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Title: Expression of mRNA chemokine and their receptors in nasopharyngeal brush-biopsies represents age of bronchial asthma patients

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Body: Introduction: System of chemokines in upper airways is a tempting object of investigation BA pathogenesis. Methods: 70 patients with asthma were examined. Range of age of the patients was 16-74 years. Sex distribution was 31 male and 39 female. To study the age dynamics of the asthma patients were divided into 4 groups: first group - 16-25 years (14), the second group - 26-39 years (14), the third group - 40-53 years (21) and the fourth group - 54-74 years (21). The control were 17 healthy volunteers who were excluded diseases of the upper and lower respiratory tract. Results: mRNA of eotaxin, eotaxin-2, MIP-1 α , MIP-1 β , RANTES, CCR1, CCR3, CCR5, CXCR1, and CXCR2 were studied. Increase in eotaxin mRNA expression ($p = 0.045$), eotaxin-2 (0.036), MIP-1 α (0.0003), MIP-1 β (0.002) and CXCR1 (0.004) was indicated. The reduction of CCR1 gene expression in patients with asthma was assessed. Eotaxin-2 had wave-like dynamics depending on patients age. MIP-1 α was lowest in the second and third groups, and in the first and fourth - were significantly higher. mRNA of CCR1 and CXCR1 was significantly decreased in the second group compared to the first, meanwhile in the third and fourth ones levels of mRNA of both receptors increases depending on the age of the patients. Conclusion: The state of chemokines and relative receptors gene expression in upper airways represents age features of BA pathogenesis. The evaluation of nasopharyngeal brush-biopsies chemokine mRNA expression is perspective diagnostic approach to investigate asthma pathogenesis and clinical course.