Targeting treatable traits in severe asthma: a randomised controlled trial

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ABSTRACT

Rationale: Treatable traits have been proposed as a new paradigm for airway disease management. Objectives: To characterise treatable traits in a severe asthma population and to determine the efficacy of targeting treatments to these treatable traits in severe asthma. Methods: Participants (n=140) with severe asthma were recruited to a cross-sectional study and underwent a multidimensional assessment to characterise treatable traits. Eligible participants with severe asthma (n=55) participated in a 16-week parallel-group randomised controlled trial to determine the feasibility and efficacy of management targeted to predefined treatable traits, compared to usual care in a severe asthma clinic. The patient-reported outcome of health-related quality of life was the trial’s primary end-point. Main results: Participants with severe asthma had a mean±SD of 10.44±3.03 traits per person, comprising 3.01±1.54 pulmonary and 4.85±1.86 extrapulmonary traits and 2.58±1.31 behavioural/risk factors. Individualised treatment that targeted the traits was feasible and led to significantly improved health-related quality of life (0.86 units, p<0.001) and asthma control (0.73, p=0.01). Conclusions: Multidimensional assessment enables detection of treatable traits and identifies a significant trait burden in severe asthma. Targeting these treatable traits using a personalised-medicine approach in severe asthma leads to improvements in health-related quality of life, asthma control and reduced primary care acute visits. Treatable traits may be an effective way to address the complexity of severe asthma.