Abstract

Anti-IgE and Anti-IL-5/IL-5R bring considerable improvement in asthma control in severe T2 high asthmatics. Here we have conducted a cross sectional retrospective study on patients in stable state who had been treated for 1 year with omalizumab (n=39), mepolizumab (n=69) and benralizumab (n=24) and compared their sputum cells counts and FeNO levels. All patients were receiving moderate to high dose ICS/LABA as standard maintenance. Results are expressed as median (IQR) and difference between the groups were analysed by a Kruskall Wallis test and, in case of significance, followed by Dunn's test for pairwise comparisons. Patients receiving benralizumab had the lowest sputum eosinophil count (median: 0,1% (0-1), that was significantly lower than those seen in patients receiving mepolizumab (median 2,6% (0,5-10) $p<0,01$) but not omalizumab (median 0,6% (0,4-2,6); $p > 0,05$). No significant differences were found regarding the other types of sputum cells including macrophages, lymphocytes, neutrophils, etc and nor for total cell counts. FeNO levels were lower in patients receiving omalizumab (median: 16 ppb (9-29) compared to those receiving mepolizumab (median 27 ppb (14-42); $p<0.05$) and benralizumab (median: 32 ppb (24-52); $p<0.01$). For the cohort there was no correlation between FeNO levels and sputum eosinophil counts ($rs=0,14$, $p>0,05$). Patients treated with benralizumab, had sputum eosinophil counts within the normal range while those receiving omalizumab had FeNO values close to normal values. The correlation between FeNO and sputum eosinophils, disappears when patients are receiving anti-IgE and anti-IL5/IL-5R.