HRmax%predicted was below 85% in all participants. No adverse event was registered.
Conclusions: Cardiofitness room, senior gymnastics, and aquatic gymnastics seem safe and of moderate intensity for people with COPD. Enrolment of people with COPD on these community-based PAs, following PR, should be advised, as these may facilitate the long-term maintenance of PR benefits, while promoting a more physically active lifestyle in this population. Nevertheless, caution is needed when interpreting these results, since intensity of PA is highly influenced by individual factors and patients' enrolment must be preceded by a careful patient selection to ensure their safety.

Keywords: *Physical activity. Maintenance. Pulmonary rehabilitation. Chronic obstructive pulmonary disease. Community.*

CO 063. UNRAVELLING THE RELATIONSHIP BETWEEN FUNCTIONAL CAPACITY AND PHYSICAL ACTIVITY IN PEOPLE WITH INTERSTITIAL LUNG DISEASE

A.S. Brites Grave, C. Paixão, P.G. Ferreira, M.A. Mendes, A. Mesquita Montes, A. Marques

Respiratory Research and Rehabilitation Laboratory (Lab3R), School of Health Sciences (ESSUA), University of Aveiro. iBiMED-Institute of Biomedicine, University of Aveiro.

Functional capacity (FC) and functional performance are distinct domains of functional status. Low functional capacity (FC) is commonly reported in people with interstitial lung disease (ILD). However, the literature on functional performance - possible to be objectively measured quantifying the physical activity (PA) levels - and on the relationship between FC and PA of this population is still scarce. Thus, this study aimed to: i) characterise the PA levels; ii) explore the relationship between FC and PA; and, iii) determine the distribution across the four quadrants of FC and PA of people with ILD. A retrospective cross-sectional study was conducted. PA levels were assessed with accelerometry (Actigraph® GT3X+), through steps/day and time spent in moderate-to-vigorous (MVPA) PA. Participants wore the Actigraph® for, at least, 4 consecutive days (7:00am-10:00pm). FC was assessed with the number of repetitions performed in the 1-minute-sit-to-stand (1-minSTS). PA levels were compared between three ILD diagnostic categories (i.e., fibrotic Hypersensitivity Pneumonitis [fHP], Idiopathic Pulmonary Fibrosis [IPF] and Connective Tissue Disease-related ILD [CTD-ILD]) and severity, using the ILD-GAP Index model (0-3, ≥ 4). U Mann-Whitney and Kruskal-Wallis tests were used to compare groups. Spearman's Correlation was used to analyse the correlation between FC and PA. For the quadrants analysis, participants were divided into the following: 1) low FC (1-minSTS < 70% predicted) and low PA (< 5,000 steps/day or < 150 min/week of MVPA) - "can't do, don't do"; 2) preserved FC (1-minSTS ≥ 70%), low PA (< 5,000 steps/day/< 150 min/week of MVPA) - "can do, don't do"; 3) low FC (1-minSTS < 70% predicted), preserved PA (≥ 5,000 steps/day/ ≥ 150 min/week of MVPA) - "can't do, do do"; 4) preserved FC (1-minSTS ≥ 70%), preserved PA (≥ 5,000 steps/day/ ≥ 150 min/week of MVPA) - "can do, do do". Forty-nine volunteers were included (68 [63-76] years; 23 [46.9%] male, FVC 84 [69-95]% predicted; DLCO 57 [40-73]% predicted). PA levels ranged between 792-113,670 steps/day and 2-1,604 min. spent in MVPA. PA levels across ILD subtype were not different (p = 0.061-0.609) however, significant differences were found across disease severity (GAP0-3 = 41 GAP ≥ 4 = 8 steps/day p = 0.003, GAP0-3 = 41 GAP ≥ 4 = 8 MVPA p = 0.015). Significant, moderate and positive correlations were found between FC and PA for both, steps/day (rs = 0.53, p < 0.001) and MVPA (rs = 0.40, p = 0.005). Participants' distribution on the FC and PA (steps/day) quadrants was: 22 (45%) "can't do, don't do"; 7 (14%) "can do, don't do"; 7 (14%) "can't do, do do"; 13 (27%) "can do, do do". Participants' distribution between FC and PA (MVPA) quadrants was: 20 (41%) "can't do, don't do"; 5 (10%) "can do, don't do"; 9 (18%) "can't do, do do"; 15 (31%) "can do, do do". People with ILD tend to be physically inactive. PA levels decrease with ILD severity and there is a relationship between FC and PA in this population. Applicability of the FC-PA quadrant may guide personalised interventions to optimise outcomes of these meaningful domains in ILD.

