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Title: Determinants of exercise capacity in adult subjects with non-cystic fibrosis bronchiectasis

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Body: Introduction: The cardiopulmonary exercise testing (CPET) and shuttle walking test (SWT) have been used to evaluate exercise tolerance in subjects with non-cystic fibrosis bronchiectasis (nCF-BCt). However, the determinants of aerobic capacity (peak VO2) and distance walked in SWT (DSWT) are still unknown in this population. Objective: To evaluate the determinants of peak VO2 and DSWT in adult subjects with nCF-BCt. Methods: Eighty subjects with BCQ (50 women; 44±14 yrs; FEV1: 52±19% pred; fat-free mass index: 17±2 kg/m²; peak VO2: 63±13% pred; DSWT: 52±13% pred). Spirometry, maximum voluntary isometric contraction of the quadriceps femoris (MVIC-QF), and a shuttle walking test (SWT) were performed. Peak VO2 was obtained from CPET on a cycle ergometer. Dyspnea was measured according to the Medical Research Council (MRC) scale, and daily steps (DS) with a pedometer. Results: For peak VO2, a stepwise regression analysis was conducted with 61 patients. FEV1 expressed as % pred (partial R^2 = 0.46, $p < 0.0001$), BMI (partial R2 = 0.32, $p = 0.013$), and DS (partial R^2 = 0.40, $p = 0.002$) explained 39% of the variance in peak VO2 (% pred). DSWT (% pred, n = 80) was explained (R^2 = 0.57, $p < 0.0001$) by FVC expressed as % pred (partial R^2 = 0.14, $p = 0.001$), MRC (partial R^2 = 0.19, $p < 0.0001$), and gender (partial R^2 = 0.26, $p < 0.0001$). MIVC-QF did not contribute to either model. Conclusion: The determinants of aerobic and functional capacity were related to pulmonary function, dyspnea, nutritional status, gender, and DS.