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Title: Home-based pulmonary rehabilitation program following a severe exacerbation of COPD

Roser 16491 Coll-Fernandez rcoll@tauli.cat MD ¹, Josune 16492 Ormaza rcoll@tauli.cat MD ², Montserrat 16493 Baré rcoll@tauli.cat MD ³, Francisco 16494 Epelde rcoll@tauli.cat MD ⁴, Natalia 16495 Martínez nmartinezl@tauli.cat ², Silvia 16507 Pozo rcoll@tauli.cat ¹, Fernanda 16509 Caballero FCaballeroG@tauli.cat MD ¹ and Eduard 16842 Monsó emonso@tauli.cat MD ². ¹ Physical Medicine and Rehabilitation, Corporació Sanitària Parc Taulí, Sabadell, Spain ; ² Respiratory, Corporació Sanitària Parc Taulí, Sabadell, Spain ; ³ Primary Care, Institut Català de la Salut, Barcelona, Spain and ⁴ Emergency, Corporació Sanitària Parc Taulí, Sabadell, Spain .

Body: Introduction: Pulmonary rehabilitation (PR) is an effective intervention for patients with chronic obstructive pulmonary disease (COPD) and is recommended by clinical guidelines. Timing of referral for rehabilitation, immediately after exacerbation to later on while the patient is in a stable state, however, is open to debate. Objectives: To evaluate the effects of a two-month, home-based PR program on dyspnea, exercise capacity, muscle strength and activities of daily living in COPD after a severe exacerbation. Methods: COPD patients who had just undergone in-hospital treatment for a severe exacerbation were enrolled on to a multidisciplinary home PR within 48-72 hours of discharge. The program consisted of twice-weekly sessions for a period of 8 weeks. Lung function, oxygen saturation, exercise capacity (six-minute walk distance test), quadriceps strength, Bode index and London Scale Scoring were recorded at hospital discharge and after 2 months. Follow-up and baseline measurements were compared to determine the change in the measured variables after the program (paired t test). Results: 10 patients underwent the program (mean [SD] age 71.90 [7.1] years, baseline FEV1 after bronchodilator 42.7[11] % predicted). Significant improvements were attained after the program in exercise capacity (pre 280m and postprogram 354m p<0.05), oxygen saturation (pre 91.4 %, and postprogram 94.4% p<0.001) and London Scale Scoring (pre 22.1 and postprogram 14.9 p<0.001). No statistically significant improvements in lung function, BODE index and quadriceps strength were observed. Conclusions: post-exacerbation PR improve exercise capacity tolerance in COPD patients with a significant impact on activities of daily living.