Keywords: *Interstitial lung disease. Physical activity. Functional capacity.*

CO 064. ARE PEOPLE WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE MORE MOTIVATED TO EXERCISE AND BE PHYSICALLY ACTIVE AFTER PULMONARY REHABILITATION?

E.S. Santos, P. Rebelo, C. Freitas, J. Cravo, M.A. Mendes, I. Moreira, A. Marques

Lab3R-Respiratory Research and Rehabilitation Laboratory, School of Health Sciences (ESSUA), University of Aveiro. Institute of Biomedicine (iBiMED), University of Aveiro,.

Physical activity is highly important for the health status of people with chronic obstructive pulmonary disease (COPD) because it has shown associations with reduced risk of all-cause mortality and acute exacerbations. Pulmonary rehabilitation improves functional capacity in people with COPD, but benefits have not been consistently observed in physical activity levels. Recently, it has been shown that motivation to exercise can be a precursor to the adaptation of more active lifestyles however, it is unknown whether pulmonary rehabilitation influences the motivation to exercise of people with COPD and whether this motivation contributes to increase physical activity. Therefore, this study aimed to explore i) motivation to exercise; ii) the relationship between motivation to exercise and physical activity and iii) the distribution across the four quadrants of motivation to exercise and physical activity, in people with COPD after pulmonary rehabilitation. An observational cohort study including people with COPD who undertook a 12-week community-based pulmonary rehabilitation program was conducted. Motivation to exercise was assessed with the global rating of change scale at the end of pulmonary rehabilitation. Global rating of change scale consists in a Likert scale composed by 11 points, ranging from -5 to 5 (-5, means "much worse"; 0, means "unchanged"; 5, means "much better"). Participants who scored 2 points or more were considered "motivated to exercise" (ME). Physical activity levels were evaluated pre- and post-pulmonary rehabilitation through accelerometry data (participants wore an Actigraph during seven days, 24 hours). A minimum of 8h (480 min) per day for four days was established for wear time validation. The minimal clinically important difference of 600 steps per day was used to identify "improvers on physical activity" (IPA). Spearman's (rs) correlation coefficient was used to determine the association between motivation to exercise and change in physical activity. We categorized participants in four motivation to exercise-physical activity quadrants: ME and IPA, ME and non-IPA, non-ME and IPA, non-ME and non-IPA, after pulmonary rehabilitation. Forty-one people with COPD (71 ± 7 years; 93% male; BMI 28 ± 6 kg/m^2; 57 ± 17 FEV1%predicted) were included. After pulmonary rehabilitation, most participants were ME (n = 35; 85%), but less than half were IPA (n = 18; 44%). No correlation between these two variables (rs = 0.132, p = 0.412) was observed. Participants distribution on the motivation to exercise-physical activity quadrants was: 15 (37%) "ME and IPA"; 20 (49%) "ME and non-IPA"; 3 (7%) "non-ME and IPA" and 3 (7%) "non-ME and non-IPA". After pulmonary rehabilitation, most participants were motivated to exercise but nearly half did not change the physical activity levels. Changing physical activity behavior is highly challenging, and research on which interventions can effectively modify it is still needed. Additionally, future studies including a more comprehensive assessment of motivation to exercise are required to confirm our results.

