

VALIDATION OF THE TRIPLE TIMED UP-AND-GO TEST FOR CLINICAL ASSESSMENT IN LAMBERTEATON MYASTHENIA PATIENTS

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INTRODUCTION: There are no validated, practical, and quantitative measures of disease severity in Lambert–Eaton myasthenic syndrome (LEMS).

OBJECTIVE: To validate the Triple Timed Up-and-Go Test (3TUG) as a measure of disease severity in LEMS patients. **METHODS:** Data from the DAPPER trial were analyzed to assess 3TUG reproducibility and relationships between 3TUG times and other measures of LEMS severity.

RESULTS: For an acceptable difference $\leq 20\%$, the coverage probability was 0.93 (95% CI: 0.82-0.99) between repeated time-matched 3TUGs recorded from the same subject by the same observer, and 1.00 (95% CI: 0.92-1.00) between 3TUGs recorded by 2 independent observers. Correlation between 3TUG times and total Lower Extremity Function Scale scores was significant in subjects who continued 3,4-diaminopyridine (3,4-DAP) free base (-0.64 , $p=0.02$) and in those who discontinued 3,4-DAP (-0.64 , $p=0.01$). Worsening of ≥ 3 points on the Weakness Self-Assessment Scale corresponded with a $\geq 74\%$ prolongation of 3TUG time (i.e., worsening). An investigator assessment of “much worse” corresponded with a 94% increased 3TUG time. Linear regression of compound muscle action potentials (CMAPs) and 3TUGs showed a trend of lower CMAPs with increasing 3TUG time in subjects who discontinued 3,4-DAP. Correlation between 3TUG time and LEMS and activities of daily living score after withdrawal (0.17) was not significant ($p=0.50$); there was a significant negative correlation (-0.69 , $p=0.01$) in subjects who continued 3,4- DAP.

SUMMARY/CONCLUSION: The 3TUG is reproducible, demonstrates construct validity, and correlates with changes in specific patient and physician assessments of disease severity. Together with the previously demonstrated reliability, these findings indicate the 3TUG is a valid measure of disease severity in LEMS patients.

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Best Abstract Award Recipient-Runner Up