E-Poster

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Maximal Inspiratory and Maximal Expiratory Pressure Correlation With Age and Functional Status in Stroke Patients

Topic: Health Conditions (Nervous System, Musculoskeletal System, Cardiopulmonary System)

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BACKGROUND

Respiratory muscle strength can be measured by recording Maximal Inspiratory Pressure (MIP) and Maximal Expiratory Pressure (MEP) at the mouth, using a portable manometer device. It is used for respiratory muscle weakness diagnosis and follow-up of patients with various neuromuscular diseases as well as stroke. Both MIP and MEP have been reported to decline with age, whereas their values have yet to be linked to post-stroke functional status in the limited literature available.

METHODS

Maximal Inspiratory Pressure and MEP were measured in 50 stroke patients (23 male, 27 female) by a portable manometer, the MicroRPM (Respiratory Pressure Meter) with a flanged mouthpiece. As a means of establishing functional performance, all patients were also evaluated with the Greek Modified Barthel Index (MBI-Shah version), an instrument adapted and validated for use in Greece. The recorded MIP and MEP values underwent statistical univariate analysis, while multiple linear regression models with enter method and stepwise method were employed in order to examine the contribution of age and functional status to the dependent variables (MIP, MEP).

RESULTS

Findings from the univariate analysis of the MIP variable in stroke participants showed that the MBI total score was low to moderate positively correlated with MIP ($r = 0.333$, $p < 0.05$). In the univariate analysis of the MEP variable, MBI total score was highly positively correlated with MEP ($r = 0.500$, $p < 0.05$). Age was found to be low to moderate negatively correlated with both MIP values ($r = -0.353$, $p < 0.05$) and MEP values ($r = -0.400$, $p < 0.05$). In regression analysis, MBI total score was found to be a statistically significant predictor of the MIP variable (Beta coefficient ± SE: 0.18 ± 0.10; $p = 0.089$; $R^2 = 0.082$), as well as the MEP variable (Beta coefficient ± SE: 0.42 ± 0.12; $p < 0.005$; $R^2=0.300$).

CONCLUSION

Age was inversely correlated with respiratory muscle strength in stroke patients, a result consistent with previous studies. Interestingly, statistically important correlation coefficients were found between the MBI total score and MIP and MEP values, not previously reported in literature.

Statement of Disclosures

None

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