ФЕСТИВАЛЬ МОЛОДІЖНОЇ НАУКИ

"Медицина третього тисячоліття"

13-15 лютого 2023

ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

ЗБІРНИК ТЕЗ

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SIGNIFICANCE OF VON WILLEBRAND FACTOR IN CHILDREN ASTHMA.

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Asthma is an urgent problem of global importance that affects almost 300 million people in the world. The pathogenesis of asthma is based on a chronic systemic inflammatory process associated not only with damage to the respiratory tract, but also damage to the vascular endothelium, the complement system, the blood coagulation system, and others. It has been scientifically proven that endothelial dysfunction is a component of the pathogenesis of many serious diseases: atherosclerosis, diabetes mellitus, systemic immune rheumatic diseases, and others.

To identify this problem, studies of pro-inflammatory and anti-inflammatory cytokines are used. It is known that the synthesis of von Willebrand factor (vWF) occurs through the endothelium of vessels, and disturbances in its condition are manifested by changes in the concentration of vWF in the blood plasma.

This fact made it possible to consider vWF as a potential marker of endothelial dysfunction. Data on the features of the functional state of the endothelium at different stages of asthma remain controversial. This is what prompted us to search for new information in this direction. In our study, we assessed the state of the vascular endothelium by determining the level of von Willebrand factor in the blood plasma of children with asthma and apparently healthy children.

The purpose of this study was to study the level of vWF in children with asthma.

Materials and methods: The study involved 94 children, of which 81 children had asthma of varying severity and 13 children were practically healthy. The children were between the ages of 5 and 17 and were being examined or treated at a children's hospital.

Groups of patients were formed depending on the degree of asthma: group 1 — mild persistent asthma (n = 59), group 2 — moderate persistent asthma (n = 10), group 3 — severe persistent asthma (n = 12). Group 4 included practically healthy children of

similar age and sex who did not suffer from acute illnesses during the past three months and did not have signs of chronic diseases, but were admitted to the hospital for routine health control or vaccination (n = 13).

The vWF study was carried out by the immunoenzymatic method using the Human VWF (Von Willebrand Factor) ELISA Kit.

The results.

Kruskel-Wallis test showed a statistically significant difference in vWF levels between groups ($H = 69.461$, $p < 0.000$).

On the other hand, the dependence of the level of von Willebrand factor on the appropriate ranking by severity reflected the severity of asthma.

It was found that the levels of vWF in children of the 1st, 2nd and 3rd groups had a statistically significant increase compared to the control group ($p < 0.000$). The highest indicators were observed in patients of groups 3, and the lowest - in the control group. There was a direct mean strength of correlation between EF levels and lung function indices (FEV1 $r = 0.6394$ $p < 0.05$; FEV1/FVC $r = 0.7322$ $p < 0.05$; PEF $r = 0.6387$ $p < 0.05$).

Conclusions:

1. A statistically significant increase in the level of the von Willebrand factor in patients with severe asthma indicates its dependence on the severity of the disease.
2. An increase in von Willebrand factor in patients with asthma indicates the presence of endothelial dysfunction. A positive increase in von Willebrand factor from mild to severe asthma indicates the severity of endothelial dysfunction depending on the severity of asthma.
3. High levels of von Willebrand factor in patients with asthma can be considered as markers of the severity of asthma in children.