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Background: Individuals on hemodialysis have systemic complications due to chronic kidney disease and dialysis treatment. Then, impairments in physical function are frequent in this population, which contributes to a higher risk of falls.

Objectives: This study aimed to investigate the ability of physical function tests to discriminate individuals on hemodialysis with and without risk of falls.

Methods: A 12-month prospective study was conducted with individuals on regular hemodialysis. Physical function was assessed by handgrip strength, gait speed over 15 feet, the 5-repetition sit-to-stand test, and the Timed Up and Go test. Following the initial assessment, the falls were monitored monthly for 12 months. A fall was defined as an unexpected event in which the individual came to rest on the ground, floor, or lower level. The Receiver Operating Characteristic curve was used to identify a cutoff point of physical function tests able to discriminate individuals with and without risk of falls, also Area Under Curve was calculated. A p-value of < 0.05 was considered statistically significant.

Results: This study included 112 patients (58.7 ± 12.9 years, 56.3% male). The incidence of falls was 31.3%. Receiver Operating Characteristic curve showed that 5-repetition sit-to-stand test and Timed Up and Go test were significant predictors of risk of falls and the Area Under Curve and cutoff point were 0.629 (0.512 - 0.746, $p = 0.040$) and 0.644 (0.528 - 0.760, $p = 0.017$) and 12.6 seconds (sensitivity of 71.0%, specificity of 52.2%) and 8.1 seconds (sensitivity of 64.7%, specificity of 54.9), respectively.

Conclusion: Physical function tests were able to discriminate individuals on hemodialysis with and without risk of falls.

Implications: Cutoff points identified for physical function tests can be used to screen individuals on hemodialysis with and without risk of falls and to guide fall prevention programs.

Keywords: Renal Dialysis, Accidental falls, Risk

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IMPACTS OF NICOTINE DEPENDENCE ON SLEEP AND PHYSICAL ACTIVITY IN ELDERLY SMOKERS: PRELIMINARY RESULTS

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Background: Studies indicate that smokers tend to have lower levels of physical activity, associated with higher nicotine dependence. Additionally, smoking can compromise sleep quality due to dependence symptoms, favoring the appearance of sleep disorders.

Examining the relationship between nicotine dependence, sleep quality, and physical activity levels in elderly smokers can help develop interventions to minimize the impacts of smoking on the functionality and quality of life of this population.

Objectives: To investigate the relationship between nicotine dependence, physical activity levels, sleep quality, and daytime sleepiness in elderly smokers.

Methods: This is a cross-sectional study conducted with elderly smokers of conventional cigarettes who had been smoking for at least one year, of both sexes aged 60 years or older, capable of understanding the assessment instruments. Anthropometric measurements and information on smoking habits were collected, and participants were evaluated for nicotine dependence using the Fagerström Test, physical activity levels using the short version of the IPAQ, sleep quality using the Pittsburgh Sleep Quality Index (PSQI), and daytime sleepiness using the Epworth Sleepiness Scale (ESE). Statistical analysis was performed using Jamovi 2.6.26 software, utilizing Spearman's correlation to analyze the relationships between variables, with a significance level of $p < 0.05$.

Results: Nine individuals (55.6% female 66.0 ± 4.8 years), participated in the study. Regarding nicotine dependence, 66.7% of participants were classified as mildly dependent, and 33.3% as moderately dependent. In terms of physical activity levels, 55.6% were classified as very active. Sleep quality was considered poor for 66.7% of participants according to the PSQI, and 44.4% presented mild to moderate daytime sleepiness according to the ESE. Spearman's analysis indicated a positive correlation between nicotine dependence and daytime sleepiness ($Rho = 0.759$, $p = 0.018$), suggesting that higher levels of nicotine dependence are related to greater daytime sleepiness and possibly a higher risk of sleep disorders. No significant correlation was found between nicotine dependence, physical activity levels, and sleep quality, which may be related to the small sample size, limiting the detection of associations between these variables.

Conclusion: Elderly smokers with higher nicotine dependence showed higher levels of daytime sleepiness, highlighting the impacts of smoking on sleep quality. Although no correlation was identified with physical activity levels, previous studies indicate that more dependent smokers tend to exercise less, which may potentiate the deleterious effects of smoking on health.

Implications: These findings reinforce the importance of integrated strategies for smoking cessation in the elderly population, also considering interventions that improve sleep quality and encourage physical activity. Reducing morbidity risk and promoting healthier and more functional aging.

Keywords: Tobacco Use Disorder, Exercise, Sleep quality

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ANALYSIS OF THE SEVERITY OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AND ITS ASSOCIATION WITH PROGNOSIS THROUGH THE BODEXS90

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Background: Chronic Obstructive Pulmonary Disease (COPD) should be considered in individuals exposed to harmful agents to lung health, especially in people aged 40 years or older who present chronic signs and symptoms such as cough, dyspnea, fatigue with minimal exertion, and sputum production. Although a reduction in FEV1 is an important indicator, the assessment of the severity and prognosis of COPD requires additional parameters. The BODEXs90 index is a multidimensional tool that evaluates predictive variables for mortality, providing a more comprehensive assessment of the consequences of the disease.