Keywords: *Physical activity. Exercise. Motivation. Pulmonary rehabilitation. Chronic obstructive pulmonary disease.*

CO 065. THE ROLE OF MUC5B PROMOTER VARIANT IN FIBROTIC HYPERSENSITIVITY PNEUMONITIS

C. Gouveia Cardoso, C.D. Vasconcelos, A.C. Ferreira, R. F. Santos, N. Melo, A. Terras Alexandre, J.M. Pereira, A. Carvalho, S. Guimarães, C. Souto Moura, J. Agostinho Marques, A. Morais, M.L. Soares, H. Novais-Bastos, P. Caetano Mota

Centro Hospitalar e Universitário de São João.

Introduction: The MUC5B promoter variant rs35705950 is the common genetic variant that confers the greatest risk for idiopathic pulmonary fibrosis (IPF). As IPF and fibrotic hypersensitivity pneumonitis (fHP) present phenotypic resemblances we aim to analyse the role of this MUC5B single nucleotide polymorphism (SNP) in susceptibility and prognosis of fHP.
Methods: A retrospective study was undertaken using 64 IPF patients, 67 fHP patients and 74 controls. Genotype frequencies of the MUC5B rs35705950 SNP in the three groups were analysed. The χ^2 test or Fisher exact test were used to assess genotype differences between groups and logistic regression to analyse association with disease susceptibility. Survival was analysed with time (in months) from diagnosis to dead censored by the end of follow-up. Survival was determined by Kaplan Meier curves and compared by log rank test.
Results: The MUC5B rs35705950 GT and TT genotypes were more frequently in IPF and fHP subjects than in healthy controls (GT: 59.4% *versus* 54.5 *versus* 17.6%, TT: 15.6 *versus* 10.6% *versus* 2.7%; $p < 0.001$). However, when comparing MUC5B rs35705950 GT and TT genotypes between IPF and fHP subjects no significant differences were noticed ($p = 0.405$). The odds ratios (OR) for IPF among subjects with MUC5B rs35705950 GT and TT genotypes were 10.78 (95% confidence interval [CI], 4.66-24.91, $p < 0.001$) and 18.44 (95%CI, 3.67-92.76, $p < 0.001$), respectively. The OR for fHP among subjects with MUC5B rs35705950 GT and TT genotypes were 7.10 (95%CI, 3.20-15.75, $p < 0.001$) and 8.98 (95%CI, 1.74-46.45, $p = 0.009$), respectively. The median follow-up time was 43.5 (IQR 28.0-67.5) months in IPF subjects and 25.0 (IQR 18.0-59.5) months in fHP subjects ($p = 0.025$). Thirty-six IPF subjects (56.3%) and 23 fHP subjects (34.3%) died during the follow-up ($p = 0.012$). Survival analysis did not show any association between the different MUC5B rs35705950 genotypes with IPF ($p = 0.275$) or fHP ($p = 0.846$). Regarding fHP, no association was found between UIP pattern ($p = 0.803$) or honeycombing on high-resolution computed tomography ($p = 0.317$) and survival.
Conclusions: No significant differences were found in genotypic distributions of the MUC5B rs35705950 SNP between IPF and fHP group. As described for IPF, the genotypes that contain T allele of SNP MUC5B rs35705950 are associated with fHP susceptibility, suggesting potential similarities in the fibrotic pathogenic mechanisms underlying both diseases. The individual analysis of genotype distributions for the MUC5B promoter SNP rs35705950 did not unravel a role of genetics in prognostic stratification of fHP.

Keywords: *IPF. Fibrotic HP. Genetics. MUC5B. Diagnosis. Survival.*

CO 066. INCLUSION CRITERIA FOR PRESCRIBING ANTIFIBROTICS IN PROGRESSIVE FIBROTIC INTERSTITIAL LUNG DISEASE AND THEIR IMPACT ON OUTCOME- A RETROSPECTIVE ANALYSIS

D. Noivo Gomes, M. Mestre, A. Terras Alexandre, N. Melo, H. Novais Bastos, P. Mota, A. Morais

Hospital São Bernardo, Setúbal.

