Title: Evaluating flutter device and the active cycle of breathing technique in non-cystic bronchiectasis: The prospective randomised study

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Body: Background: Chest physiotherapy is an important part of the routine treatment of patients with bronchiectasis. The aim of present study was investigate the efficacy of two frequently used physiotherapies in bronchiectasis: active cycle of breathing (ACTB) techniques and the Flutter device. Methods: A prospective randomized study was performed in 36 stable patients with non-cystic bronchiectasis at home, in which 4 weeks of daily ACTB (n=17) were compared with the Flutter device (n=19). We compared symptoms, pulmonary function tests, dyspnea scores and Health-Related Quality of Life with two different physiotherapy techniques. Results: We determined cough and weakness was reduced (respectively p=0.000, p=0.004), sputum expectoration was increased (p=0.002), dyspnea score was reduced (for Medical Research Council p=0.001, for Borg Dyspnea Scale p=0.002) and Short Form-36 (SF-36) 'Physical Health' component summaries score was improved partly (p=0.001) with physiotherapy. No significant changes were note FVC, FEV1 or symptoms between the two techniques. We found only significantly general health (p=0.048) and pain feeling (p=0.011) scores in SF-36 with the Flutter. Conclusions: Chest physiotherapy is a effective method increasing sputum expectoration, reducing symptoms and dyspnea score and party improvement Health-Related Quality of Life. ACTB and Flutter techniques are suitable usage at home-based treatment.