Objectives: To explore the association between COPD severity and prognosis using the BODEXs90 index.

Methods: A cross-sectional study was conducted with patients diagnosed with COPD, confirmed by spirometry with $FEV1/FVC < 0.7$, according to the criteria of the Global Initiative for Chronic Obstructive Lung Disease (GOLD), under follow-up in an outpatient pulmonary service. Patients aged 40 to 90 years, without cognitive or oral communication deficits, and who did not depend on oxygen supplementation, were included. To compose the domains of the prognostic index, the following were evaluated: Body Mass Index (BMI), percentage of FEV1 after bronchodilation spirometry, symptom intensity by the COPD Assessment Test (CAT), degree of dyspnea by the Modified Medical Research Council (mMRC), history of exacerbations, and baseline oxygen saturation (SpO_2). The associations were determined through Pearson chi-square analysis and Fisher's exact test.

Results: The sample consisted of 65 individuals, with an average age of 67.1 ± 8.5 years, with the majority being female (55.4%). The predominant educational level was elementary school (75.4%). More than half of the patients (56.9%) reported exacerbation events. Regarding BMI, 44.6% were of normal weight, 16.9% were underweight, 16.9% were overweight, and 21.5% had some degree of obesity. The average baseline SpO_2 was 94.5 ± 2.8 . Severe FEV1 reduction (GOLD 3) was more prevalent (44.6%). No significant difference was observed between the CAT classification and predominant sex in both sexes [$\chi^2(3) = 2.394$; $p = 0.49$], nor in degree 1 of dyspnea by sex [$\chi^2(4) = 1.381$; $p = 0.85$]. A significant association was observed between COPD severity and prognosis in the BODEXs90 index [$\chi^2(6) = 22.925$; $p = 0.001$], indicating that patients with moderate obstruction were classified in the mild category of BODEXs90 compared to other categories.

Conclusion: The greater the degree of airflow obstruction, the worse the prognosis and the estimated survival at four years, regardless of sex. The use of the BODEXs90 index proved to be effective in assessing the prognosis of COPD patients.

Implications: Personalizing the treatment of COPD patients based on a multidimensional prognostic system such as the BODEXs90 index is important for adjusting therapies and also for supporting the early identification of patients at higher risk of disease progression.

Keywords: Sarcopenia, COPD, Prognosis

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PERIPHERAL OXYGENATION BEHAVIOR IN PEOPLE WITH COPD: PILOT STUDY

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Background: Chronic obstructive pulmonary disease (COPD) is a systemic condition that causes microvascular alterations, interfering with muscle metabolism and leading to reduced oxidative capacity and exercise tolerance limitations.

Objectives: To analyze the peripheral oxygenation behavior of people with COPD.

Methods: This was a cross-sectional, analytical, and quantitative study conducted with 12 individuals with COPD. The participants' peripheral oxygenation behavior was assessed using near-infrared spectroscopy (NIRS), positioned on the medial gastrocnemius muscle, while they performed a treadmill exercise test. The evaluated variables included initial saturation (StO_2 initial), lowest saturation (StO_2 lowest), final saturation (StO_2 final), desaturation time, and desaturation rate. Data analysis was performed using the Statistical Package for Social Science (SPSS), applying the Shapiro-Wilk normality test and a significance level of 5%.

Results: The mean age of female participants was 68.6 ± 23.0 years, and for males, it was 69.3 ± 20.0 years. In men, the values were: StO_2 initial = $53.7 \pm 9.58\%$, StO_2 lowest = $48.3 \pm 10.9\%$, StO_2 final = $53.4 \pm 7.92\%$, desaturation rate = -0.03 ($-0.15 - -0.01$). In women, the values were: StO_2 initial = $58.6 \pm 4.37\%$, StO_2 lowest = $52.2 \pm 4.45\%$, StO_2 final = $54.5 \pm 4.55\%$, desaturation rate = -0.18 ($0.67 - -0.01$).

Conclusion: The peripheral oxygenation behavior observed in this study differs from reference values, showing numerically lower levels. These results may be attributed to the fact that people with COPD often present chronic hypoxemia, reduced muscle perfusion due to endothelial dysfunction, and lower vasodilatory capacity. Despite the low saturation values, the volunteers were able to sustain exercise, as the desaturation rate remained below the reference values for individuals without apparent pathologies.

Implications: These findings encourage further research with a larger sample size to provide a more robust analysis of oxygenation behavior. Even with low saturation, there is resistance to continuing exercise, which may contribute to more tailored treatments for this condition through peripheral exercise.

Keywords: Chronic Obstructive Pulmonary Disease, Near-Infrared Spectroscopy, Peripheral Tolerance

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LEVEL OF PARTICIPATION IN PEOPLE WITH INTERSTITIAL LUNG DISEASE (ILD): PRELIMINARY RESULTS

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