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Baseline dependent minimally important differences for clinical outcomes of pulmonary rehabilitation in patients with asthma

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Abstract

Background: Pulmonary rehabilitation (PR) has shown promise as a non-pharmacological treatment in improving asthma-related outcomes, though minimal important differences (MIDs) for clinical PR outcomes in asthma patients remain undefined.

Aims: This study aimed to develop MIDs for clinical outcomes of PR in patients with asthma and examine their variation based on baseline characteristics.

Methods: A retrospective analysis of 722 patients with asthma who completed PR at Ciro (Netherlands) was conducted. Data included demographics, lung function, history of exacerbations, quality of life (SGRQ), dyspnea (mMRC), symptoms of anxiety and depression (HADS), and exercise capacity (6MWT, CWRT). MIDs were calculated using distribution-based methods, for the whole sample and stratified by baseline values.

Results: Significant improvements were observed in exercise capacity, quality of life, and psychological symptoms after PR. MIDs were established as follows: 6MWD (33.8 m), CWRT (180.3 s), SGRQ total score (8.3 points), HADS Anxiety (1.9 points), and HADS Depression (1.9 points). Stratification for baseline values revealed that MIDs varied for the 6MWD, SGRQ impact domain, and HADS scores, with larger MIDs in patients with lower baseline values.

Conclusions: This study is the first to establish MIDs for PR outcomes in patients with asthma, highlighting that MIDs can differ based on baseline characteristics. These findings provide important insights into evaluating PR efficacy in asthma care, emphasizing the use of the established MIDs as a benchmark for meaningful changes, and supporting tailored intervention approaches.

Footnotes

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