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Minimal clinically important difference and predictive validity of the mMRC and mBorg in acute exacerbations of COPD

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Abstract

Dyspnoea assessment is essential to monitor patients with acute exacerbations of chronic obstructive pulmonary disease (AECOPD). However, the ability of dyspnoea scales to detect AECOPD and evaluate response to treatments is hindered by the lack of evidence on their measurement properties. This study assessed the minimal clinically important difference (MCID) and predictive validity of the modified Borg scale (MBS) and modified Medical Research Council dyspnoea scale (mMRC).

33 patients with AECOPD and not requiring hospitalisation (23♂, 68.5y, FEV1 43±15.2 predicted) were assessed with the MBS and the mMRC and received pharmacological treatment. Both measures and an 11 point Global Rating of Change scale were repeated 3weeks later. Patients were then followed up for 3months. MCID (anchor methods with linear regression analysis) and predictive validity (Cox analysis) were established.

MCIDs were of -1 (95% CI -1.8 to 0) for the MBS and -0.5 (95% CI -1.4 to -0.7) for the mMRC after 3weeks of treatment. Neither the MBS (Hazard ratio [HR]=0.97; p=0.94) nor the mMRC (HR=1.03; p=0.85) were predictors of AECOPD.

Changes of 1 unit in the MBS and of 0.5 in the mMRC appear to be associated with improvements after 3weeks of pharmacological treatment. These changes are in line with those observed in stable patients after bronchodilator and pulmonary rehabilitation. Future studies should address these measurement properties with other therapies, such as pulmonary rehabilitation during AECOPD, and with larger follow ups and samples sizes