

## EVALUATION OF ANTIMICROBIAL AND DEFENCE PROTEINS IN SAMPLES OF PRIMARY AND RECURRENT NASAL POLYPS

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**Objectives.** To investigate the complex appearance, relative distribution and interlinks of  $\beta$ -defensin-2,  $\beta$ -defensin-3,  $\beta$ -defensin-4 and cathelicidin LL37 in case of primary and recurrent nasal polyps.

**Materials and Methods.** Study group consisted of 29 samples from patients with primary CRSwNP and 19 patients with recurrent nasal polyps. Samples were collected during functional endoscopic sinus surgery (FESS). Control group consisted of 17 normal healthy nasal mucosa samples gathered during routine septoplasty. Tissue  $\beta$ -defensin-2,  $\beta$ -defensin-3,  $\beta$ -defensin-4 and cathelicidin LL37 were detected by immunohistochemical analysis. The results were evaluated by using semi-quantitative method and analysed with the help of Spearman's rank correlation and Mann-Whitney U test.

**Results.** Group with primary nasal polyps demonstrated significantly decreased number of  $\beta$ -defensin-2 ( $p < 0.001$ ),  $\beta$ -defensin-3 ( $p < 0.001$ ) and LL 37 ( $p < 0.001$ ) positive structures in epithelium and increased number of  $\beta$ -defensin-2 ( $p = 0.033$ ) positive structures in connective tissue when compared to the control group. Group with recurrent polyps also showed decreased number of  $\beta$ -defensin-2 ( $p < 0.001$ ),  $\beta$ -defensin-3 ( $p < 0.001$ ) and LL 37 ( $p < 0.001$ ) positive structures in epithelial cells in comparison to controls. There were no significant differences between groups of primary and recurrent nasal polyps.

**Conclusions.** Decreased  $\beta$ -defensin-2,  $\beta$ -defensin-3 and cathelicidin LL37 levels in epithelium show impaired antimicrobial function of mucosa in patients with CRSwNP. Increased  $\beta$ -defensin-2 found in subepithelial connective tissue of primary nasal polyps indicates its role in pathogenesis of CRSwNP as well as possible subepithelial invasion of microorganisms.