SIGLEC-8 IN INDUCED SPUTUM OF COPD PATIENTS

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Chronic obstructive pulmonary disease (COPD) is related to infiltration and activation of inflammatory cells in airways and pulmonary tissue. In COPD neutrophils are prominent while eosinophilic influx is typical to asthma. Inflammatory cells express sialic acid-binding immunoglobulin like lectins called siglecs, a family of innate immune receptors that are transmembrane I-type lectins binding sialic acid. One member of siglec family - siglec-8 is expressed mostly in eosinophils and may be an important therapeutic target in asthma or COPD. The aim of our project was to quantify Siglec 8 expression in induced sputum cells of COPD patients treated with long-acting beta2-agonists (LABA) or combined with long-acting antimuscarinic agents (LAMA) - tiotropium bromide. Thirty stable COPD patients (21 males and 9 females, mean age 67yrs) receiving 12 ug BID Formoterol therapy were assayed before and after three months add-on therapy consisting of and 18 ug QID Tiotropium. In all patients spirometry, lung volumes, and DLCO were performed before and after therapy. All patients were subjected to the sputum induction before and after therapy. Sputum cells were isolated and processed to obtain cell membranes. Siglec 8 protein expression was assayed by Western blot. In patients receiving tiotropium and formotereol improved FEV1 and lung volumes were observed comparing to formoterol–only treated patients. Mean Siglec 8 level was significantly higher in eosinophilic subgroup of COPD patients in comparison to non eosinophilic patients before therapy 40000 vs 15000 Adj. Vol. INT*mm^2. We also found significant changes in response to therapy applied. Our data show that Siglec 8 may be involved in COPD pathogenesis and may influence COPD phenotyping.