**Title:** IL-25 secreted from epithelial cells has the potential to promote airway remodeling in asthma

Ms. Fen 7230 Liu liufen0102@163.com ¹, Ms. Jinxiang 7231 Wu wujinxiang1984@sina.com MD ¹, Ms. Jiping 7232 Zhao qdzjp@126.com ¹, Ms. Wen 7233 Liu lw123lw@163.com ¹, Mr. Liang 7234 Dong dl5506@yahoo.com.cn MD ¹ and Mr. Wenxiang 7235 Bi biwenxiang@sdu.edu.cn MD ². ¹ Department of Pulmonary Medicine, Qilu Hospital of Shandong University, Jinan, Shandong, China and ² Department of Biochemistry and Molecular Biology, Medical School of Shandong University, Jinan, Shandong, China.

**Body:**

**Introduction:** Interleukin (IL)-25 plays a pivotal role in the pathogenesis of asthma, not only in airway inflammation, but also in airway remodeling. Objective: To explore the function and significance of IL-25 in the pathogenesis of eosinophilic asthma (EA) and non-eosinophilic asthma (NEA). Methods: Induced sputum was analyzed from 50 untreated asthmatic patients: 26 with EA, 24 with NEA. Serum and induced sputum from all the participants were collected and the level of IL-25 in the samples was determined by enzyme-linked immunosorbent assay (ELISA). Expression of IL-25 in bronchial epithelium and basement membrane thickening were quantified by immunohistochemistry. Results: Compared with healthy control subjects, the lung function was impaired in patients with EA and NEA. ELISA results showed that the levels of IL-25 in the serum and induced sputum of asthmatic patients were significantly higher than healthy subjects (p < 0.05). But there were no statistic differences between EA and NEA patients (p > 0.05). The immunohistochemistry results indicated that higher expression of IL-25 and thickened basement membrane were observed in asthmatic bronchial epithelium. Correlation analysis showed that the level of IL-25 in serum and induced sputum was positively correlated with the average thickness of basement membrane in asthmatic patients. Conclusion: IL-25 secreted from epithelial cells has the potential to promote airway remodeling in asthma. The increased level of IL-25 in peripheral blood and bronchial epithelium was parallel, eosinophil may not be necessary for airway remodeling in asthma. Key words: IL-25, eosinophilia, airways remodeling, bronchial asthma.