

RESEARCH ARTICLE

Manual muscle testing and hand-held dynamometry in people with inflammatory myopathy: An intra- and interrater reliability and validity study

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Abbreviations: IM, inflammatory myopathy; DM, dermatomyositis; PM, polymyositis; MMT, manual muscle testing; MMT8, short version of the of the

Abstract

Manual muscle testing (MMT) and hand-held dynamometry (HHD) are commonly used in people with inflammatory myopathy (IM), but their clinimetric properties have not yet been sufficiently studied. To evaluate the reliability and validity of MMT and HHD, maximum isometric strength was measured in eight muscle groups across three measurement events. To evaluate reliability of HHD, intra-class correlation coefficients (ICC), the standard error of measurements (SEM) and smallest detectable changes (SDC) were calculated. To measure reliability of MMT linear Cohen's Kappa was computed for single muscle groups and ICC for total score. Additionally, correlations between MMT8 and HHD were evaluated with Spearman Correlation Coefficients. Fifty people with myositis (56±14 years, 76% female) were included in the study. Intra- and interrater reliability of HHD yielded excellent ICCs (0.75–0.97) for all muscle groups, except for interrater reliability of ankle extension (0.61). The corresponding SEMs% ranged from 8 to 28% and the SDCs% from 23 to 65%. MMT8 total score revealed excellent intra- and interrater reliability (ICC>0.9). Intrarater reliability of single muscle groups was substantial for shoulder and hip abduction, elbow and neck flexion, and hip extension (0.64–0.69); moderate for wrist (0.53) and knee extension (0.49) and fair for ankle extension (0.35). Interrater reliability was moderate for neck flexion (0.54) and hip abduction (0.44); fair for shoulder abduction, elbow flexion, wrist and ankle extension (0.20–0.33); and slight for knee extension (0.08). Correlations between the two tests were low for wrist, knee, ankle, and hip extension; moderate for elbow flexion, neck flexion and hip abduction; and good for shoulder abduction. In conclusion, the MMT8 total score is a reliable assessment to consider general muscle weakness in people with myositis but not for

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Physical Medicine and Rehabilitation Joel A. DeLisa, Bruce M. Gans, Nicholas E. Walsh, 2005 The gold standard physical medicine and rehabilitation text is now in its Fourth Edition with thoroughly updated content and a more clinical focus More than 150 expert contributors most of them new to this edition address the full range of issues in contemporary physical medicine and rehabilitation and present state of the art patient management strategies emphasizing evidence based recommendations This edition has two separate volumes on Physical Medicine and Rehabilitation Medicine Each volume has sections on principles of evaluation and management management methods major problems and specific disorders Treatment algorithms and boxed lists of key clinical facts have been added to many chapters

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