Development of a tool to measure the clinical response to biologic therapy in uncontrolled severe asthma: the FEOS score.

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Abstract

Background: There is a lack of tools to holistically quantify the response to monoclonal antibodies (mAbs) in severe uncontrolled asthma (SUA) patients. The aim of this study was to develop a valid score to assist specialists in this clinical context. Methods: The score was developed in 4 subsequent phases: (1) elaboration of the theoretical model of the construct intended to be measured (response to mAbs); (2) definition and selection of items and measurement instruments by Delphi survey; (3) weight assignment of the selected items by multicriteria decision analysis (MCDA) using the Potentially All Pairwise RanKings of all possible Alternatives (PAPRIKA) methodology via the 1000Minds software; and (4) face validity assessment of the obtained score. Results: Four core items, with different levels of response for each of them, were selected: "severe exacerbations", "oral corticosteroid use", "symptoms" (evaluated by Asthma Control Test: ACT) and "bronchial obstruction" (assessed by FEV1 % theoretical). "Severe exacerbations" and "oral corticosteroid maintenance dose" were weighted most heavily (38% each), followed by "symptoms" (13%) and "FEV1" (11%). Higher scores in the weighted system indicate better response and the range of responses runs from 0 (worsening) to 100 (best possible response). Face validity was high (intraclass correlation coefficient: 0.86). Conclusions: The FEOS score (FEV1, Exacerbations, Oral corticosteroids, Symptoms) allows clinicians to quantify response in SUA patients who are being treated with mAbs.

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