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Title: Within-day test-retest reliability of the timed "up & go" test in patients with advanced chronic organ failure

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Body: Background: The Timed "Up & Go" test (TUG) has been scarcely used in patients with advanced chronic organ failure, such as Chronic Obstructive Pulmonary Disease (COPD), Chronic Heart Failure (CHF), or Chronic Renal Failure (CRF). Before its recommendation in clinical practice, the reliability of this test needs to be determined in these populations. We aimed to investigate the within-day test-retest reliability of the TUG in patients with advanced COPD, CHF, and CRF. Methods: 235 subjects (64% men, age 70[61-77]years; BMI 26[23-29]kg•m⁻²) with advanced COPD (n=95), CHF (n=68), or CRF (n=72) were evaluated. The time to complete the TUG was assessed in three trials performed on the same day. The Intraclass Correlation Coefficient (ICC), κ coefficient, Standard Error of Measurement (SEM), and absolute and relative Minimal Detectable Change (MDC) values were calculated. Results: Good agreement was observed for both the total sample and subgroups (ICCs from 0.85 to 0.98, and κ coefficients from 0.49 to 1.00). However, statistical improvement occurred in the total sample from the 1st to the 2nd trial with large limits of agreement (mean difference [95% CI] -0.97[+3.00 to -4.94] s, p<0.05). The 3rd trial added little or no information to the first two trials. For the total sample, values of SEM around 1.6 s, MDC_{95%} around 4.5 s, and MDC_{95%}% around 35% were found between the first two trials, with close values found for the subgroups. Conclusions: The TUG is reliable in patients with advanced COPD, CHF, or CRF after two trials. Values of SEM and MDC were established and can be used in clinical practice to define what is expected and what represents true change in repeated measures.