SIX-MINUTE WALK TEST AND TIMED UP & GO TEST IN PERSONS WITH TRANSFEMORAL AMPUTATIONS

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Introduction

Transfemoral amputation results in permanent disability and impairments among people of all ages. Therefore, the main goals of rehabilitation programs are the improvement of functioning, especially mobility, and successful reintegration in the community. Generally, the effectiveness of these programs is assessed in terms of ability to walk independently, as well as, the maximum functional independence achieved by the subject (2). Walking speed and distance are commonly recorded following lower limb prosthetic fitting, and can be measured by timed walk or fixed distance tests. In several pathologies and age groups, the Six-Minute Walk Test (6MWT) and the Timed Up & Go Test (TUGT), are considered as gold standard measures showing high test-retest reliability. Additionally, good results were found in subjects with transfemoral amputation. Thus, it becomes relevant to explore the reliability of these two tests in other lower-limb amputees, such as transfemoral one’s.

Purpose

(1) To analyze the between two days test-retest reliability of the 6MWT and the TUGT in persons with transfemoral amputation.
(2) To investigate the relationship between the distance of walking in the 6MWT and the time to perform the TUGT.

Methods

Participants performed one trial of 6MWT and two trials of TUGT on two different days (48h), in a test-retest study design. After being instructed to walk along a 30-m indoor corridor, the subjects performed the 6MWT (Figure 1), according to the American Thoracic Society (ATS) guidelines (1). During this test, heart rate was monitored continuously with a Polar F-55 watch. The TUGT was performed according the instructions in Figure 2 (4). In order to minimize the influence of fatigue, it was carried out half an hour later. Each subject performed twice this test with a two minutes rest time between trials. On the second day, the tests were performed in the same order and time.

Results

Between days comparisons of the 6MWT and the TUGT showed better values in second day (Table 2). The ICC test-retest of the 6MWT and the TUGT (Figure 3) showed high reliability. High correlations were observed between 6MWT and TUGT (Figure 4).

Discussion

Strong and negative correlations were observed between 6MWT and TUGT test. A moderate degree of negative linear correlation was reported on transtibial population (r=-.76) (3). All these results suggest that subjects who walked a longer distance in 6MWT performed the TUG test in less time.

Conclusions

The results showed high test-retest reliability between days, both for the 6MWT and the TUGT. Subjects that walked longer distance in 6MWT performed the TUGT in less time.

Recommendations

The 6MWT might be considered as a reliable instrument to measure functional capacity in persons with transfemoral amputation. The TUGT should be used for assessment of physical mobility, postural control, set of transfers, level walking, and turns in amputees.

References


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