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Title: Peripheral blood Th17 cells and serum IL-17 levels in patients with D. pteronyssinus-induced late-phase asthmatic response

Mrs. Ieva 13904 Bajoriuniene ieva.bajoriuniene@gmail.com MD [1], Prof. Dr Kestutis 13905 Malakauskas kestutis.malakauskas@kmu.lt MD [1], Mrs. Simona 13906 Lavinskiene lavinskiene.simona@gmail.com [1], Dr. Jolanta 13907 Jeroch jolanta.jeroch@kmuk.lt [1], Mrs. Edita 13908 Gasiuniene edita.gasiuniene@gmail.com MD [1], Dr. Astra 13971 Vitkauskiene astra.vitkauskiene@kaunoklinikos.lt MD [2] and Prof. Dr Raimundas 13982 Sakalauskas raimundas.sakalauskas@kmuk.lt MD [1]. [1] Department of Pulmonology and Immunology, Lithuanian University of Health Sciences, Kaunas, Lithuania, 50009 and [2] Department of Laboratory Medicine, Lithuanian University of Health Sciences, Kaunas, Lithuania, 50009 .

Body: Background. Biphasic cellular immune reaction which follows inhalation of allergen is the specific feature of allergic inflammation. Therefore, Th17 cells and IL-17 may have played a role in the development of the late-phase asthmatic response in patients with allergic asthma. Objectives. To evaluate the percentage of Th17 cells in peripheral blood (PB) and serum IL-17 levels in patients with D. pteronyssinus-induced late-phase asthmatic response. Methods. We studied 28 patients with allergic asthma who developed early-phase asthmatic response (EAR) (n=16) and late-phase asthmatic response (LAR) (n=12) after bronchial challenge with D. pteronyssinus. The control group included 10 healthy subjects (HS). PB collection was performed 24 h before as well as 7 h and 24 h after challenge. The percentage of Th17 cells was analyzed by FACS. Serum IL-17 levels were determined by ELISA. Results.

Peripheral blood Th17 cells and serum IL-17 levels in patients with allergic asthma before and after bronchial challenge with D. pteronyssinus

Characteristic	24 h before	7 h after	24 h after
Th 17 cells (%)			
EAR	1.50±0.31†	1.54±0.25†	2.42±0.41†
LAR	1.79±0.35†	2.40±0.43†	3.51±0.31†*#
HS	0.60±0.17	0.55±0.19	0.51±0.11
IL-17 levels (pg/ml)			
EAR	4.40±0.61†	6.30±0.76†	9.01±1.51†*
LAR	4.17±0.60†	8.33±0.67†#	13.47±1.85†*#
HS	1.32±0.21	1.58±0.36	2.10±039

Data are expressed as mean ± SEM; † $P < 0.05$, versus HS; * $P < 0.05$, in comparison with the baseline values; # $P < 0.05$, LAR versus EAR.

Conclusions. D. pteronyssinus-induced late-phase asthmatic response in patients with allergic asthma is associated with increased percentage of Th17 cells in PB and elevated serum IL-17 levels.