

Efficacy of Anti – IL-5 (mepolizumab) Treatment of Nasal Symptoms in Patients with Severe Eosinophilic Asthma – Study design

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Introduction: Chronic rhinosinusitis (CRS) is an inflammatory condition that affects the nose and paranasal sinuses, characterised by nasal purulent discharge, nasal blockage and hyposmia, in combination with facial pain/pressure for at least 12 weeks. CRS can be classified as chronic rhinosinusitis with nasal polyps (CRSwNP) and chronic rhinosinusitis without nasal polyps (CRSsNP). Asthma is a complex chronic inflammatory disorder that presents a lot of different phenotypes and endotypes. Eosinophilic asthma is a specific phenotype characterised by thickening of the basement membrane and good response to corticosteroid. IL-5 is the most important interleukin responsible for eosinophilic airway inflammation.

Material and methods: Patients with severe eosinophilic asthma were enrolled into a study group for the administration of anti-IL-5 (Mepolizumab) for severe eosinophilic asthma in a single specialised pulmonary tertiary institution. All patients were evaluated of their nasal status by a rhinologist for nasal symptoms regarding EPOS criteria, comorbidities (smoking, family history of CRS, allergies, VAS scale of asthma state, gastroesophageal reflux disease) and completed the validated SNOT-22 questionnaire on the same day before the administration of the anti-IL-5. Two separate biopsies were taken from the uncinata process or middle concha or nasal polyps, one for histopathology, the other for immunology. All patients had computer tomography scan of the paranasal sinuses and blood specimens taken for eosinophilia in the peripheral blood. The histopathological disease was characterised by counting of the eosinophils in high power field (HPF). Positive results were regarded when the count was higher than 10 per HPF. The immunologic study was performed by the RNA-sequencing. Hypereosinophilia was defined by a percentage count higher than 4% with a corresponding count higher than 500 per cubic mm.

Results: The study is still in progress, currently including 9 patients, 6 with CRS and 3 without. Preliminary results show no statistically significant differences between the groups. Unfortunately, the data about the postinterventional results of our patients is not available yet.

Conclusion: Literature shows improvement in radiologic findings and quality of life markers with Mepolizumab use.

Key words: chronic rhinosinusitis, asthma, mepolizumab