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Collection of abstracts "**Biological Markers in Fundamental and Clinical Medicine**" (*official specialized scientific journal of The Czech Republic, registration number MK CR E 22955*) by the publishing center of The ESCBM provides its lanes for information materials in the field of scientific research of modern biological markers in clinical and experimental medicine, pharmacy, and fundamental biology. The collection publishes abstracts of scientific and practical conferences, seminars, symposia, dedicated to the study of molecular-biochemical and functional markers, playing a role in pathogenesis, diagnosis, prognosis, as well as assessing the monitoring of the treatment effectiveness for the various systems and organs diseases. **Among the priority topics of the journal there is the research of molecular mechanisms of diseases pathogenesis, the study of the structure and functions of peptides, nucleic acids, nucleotides, lipids and other biologically active components of body cells.**

The collection is intended for fast and systematic publication of abstracts, containing the results of author's research, reviews highlighting major developments in the field of biological markers, short messages, new experimental and clinical studies, which use biological markers, as well as proposing new principles and methods for the study of biological markers.

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is under constant control of immune system and their activation with damage of various organs and systems is possible only in case of development of immunodeficiency state. This applies to pregnant women in a certain way, since they enter the period of "physiological immunodepression" and may be more prone to the pathogenic effect of TORCH infection.

Materials and Methods. TORCH infections screening in pregnant women with miscarriage and premature labour risk being was carried out in the department of pregnancy pathologies, which is based on immunological department of laboratory of Kharkiv Regional Clinical Hospital - Centre of Emergency Medical Treatment and Disaster Medicine. 160 women aged 16 to 43 years were examined; the average age was 26 years. The gestation period ranged from 5 to 36 weeks, on average - 23 weeks.

Results. The majority of examined patients (71.2%) had positive results for the chronic form of the TORCH infection. The content of IgG against the herpes virus (HSV ½) was increased in 129 women (81%), cytomegalovirus - in 143 (89%), toxoplasma - in 117 (73%), rubella - in 145 (91%), chlamydia - in 35 (22%) pregnant women. In addition, 5% of the examined pregnant women showed positive results for the acute form of infection. There was increased IgM level to herpes simplex virus in 9 women (2%), to cytomegalovirus - in 3 (2%), to toxoplasma - in 2 (1%), to chlamydia - in 19 (12%) pregnant women.

Conclusion. Evaluation of markers of TORCH infections showed diagnostic significance and could be used for predicting of the course of pregnancy and preventing various fetus pathologies related to TORCH.

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CYTOKINE RESPONSE TO VIRAL INFECTIONS OF UPPER RESPIRATORY TRACT IN ASTHMATIC CHILDREN

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Background. It is known that children with asthma are susceptible to the upper respiratory tract infections (URTIs). Likewise, respiratory infections play an essential role in the onset and progression of asthma [1]. In recent years a growing body of evidence have been obtained showing that immunological shift towards type 2 inflammatory response with overproduction of interleukins (IL) 4, 5, and 13 plays an essential role in the pathogenesis of asthma [2]. The study objectives were to investigate the serum cytokine response during viral URTIs in asthmatic children.

Materials and Methods. We enrolled a total of 95 children aged 3-7 years suffering viral URTIs on the 1-3rd day of the disease. The main group were 62 asthmatic patients with mild to moderate asthma, and 33 non-allergic patients were the controls. Serum levels of interferon α and γ (IFN- α , IFN- γ) were measured on the 1-2nd, 4-5th and 7-9th day of URTI, and serum IL-4, IL-5 and IL-13 concentrations were studied in the early and late disease.

Results. Compared to the control group, asthmatic children showed significantly lower serum levels of both interferons in the early disease (IFN- α 60.7±4.5 pg/ml and IFN- γ 4.3±0.2 pg/ml vs. 75.9±3.5 and 9.5±1.6 pg/ml in controls, resp., $p < .01$) and showed no significant increase in interferon levels in the middle (IFN- α 37.5±2.8 pg/ml vs. 131.0±26.8 pg/ml in controls, IFN- γ 6.6±0.4 pg/ml vs. 9.5±1.6 pg/ml in controls, $p < .001$) and late disease (IFN- α 28.7±1.6 pg/ml, IFN- γ 5.9±0.3 pg/ml vs. 59.9±4.1 pg/ml and 5.9±0.6 pg/ml in controls, $p < .05$). Levels of pro-allergic cytokines IL-4 and IL-13 in asthmatic children showed substantial increase during URTI (IL-4: 0.8±0.1 pg/ml vs. 0.5±0.1 pg/ml in controls initially, 1.5±0.3 pg/ml vs. 0.5±0.1 pg/ml in controls, $p < 0.01$ in the late disease; IL-13: 12.6±2.8 pg/ml vs. 2.5±0.4 pg/ml in controls, and 23.2±2.3 pg/ml vs. 2.8±0.2 pg/ml in controls, in the early and late disease, resp.; $p < .001$).

Conclusion. Results of the study revealed that not only intensification of allergic inflammation but also depression of interferon response during viral URTIs is typical for asthmatic children.

References:

1. Busse WW, Lemanske RF, Gern JE. The Role of Viral Respiratory Infections in Asthma and Asthma Exacerbations. *Lancet*. 2010;376(9743):826-834. doi:10.1016/S0140-6736(10)61380-3.
2. Doran E, Cai F, Holweg CTJ, Wong K, Brumm J, Arron JR. Interleukin-13 in Asthma and Other Eosinophilic Disorders. *Frontiers in Medicine*. 2017;4:139. doi:10.3389/fmed.2017.00139

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SYSTEMIC INFLAMMATION AND THE STATE OF CENTRAL HEMODYNAMICS IN PATIENTS WITH CORONARY HEART DISEASE

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Cardiovascular disease, and coronary heart disease (CHD) first and foremost, is one of the leading causes of mortality in developed countries of the world [1]. The prognosis for patients with coronary heart disease depends, predominantly, on the progression of coronary atherosclerosis (CA). The pathogenetic basis of CA is chronic systemic inflammation (CSI) [2]. CSI in CA is supported by induction of cytokine-associated pathways of intracellular signaling. The central component of CSI is the nuclear factor kappa B (NF- κ B), the main activators of which are proinflammatory cytokines (CK), especially interleukin 1 (IL-1) and tumor necrosis factor α (TNF α) [3, 4]. The effector unit of the CSI is CK