabilitation program would be as beneficial as an outpatient maintenance rehabilitation program, in the context of COPD exacerbations, following completion of a 3-month course of supervised pulmonary rehabilitation.

We studied 137 Caucasian, ambulatory COPD patients. Forty seven patients were assigned to home maintenance tele-rehabilitation (FEV_1,%pred = 50 ± 22, mean±SD). Fifty patients were assigned to twice weekly hospital-based maintenance rehabilitation (FEV_1,%pred = 52 ± 17). Forty COPD patients (FEV_1, % pred = 52 ± 21), were not assigned to any rehabilitation program and served as controls. Tele-rehabilitation included home exercise reconditioning, self-management techniques, dietary, and psychological advice. Patients were provided with tablets and wireless devices to record and transmit data, related to symptoms, lung function, and vital signs, to a tele-health platform. Patients were followed up for 12 months.

At baseline there were no significant differences amongst the tele-rehabilitation (3.3 ± 3.1), hospital-based rehabilitation (3.4 ± 1.9), or control (3.3 ± 1.6), groups in terms of COPD exacerbations. After 12 months, COPD exacerbations in the group of home tele-rehabilitation were significantly reduced to 1.7 ± 1.7. In the group of hospital-based rehabilitation COPD exacerbations were also significantly reduced to 1.8 ± 1.4. In contrast, in the control group COPD exacerbations remained unchanged (3.5 ± 1.7). There were significant difference amongst the two rehabilitation groups (tele-rehabilitation and hospital-based) and the control group in terms of COPD exacerbations ($p < 0.001$).

In conclusion, ongoing home tele-rehabilitation with the use of tele-monitoring could significantly reduce COPD exacerbations and seems to be as beneficial as an outpatient hospital-based maintenance rehabilitation program in the context of COPD exacerbations. Thus, tele-rehabilitation may constitute a satisfactory alternative rehabilitative strategy to diminish health care costs.

S99 PULMONARY REHABILITATION IN INTERSTITIAL LUNG DISEASE – A PROSPECTIVE, OBSERVATIONAL STUDY

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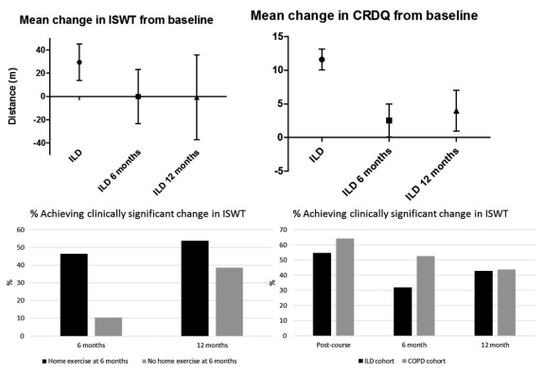
Background Pulmonary rehabilitation (PR) is important in the management of interstitial lung disease (ILD), however it remains unclear how sustained the initial benefits in exercise capacity and quality of life are in this group of patients. An increasing number of ILD patients are participating in PR courses and it is vital that they be offered the most beneficial approach possible.

Methods We have analysed prospectively gathered data from a well characterised population of ILD participants with >24 months follow-up, from a well-established PR service. Participants completed incremental shuttle walk (ISWT) and chronic respiratory disease questionnaire (CRDQ) before PR, at course completion, 6 months and 12 months follow-up. These data were compared to establish changes over time compared to baseline. The ILD cohort was compared to a further group with chronic obstructive pulmonary disease (COPD). Semi-structured interviews were conducted with ILD participants to establish qualitative views on existing and possible future PR provision.

Results Data were available for 79 participants with ILD. PR gave initial improvements in ISWT (29.5 m (95% CI 13.7 to 45.2 m)) and CRDQ (11.6 (95% CI 8.5 to 14.7)), however these benefits were not sustained at 6 months (ISWT change 0.0 m (95% CI -23.2 to 23.2 m), CRDQ change 2.5 (95% CI -2.4 to 7.4)) and 12 months (ISWT change -0.7 m (95% CI -37.3 to 35.9 m), CRDQ change 4.0 (95% CI -2.2 to 10.2)). In contrast, the COPD group demonstrated more durable benefit in exercise capacity (ISWT change at 6 months 35.7 m, 95% CI 10.76 to 60.68, $p < 0.01$). A greater proportion of those who had continued with home exercise maintained an increase in walking distance above the MCID than those who had not (46.4% vs 10.5%, $p = 0.01$).

Interview responses highlighted the value attached to PR by participants with ILD, but also suggested that this could be improved by increased course duration, ongoing supervised exercise following course completion and greater tailoring of content to those with ILD.



Abstract S99 Figure 1