B-stacked protein aggregates in polyps tissue from patients with chronic rhinosinusitis with nasal polyps

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ABSTRACT

State of the Art: In spite of multiyear studies, the main questions of appearance, growth, and frequent recurrence of nasal polyps are still unclear and remain without of universally acknowledged explanation. Meanwhile, the trigger role of inflammation is supported by majority of authors. As well known, the common for inflammation non-functional proteolysis, endogenous intoxication, and oxidative stress lead to formation and accumulation of valuable amounts of wounded proteins, which are structurally unstable and declining to formation of insoluble aggregates. AIM: To test the possibility of including of β-stacked protein aggregates in the tissues of nasal polyps in patients with chronic rhinosinusitis with nasal polyps. **Materials and Methods:** The group of 30 patients with CRSwNP was undergone FESS with polyps" removal. The tissues of nasal polyps were tested by histologic, light and polarise microscopy study. **Results:** Two kinds of Congo red painted inclusions with peculiar red-green birefringence were detected in all studied preparations. Similar to amyloids, they were located along collagen and reticular structures. As well known, such inclusions are characterised by high stability, resistance to proteolysis, cytotoxicity, immunogenicity, and the ability for the growth at the expense of surrounded tissues. Contrary to previous opinion, modern knowledge allows to determine these inclusions in nasal polyps neither as collagen, nor as hyaline, but as some kind of β-stacked protein aggregates formed on the surface of insoluble collagenous or reticular matrix. **Conclusions:** The presence of β-stacked protein aggregates in the tissues of nasal polyps may be one of the possible causes of alteration of normal functioning of surrounded tissues with their involvement into pathologic process as well as recurrent course of nasal polyposis.

Pharmaceutical treatment of chronic rhinosinusitis depending on phenotypic consideration

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ABSTRACT

My talk is on the pharmaceutical treatment strategy to downregulate the persistent inflammation in nasopharyngeal mucosal linings. Therefore, I would introduce you to our clinical trial for the treatment of patients with chronic persistent rhinosinusitis coupled with nasal allergy or eosinophil- dominant pathology. As you already know, a long term per os administration of macrolide series of antibiotics has been widely used and accepted in Japan for the treatment of chronic infective rhinosinusitis or otitis media with effusion and its clinical efficacy is fairly accepted. However, chronic rhinosinusitis coupled with nasal allergy or eosinophil-dominant pathology, so called eosinophilic rhinosinusitis is refractory even to this treatment. It is because that eosinophilic infiltration and activation in paranasal sinuses are considered to be a major contributing factor to the pathology, in addition to ostium blockade with polyp formation. Therefore, we conducted a clinical trial and examined the clinical efficacy of Suplatast Tosilate, which is cytokine-modulating immunopharmacological drug together with macrolide series of antibiotics, in the treatment of patients with chronic rhinosinusitis with nasal allergy or eosinophil-dominant pathology, in order to target on the pathological contribution of eosinophils. Simultaneously, nasal lavage fluids and mucosal specimens of middle meatus were sampled as much before and after the treatment and processed for analyses of eosinophil infiltrations, ECP levels, IL-5 levels, and immunohistochemistry of Th2-type cytokine (IL-4, IL-5) -producing cells and adhesion molecule expression of capillary venules. Our peri-surgical and post-operative treatment strategy of patients with eosinophilic rhinosinusitis is also discussed in my presentation.