Fisioterapia, Volume 37, Issue 4, July–August 2015, Pages 155-164.

Estudio transversal de fiabilidad y concordancia de una nuevo dispositivo para la evañuación de torsión y tolerancia a la fatiga en flexo extensores cervicales de voluntarios sedentarios asintomáticos.

Paul Medina, Patricio Araneda y Maximo Escobar.

Abstract

A cross-sectional study of reliability and agreement of a new device for the evaluation of cervical flexor-extensor muscles torque and endurance in sedentary life asymptomatic volunteers

Objective: To determine the reliability and agreement of a method to evaluate maximum voluntary isometric torque (MVIT) and muscle fatigue local tolerance (MFLT) measurement in the cervical flexor-extensor muscles of sedentary life style asymptomatic volunteers.

Material and method: For this observational cross-sectional study, 42 subjects (15 women and 27 men), who were asymptomatic, with sedentary life style, and with no background of cervical pathology were assessed with the cervical muscle testing dynamometer system. The MVIT (Newton-meters; Nm) was recorded with three measurements for each muscle group (n = 42). Twenty-four hours later, MFLT (seconds) was measured twice at 60 ± 2.5% of MVIT with two measurements for the cervical flexor and extensor (n = 40). After one week, a MVIT and MFLT retest was performed (n = 13).

Results: The general measurement of reliability and agreement for the MVIT show a intra-class correlation coefficient > 0.89, coefficient of variation <11% and standard error of measurement < 1Nm in both muscle groups. The measurement of MFLT flexor provided intra-class correlation coefficient > 0.80, coefficient of variation = 20% and standard error of measurement <10 seconds; while the results for the extensors were intra-class correlation coefficient < 0.50, coefficient of variation = 30% and standard error of measurement > 20 sec.

Conclusions: In both cervical muscle groups, the proposed method and device are reliable and concordant for MVIT evaluation. On its part, gender is a significant scatter factor in MFLT testing.