

Abstract

Introduction: Biologics target specific molecular and cellular pathways in severe asthmatics and have the potential to bring clinical remission.

Research question: How is the clinical state of remission related to the level of T2 biomarkers after 12 months of treatment with biologics.

Methods: We conducted an observational, retrospective, monocentric study including 208 severe T2 high asthmatics who received their first biological treatment and assessed the level of FeNO, blood and sputum eosinophils after 12 months of treatment. Our cohort included patients treated with omalizumab (N=92), with mepolizumab (N=72), and with benralizumab (N=39). Remission was defined after one year by the absence of exacerbation, no chronic treatment with oral corticoids and a good symptomatic control defined by asthma control test score ≥ 20 and an asthma control questionnaire ACQ-6 score $< 1,5$.

Results: On the whole cohort, there was no significant difference in FeNO (ppb), absolute blood eosinophils counts ($1/\mu\text{L}$) and sputum eosinophils count (%), between those achieving vs those failing to enter remission. This held true for the mepolizumab and benralizumab groups. However, for patients treated with omalizumab the sputum eosinophils, but not FeNO nor blood eosinophils, remained higher in those failing compared to those achieving remission ($p < 0,05$)

Conclusion: After 12 months of treatment, levels of Th2 biomarkers, can usually not distinguish patients achieving remission vs those who fail.