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Is the 1-minute sit-to-stand test related to respiratory muscle strength in patients with COPD?

Sara Miranda, Ana Machado, Hélder Melro, Ana Oliveira, Carla Valente, Alda Sofia Pires De Dias Marques

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Abstract

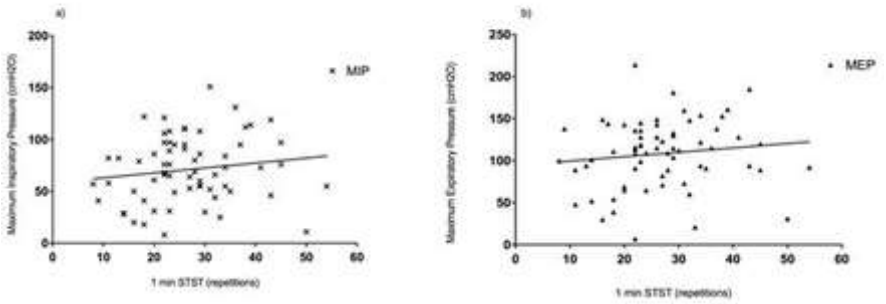
It has been suggested that patients with chronic obstructive pulmonary disease (COPD) with respiratory muscle weakness achieve poorer results in exercise capacity tests, namely in the six-minute walk test (6MWT). 1-min. sit-to-stand (1min STST) is a reliable and valid indicator of functional exercise capacity that correlates well with 6MWT. However, its association with respiratory muscle strength in COPD is unknown. This study explored the relationship between 1-min STST and maximum inspiratory (MIP) and expiratory pressures (MEP) in patients with COPD.

66 outpatients with COPD (66±11y; 75%♂; FEV1 58±26% pred) were recruited from routine pulmonology appointments. 1-min STST and MIP/MEP were collected. Correlations were explored using Pearson coefficient correlation.

Moderate and low positive correlations were found between 1-min STST and MIP ($r=0.51$; $p<0.001$) and 1-min STST and MEP ($r=0.46$; $p<0.001$), respectively (Fig. 1).

1-min STST correlated significantly with respiratory muscle strength, especially MIP, in patients with COPD. Patients with respiratory muscle impairments seem to have worse functional capacity than those with better MIP/MEP. Thus, respiratory muscle training may play an important role in the improvement of functional capacity in patients with COPD with respiratory muscle weakness.

Figure 1 – a) Correlation between Maximum Inspiratory Pressure (MIP) and 1-minute sit-to-stand test (1-min STST); b) Correlation between Maximum Expiratory Pressure (MEP) and 1-min STST.



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Footnotes

This abstract was amended on 27 December 2017 to correct an error in the author list.

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