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Minimal clinically important difference for the 1-minute sit-to-stand after pulmonary rehabilitation in exacerbations of COPD

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Abstract

The established minimal clinically important difference (MCID) of functional recovery after pulmonary rehabilitation (PR) in stable patients may not apply in exacerbations of COPD (ECOPD). We estimated the MCID for the 1-minute sit to stand test (1STS) after PR in ECOPD.

Patients with an outpatient-managed ECOPD who completed a 3-weeks home-based PR programme were included. The 1STS and COPD assessment test (CAT) were assessed pre- and post-PR. The global rate of change (GRC) set at 2, and the MCID established for the CAT, set at 2 for ECOPD and 3 for 3-weeks PR, were used as anchor. Mean change and linear regression were used as anchor-based methods; $0.5 \times \text{standard deviation}$, standard error of measurement (SEM), $1.96 \times \text{SEM}$ and minimal detectable change were used as distribution-based methods. The MCID was pooled by weighting 2/3 to anchor- and 1/3 to distribution-based methods.

39 outpatients with ECOPD (90% male, 71 ± 9 yrs; FEV_1 $49 \pm 19\%$ pred) were included. Moderate, significant correlations were found between the GRC and changes in the 1STS ($r_s = 0.37$, $p = 0.02$), and changes in the CAT and 1STS ($r_s = -0.45$, $p = 0.004$). The pooled MCID for the 1STS was 3 repetitions (Fig. 1).

An increase of 3 repetitions in the 1STS indicates clinically relevant improvements in functionality for outpatients with ECOPD undergoing PR. This MCID may now aid health professionals interpreting the results of PR in ECOPD.

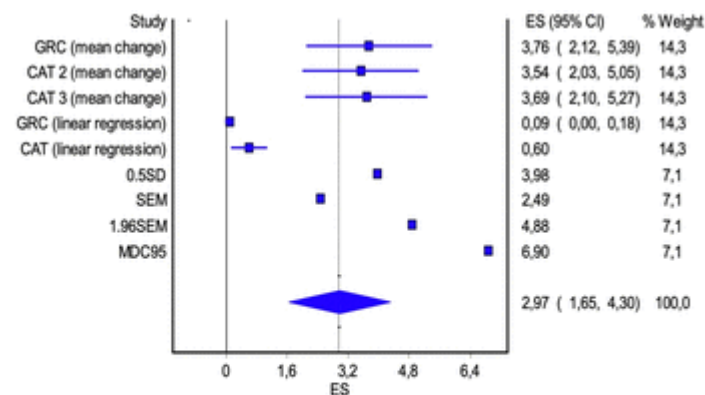


Figure 1 – Plot of the pooled minimal clinically important difference for the number of repetitions in the 1-minute sit-to-stand test in people with exacerbations of chronic obstructive pulmonary disease following pulmonary rehabilitation (n=39). Squares represent the estimates derived for the minimal clinically important difference and, if appropriate, the respective 95% confidence interval. CAT, COPD assessment test; CI, confidence interval; GRC, global rate of change; MDC 95, minimal detectable change; SEM, standard error of measurement; SD, standard deviation.

Footnotes

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