



Physical Therapy Discharge Recommendation Based on Personal Factors and Performance on Two-Minute Walk Test in Patients Hospitalized with Chronic Obstructive Pulmonary Disease: A Case Series

CONTROL ID: 2329983

POSTER NUMBER: 1031

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Background & Purpose: Many factors influence a physical therapist's decision for appropriate discharge destination of hospitalized patients. The purpose of this study was to compare the influences of personal factors and physiological factors, measured during the Two-Minute Walk Test (2MWT), on physical therapy discharge recommendations, for patients hospitalized with acute exacerbation of chronic obstructive pulmonary disease (COPD).

Case Description: Seven men (age 75.3 ± 11.0 years), hospitalized with acute exacerbation of COPD, participated in this study and were divided into groups based on discharge recommendation: "Home" or inpatient "Rehab". Aerobic endurance was measured with the 2MWT, and resting heart rate and oxygen saturation levels were assessed with a pulse oximeter. Immediately after completing the 2MWT, post-exercise heart rate and oxygen saturation were assessed while subjective RPE score was provided. Data collected included age, description of home environment, availability of caregiver assistance, prior level of functional mobility and use of supplemental oxygen, distance walked during the 2MWT, change in heart rate and oxygen saturation during the 2MWT, and subjective Borg rate of perceived exertion (RPE). Chi-square and t-tests were used to compare group differences in the independent variables; Pearson correlation (r) tests examined associations between 2MWT and age, exertional vital signs, and Borg RPE. Results were reported as mean (SD), and statistical significance was ($p < 0.05$).

Outcomes: Most participants lived in a single-story house with able-bodied family members. More than half of the patients used an ambulatory assistive device, prior to hospital admission, while few participants used supplemental oxygen at home. Four participants were recommended for discharge home, while the remaining three were recommended for short-term rehabilitation. Subjects discharged home were more likely to have caregiver assistance available at home ($\chi^2 = 3.733$, $p = 0.053$) and less likely to have used an assistive device ($\chi^2 = 3.938$, $p < 0.05$), compared to subjects discharged to rehab. No significant differences between discharge groups were found for self-reported usual gait tolerance, distance walked during the 2MWT, change in physiological factors during the 2MWT, and subjective RPE score. Gait speed did not significantly differ between discharge groups. A strong association existed between 2MWT gait distance and

the change in heart rate during the test ($r=0.841$, $p<0.05$).

Discussion: In patients hospitalized with acute exacerbation of COPD, personal factors appeared more influential than physiological factors during the 2MWT for discharge destination recommendation by acute physical therapists. The discharge destination of the sample did not differ based exclusively upon the physiological factors or distance achieved during the 2MWT, suggesting that walking tolerance during 2MWT cannot be used as a single metric for discharge recommendations.

References: Must include 5 current references (less than 10 years old): 1. Connelly, DM. Thomas, BK. (2009). Clinical utility of the 2-minute walk test for older adults living in long-term care. *Physiotherapy Canada* 61(2): 78-87.2. Cote, CG. Celli, BR. (2005). Pulmonary rehabilitation and the BODE index in COPD. *European Respiratory Journal* 26. 630- 6363. Leung, A. (2006). Reliability, Validity, and Responsiveness of a 2-Min Walk Test To Assess Exercise Capacity of COPD Patients. *Chest*, 119-125.4. Lewis, C., & Shaw, K. (2005). Benefits of the 2-Minute Walk Test. *Advance Healthcare Network: For Physical Therapy and Rehab Medicine*, 16(16), 6-6.5. Smith, BA, Fields, CJ, Fernandez N. (2010). Physical Therapists Make Accurate and Appropriate Discharge Recommendations for Patients Who Are Acutely Ill. *PhysicalTherapy Journal*, 90(5), 693-703.