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Among the patients, only 49% (46/94) had a positive family history, but 75% (9/12) of this number belonged to children with severe asthma. Of 46 patients with a compromised allergic history, 72% (33/46) had asthma among close relatives, 35% (16/46) had other allergic manifestations, and in 13% (6/46) these 2 risk factors were combined.

Despite the fact that boys predominated among the examined patients, the allergic "heritage" prevailed on the maternal side - 56%.

When collecting the history, it was found that the asthma debut started with signs of atopic dermatitis or allergic rhinitis. Atopic dermatitis occurred in 72% (58/94) of asthma patients, and allergic rhinitis in 45% (42/94). In addition, 40.5% (38/94) of children had symptoms of both diseases. It should be noted that the percentage of concomitant allergic pathology probably increases in relation to the severity of asthma: atopic dermatitis p1-3 = 0.02; allergic rhinitis p1-3=0.01. Manifestations of atopic dermatitis in 100% of children in groups 2 and 3 occurred before the age of one year.

Conclusions.

1. The established data can be auxiliary indicators in the algorithm for examining frequently ill children to identify risk groups for the development of asthma.
2. Careful collection of history (Careful history taking) and identification of these risk factors can be used to predict the development of asthma in children.

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NECROSIS OF NEUTROPHIL GRANULOCYTES IN CHILDREN WITH ASTHMA

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Asthma remains one of the global and urgent problems of our time.

Asthma is characterized by chronic airway inflammation that is associated with airway hyperresponsiveness and leads to airway damage and remodeling.

Macrophages, mast cells, lymphocytes, eosinophils and/or neutrophils are the main cellular elements of inflammation. Neutrophil granulocytes (NG) are one of the first

cells that migrate to the inflammatory environment. Modernity presents NG as a unique population of immune system cells that belongs to innate immunity and has important functional capabilities that allow activating and regulating adaptive immunity. Damaged NGs have three ways of realizing their death: necrosis, apoptosis and NETosis. As a result of necrosis, the cytoplasmic membrane is lysed and the content of NG is released into the surrounding tissues, which leads to excessive production of cytokines, and, often, to immune system hyperactivation with the development of a local and systemic inflammatory reaction and damage to organs and tissues (purulent-septic diseases, autoimmune and allergic diseases).

During the interaction of neutrophils with pathogens, one of the mechanisms for the implementation of phagocytosis is oxygen-dependent intracellular killing, in which there is an increase in the consumption of glucose and oxygen (respiratory burst). It is known that patients with asthma have pronounced changes in all links of immunity, which are determined by the disease severity degree. A decrease in the reserve number of phagocytic cells and disruption of their phagocytic activity play one of the leading roles in the chronic inflammatory process in asthma.

The aim of this study was to study the percentage of dead necrotic granulocytes (7-AAD positive granulocytes, %) in children with asthma.

Research materials and methods. The study was conducted in the pulmonology department on the basis of children's hospital № 16" in Kharkiv in the fall of 2020. 26 children with persistent asthma, partially controlled during the exacerbation period, were examined. Groups of patients were formed depending on the degree of asthma: group 1 — mild persistent asthma (n = 12), group 2 — moderate persistent asthma (n = 7), group 3 — severe persistent asthma (n = 7). Practically healthy children (n = 9) were included in group 4.

The percentage of dead necrotic granulocytes was assessed using 7-aminoactinomycin D (7AAD) staining. This dye is used to distinguish between viable and non-viable cells, as it can enter cells only when the integrity of the cell membrane is disrupted. 7AAD becomes fluorescent when bound to DNA. Thus, non-viable cells are 7AAD-positive. Our research was carried out using a laser flow cytofluorimeter-sorter BD FACSCanto

II (Becton Dickinson, USA) with analysis of the obtained results using the FACSDiva 6.1.2 program.

The results. In patients with severe persistent asthma, there was a probable decrease in the percentage of dead necrotic granulocytes compared with both the control group and the levels in patients with mild and moderate asthma ($p_{1-3} = 0.0009$, $p_{2-3} = 0.0017$, $p\ k-3 = 0.0177$).

There was a direct, strong correlation between the levels of 7-AAD positive granulocytes and level of reactive oxygen species (ROS) in neutrophils ($r = 0.5597$ $p = 0.0006$).

Conclusions.

1. A statistically significant decrease in the percentage of dead necrotic granulocytes (neutrophils) in patients with severe asthma most likely reflects the presence of a defect in the processes of NG phagocytosis by oxygen-dependent intracellular killing. The phagocytosis disorder consequence is the deterioration of the disposal processes of the lung tissue damaged by the inflammatory process and inhibition of the recovery processes.
2. The lack of significant differences between the percentage of dead necrotic granulocytes in children with mild and moderate asthma, compared to the control group, is probably related to better lung function.

Hlushko Svitlana, Sloz Diana

DIFFICULTIES OF OPEN OVAL WINDOW AND SECONDARY ATRIAL SEPTAL DEFECT DIAGNOSIS IN NEWBORN AND EARLY AGE CHILDREN

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Atrial septal defect (ASD) is one of the most common congenital heart abnormalities. One of the types of non-union of the septum is an open oval window, which can be detected in more than 20-25% of patients during transthoracic Doppler echocardiography (DECHOCG). Defects of small sizes are closed independently, and some in adults require surgical intervention to prevent complications such as

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