

Continuous improvement of FEV₁ in severe eosinophilic asthmatics on anti-interleukin-5 therapy.

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Abstract

Background: Severe asthma is associated with an accelerated lung function decline which is likely attenuated by the addition of anti-interleukin-5 (IL-5) therapy in patients with severe eosinophilic asthma. **Objective:** To study the long-term impact of add-on therapy with anti-IL-5 on FEV₁ in severe eosinophilic asthma patients. **Methods:** In this post-hoc analysis, we compared, through a linear mixed model, the evolution of pre-bronchodilation FEV₁ expressed in %pred in a cohort of 50 patients with severe eosinophilic asthma treated with anti-IL-5 (1576 visits) before (median follow-up: 9.2 years) and after (median follow-up: 2.1 years (up to 6.8 years) anti-IL-5 therapy start. **Results:** FEV₁ decline was observed before anti-IL5 start (-0.6 %pred.year⁻¹, p<0.001). FEV₁ improved significantly after anti-IL-5 start (+1.3 %pred.year⁻¹ p<0.001; difference pre-post: p<0.001). A sustained improvement was observed in 31 patients deemed responders (+3.1 %pred.year⁻¹, p<0.001; difference pre-post: p<0.001) vs a continuous decline in 19 patients considered as non-responders (-0.40 %pred.year⁻¹, p=0.087; difference pre-post: p=0.097). Non-responders exhibited a higher prevalence of nasal polyposis, better asthma control and a trend towards higher exhaled nitric oxide values. **Conclusion:** This post-hoc analysis shows that add-on therapy with anti-IL-5 not only stems the accelerated decline in lung function but also makes it reversible in many severe eosinophilic asthma patients, leading to an estimated improvement of 11% FEV₁ %pred after 3 years of treatment. Persistent improvement in lung function is therefore feasible in severe asthmatics and could be chosen as a lung function criterion to define remission of asthma under treatment.

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AM-2023-Anti-IL-5 and FEV1-Allergy.docx available at <https://authorea.com/users/698147/articles/685950-continuous-improvement-of-fev-1-in-severe-eosinophilic-asthmatics-on-anti-interleukin-5-therapy>

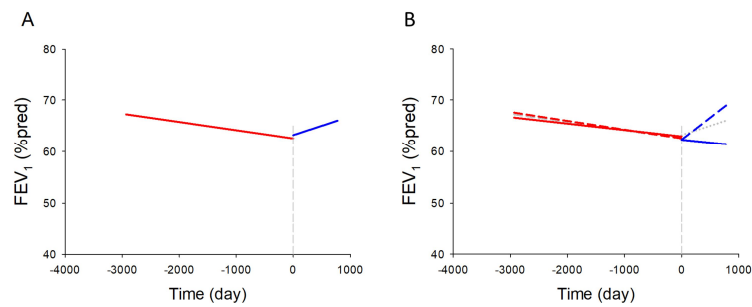


Figure 1.

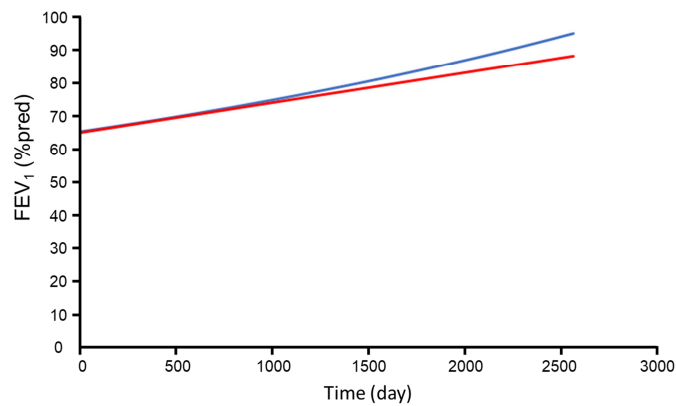


Figure 2