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**Title:** Clinical determinants of incremental shuttle walk test in bronchiectasis

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**Body:** Aim: The purpose of this study was to investigate the clinical determinants of incremental shuttle walk test (ISWT) in adult patients with bronchiectasis. Methods: Thirty two adult bronchiectasis patients aged 18-72 years (23 females, 9 males) participated in the study. Subjects' demographics and physical characteristics were recorded. Pulmonary function test was performed. MIP and MEP was measured using a mouth pressure device. Dyspnea was assessed using modified Medical Research Council Dyspnea Scale (MMRC). Hand grip strength using a hand held dynamometer and exercise capacity using incremental shuttle walk test (ISWT) were evaluated. Heart rate, modified Borg score for dyspnea and fatigue perception were recorded before and after the ISWT. Quality of life was determined using St George Respiratory Questionnaire (SGRQ). Results: Patients reached 24-79% (mean=53.58±13.36%) of predicted ISWT. The ISWT distance was significantly related with age ( $r=-0.415$   $p=0.018$ ), BMI ( $r=-0.419$   $p=0.019$ ), gender ( $r=0.453$   $p=0.009$ ), FEV<sub>1</sub> ( $r=0.694$   $p=0.000$ ), FVC ( $r=0.518$   $p=0.003$ ), MIP ( $r=0.418$ ,  $p=0.017$ ), MMRC ( $r=-0.452$   $p=0.009$ ), handgrip strength ( $r=0.414$   $p=0.019$ ), maximal heart rate reached during exercise ( $r=0.412$   $p=0.019$ ), and SGRQ total score ( $r=-0.490$ ,  $p=0.004$ ). The FEV<sub>1</sub>, maximal heart rate reached during exercise, and SGRQ total explained 72% of the variance in ISWT distance in patient with bronchiectasis ( $r=0.847$ ,  $r^2=0.718$ ,  $F_{(1-27)}=8.232$ ,  $p=0.08$ ). Conclusion: Multiple regression analysis indicated that level of airway obstruction, maximal heart rate reached during exercise, and SGRQ score were identified as independent predictors of the ISWT, explaining 72% of variance.