Mixed T helper cell signatures in chronic rhinosinusitis with and without polyps.

In chronic rhinosinusitis (CRS) different phenotypes have been reported based on cytokine profile and inflammatory cell patterns. The aim of this study was to characterize the intracytoplasmatic cytokines of T cells infiltrating the inflamed sinonasal mucosa. Infiltrated T cells and tissue homogenates from sinonasal mucosal samples of 7 healthy subjects, 9 patients with CRS without nasal polyp (CRSsNP), 15 with CRS with nasal polyps (CRSwNP) and 5 cystic fibrosis patients (CF-NP) were analyzed for cytokine expression using flow cytometry and multiplex analysis respectively. Intracytoplasmic cytokines in T cells were analyzed after stimulation of nasal polyps with Staphylococcus aureus enterotoxin B for 24 hours. The number of T cells per total living cells was significantly higher in patients with CRSwNP vs. CRSsNP and controls. 85% of the CD4(+) T cells showed to be memory T cells. The effector T cells present in all tissues have a predominant Th1 phenotype. Only in CRSwNP, a significant fraction of T cells produced the Th2 cytokines IL-4 and IL-5, while nasal polyps from CF patients were characterized by a higher CD4/CD8 T cell ratio and an increased number of Th17 cells. 24 h stimulation with SEB resulted in a significant induction of CD4(+) T cells producing IL-10 (Tr1 cells). T cell cytokine patterns in healthy and inflamed sinonasal
mucosa revealed that Th2 cells (IL-4 and IL-5 producing cells) are significantly increased in CRSwNP mucosal inflammation. Exposure to SEB stimulates Tr1 cells that may contribute to the Th2 bias in CRSwNP.

Zeitschriftentitel / Abkürzung:
PLoS ONE

Jahr: 2014

Band: 9

Heft / Issue: 6

Seiten: e97581

Sprache: eng


TUM Einrichtung: Institut für Molekulare Allergologie und Umweltforschung

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Molekulare Allergologie
  > Molekulare Allergologie (Prof. Schmidt-Weber) > 2014

entries: