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Title: 6-minute walking test (6MWT) in patients with silicosis

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Body: Objective: To evaluate the performance of patients with chronic silicosis in six-minute walking test (6MWT) and correlate its results with lung function test and radiologic exams. Methods: Study that included all patients diagnosed with silicosis in the Occupational Respiratory Diseases Ambulatory, Heart Institute (Incor-HCFMUSP), between January and December 2011, who had no limitation on the execution of the 6MWT. The subjects performed 6MWT, chest radiography and / or high-resolution computed tomography, and pulmonary function test. We included 67 patients, 98.5% were male. The majority (70%) worked in the fields of foundry, marble quarrying and quarry. Mean age was 55.5 ± 12.7 years, BMI 24.7 ± 3.8 kg/m². Smoking prevalence was 2.9% (n = 2), ex-smokers 64.1% (n = 44) and non-smokers 32.8% (n = 21). Largely, 78%, showed functional abnormalities on spirometry with a greater frequency of obstructive lung disease (n = 32, 49.23%). At the end of 6MWT we observed a significant increase in Borg rating perceived exertion scale (Borg scale) and decrease in SpO₂ $\geq 5\%$ (n = 18, 28%) (p<0,01). We found also a significant correlation between 6MWT variables and FEV₁, FEF_{25-75%} and FEV₁/FVC. The linear regression models confirmed the negative effect of the reduction in FEV₁ and FVC in SpO₂ and Borg scale. The presence of large opacities in radiological exams was not significantly associated with poorer performance on the 6MWT or with worse lung function. Conclusion: In a cross-sectional analysis 6MWT showed greater utility in assessing patients with silicosis, with better correlation with pulmonary function than image changes, moreover, it is useful and inexpensive.