Introduction: The INBUILD study showed a decrease in forced vital capacity (FVC) decline in patients on Nintedanib with progressive fibrotic interstitial lung disease (PF-ILD). The defined inclusion criteria encompassed clinical (symptomatic worsening), functional (decrease in FVC) and radiological parameters (greater extent of fibrosis). This study aims to evaluate the inclusion criteria considered and their influence on the evolution of patients.
Methods: Retrospective analysis of patients with PF-ILD (idiopathic pulmonary fibrosis excluded) under antifibrotic treatment at the ILD consultation at Centro Hospitalar de São João, Porto.
Results: Sixty-seven patients were identified with a mean age of 69.91 years, 53.7% (n = 36) of whom were women. Hypersensitivity pneumonitis was the most common ILD (68.7%), followed by connective tissue disease-related ILD (CTD-ILD) (20.9%). In these, rheumatoid arthritis (42.9%; n = 6) and systemic sclerosis (42.9%; n = 6) were the most common. The radiological pattern of usual interstitial pneumonia was found in 35 patients (53%). Most patients were on immunosuppressive therapy when the antifibrotic was started, the most common being mycophenolate mofetil in 67.2% (n = 45). Most patients were on nintedanib (85.1%, n = 57) and the rest on Pirfenidone. The criteria used to initiate the antifibrotic, as defined in the INBUILD study, were clinical and radiological progression (CRP) in 38.8% (n = 26), clinical or radiological progression, and decrease in FVC of 5-10% (C/FRVC) in 25.4% (n = 17) and a drop in FVC > 10% (FVC10) in 35.8% (n = 24), in a period of 2 years. After initiation of antifibrotic therapy, the PCR group presented an average decrease in FVC of 7.11% (0.30L) at 6 months and 7.60% (0.20L) at 12 months, while for the C/RFVC group, the decrease was 4.54% (0.09L) at 6 months and 5.83% (0.15L) at 12 months. The FVC10 group had a functional improvement of 1.30% (0.04L) and 1.7% (0.06L) at 12 months. There was no statistically significant difference between the fall in FVC in these groups at 6 months ($p = 0.127$) and at 12 months ($p = 0.492$). However, comparing the FVC10 group with the others, a smaller decline in FVC at 6 months is evident ($p = 0.06$).
Conclusions: In the analysis of subgroups of the INBUILD trial, the inclusion criteria FVC10 study showed a greater prevention in the fall of the absolute value of FVC. The real-life results obtained in this study are in line with the evidence previously demonstrated, highlighting the importance of functional decline in the selection of patients who benefit most from antifibrotic agents.

Keywords: *PF-ILD. Progressive fibrosis. Inbuild. Nintedanib.*

CO 067. IMPACT OF AZATHIOPRINE USE FOR 5 YEARS IN PATIENTS WITH HYPERSENSITIVITY PNEUMONITIS, ONE CENTER EXPERIENCE

D. Pimenta, A. Morais, A. Terras Alexandre, S. Raimundo, N. Melo, P. Mota, H. Novais

Hospital de Braga.

Introduction: Hypersensitivity pneumonitis (HP) is a heterogeneous disease characterized by an inflammatory reaction to exposure to a sensitizing antigen. Azathioprine (AZA) is a cell cycle inhibitor used in the treatment of many inflammatory interstitial lung diseases, notably fibrotic HP (fHP), although it has not been prospectively tested in randomized controlled trials. Recently, results have been published on its efficacy at 12 and 24 months, with no data beyond this period.
Objectives: To evaluate the evolution of lung function and the safety profile of the drug in patients diagnosed with fHP undergoing treatment with AZA for 5 years.
Methods: This cohort included patients diagnosed with fHP who had completed 5 years of treatment with AZA. The diagnosis of patients was based on the rules in force. The characterization of the sample was based on demographic data, smoking, lymphocyte count in BAL. The biannual reassessments throughout the treatment were based on FVC, TLC, DLCO, gait test and paO2. Data were analyzed using the SPSS platform, with the Wilcoxon test and t test.
Results: From a cohort of 46 patients, stabilization criteria were found in 78% (n = 36) of patients after 1 year and in 76% (n = 35)