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# THE VALUE OF THE IMMUNE STATUS IN MISCARRIAGE

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**ANNOTATION**

This article analyzes the value of the immune status in miscarriage. Special attention is paid to the study of the spectrum of autoantibodies associated with AFS in the peripheral blood of women during pregnancy.

**KEYWORDS:** Antiphospholipid syndrome; miscarriage, autoantibodies.

The most important problem of practical obstetrics to date is miscarriage, which reaches 15-20% of all its outcomes. The most significant causes of reproductive losses are violations of immune mechanisms. One of the main causes of such disorders is antiphospholipid syndrome (AFS), which is the main trigger for the development of thrombophilic conditions.[2,3]

The problem of antiphospholipid syndrome remains the main one that has not been completely solved in the health sector around the world, as well as in our Republic of Uzbekistan.

The frequency of APS in women with recurrent pregnancy losses is achieved by 27-42%. In the development of this pathology, organ-specific autoantibodies are important that can bind to negatively charged phospholipids of platelet cell membranes and endothelial cells[1,4] and lead to the development of thrombophilic complications, thrombosis in the vessels and placenta with the formation of infarcts in the placenta and structural changes that lead to a violation of its normal functioning.

The pathogenesis of clinical manifestations of AFS is realized as a result of the development of thrombophilic conditions. Thus, the action of various factors (infections, neoplasms, drugs) activates the synthesis of autoantibodies. They bind to annexin 5, prothrombin, proteins C and S, interfering with the coagulation cascade, binding to platelets, potentiating their aggregation, affecting endothelial cells, leading to the development of endothelial dysfunction, which is one of the main pathogenetic factors in the development of AFS. Mediators released by endothelial cells when they are damaged can serve as additional factors that aggravate the severity of the disease.

**The aim** of our study was to study the spectrum of autoantibodies associated with AFS in the peripheral blood of women with habitual pregnancy.

## RESEARCH MATERIALS AND METHODS

A survey of 120 women of reproductive age was conducted at the perinatal center in Bukhara. The examined women were divided into 2 groups: the first group - somatically healthy women with a physiologically occurring pregnancy (n=40), the second group–women with a diagnosis of habitual miscarriage (n=80).

The age of women ranged from 25 to 35 years, with an average of 21± 6.5 years. The criteria for inclusion in group I were the first trimester of pregnancy and the absence of pregnancy complications. The criteria for inclusion in group II were the first trimester of pregnancy, the threat of termination of pregnancy, and a history of miscarriage.

All the patients were conducted clinical and laboratory examination including General blood test, urine, biochemical, coagulopathies and bacteriological examination.

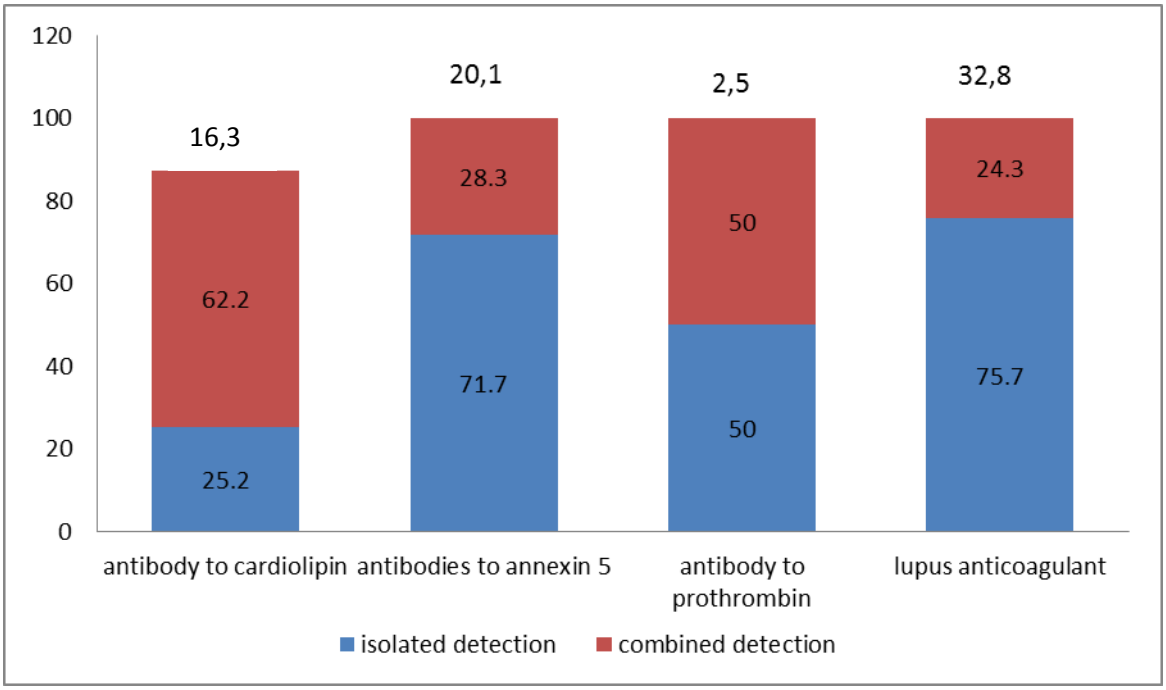
The exclusion criteria in all groups were diabetes mellitus, the presence of proven endocrine and genetic factors of miscarriage, and uterine malformations.

In peripheral blood sera, the content (IgG/ Ig M) of cardiolipin, annexin 5, and prothrombin antibodies was determined by three – phase enzyme immunoassay

(ELISA) using commercial test systems (Germany and Austria). Lupus antigen was determined on the coagulometer ACL ElitPRO using reagents from Siemens (Germany). Static processing of the received data was performed using Statistica Windows 7.0.

**THE RESULTS OF THE STUDY**

The results of the study showed that autoantibodies in women with physiological ongoing pregnancy (n=40) were not detected, autoantibodies in women with habitual miscarriage (p=80) were detected in 42.8% of cases. Among them, antibodies to cardiolipin were found in 16.3% of patients (n=20), while an isolated increase in antibody to cardiolipin was observed in 25.2% (n=31) of cases, in 62.2% (n=49) it was a combination with other types of autoantibodies. Antibodies to annexin-5 were detected in 20.1% of patients. Lupus anticoagulant was detected in 32.8% of patients, isolated in 75.7%, combined in 24.3% of cases.




**Relative frequency of detection of autoantibodies in the blood serum of women with habitual early pregnancy, %. Fig. 1.**

Evaluation of the level of markers of endothelial dysfunction showed that the content of thrombomodulin and Willebrand factor in peripheral blood in women with habitual miscarriage was higher than in women with physiologically occurring pregnancy. When analyzing a group of patients with habitual miscarriage, it was noted that the level of these markers was higher in women with habitual miscarriage without autoantibodies.

When studying the level of endothelin -1 in peripheral blood serum, there were no differences in the groups of women with habitual pregnancy and women with physiologically occurring pregnancy.

Thus, the results of the study demonstrated a significant role of autoantibodies in the development of a pathological condition of the coagulation system that leads to pregnancy loss.

The obtained data provide a basis for additional therapeutic and diagnostic measures related to the detection of autoimmune pathology and the use of pharmacological means aimed at preventing the pathological effect of autoantibodies that leads to pregnancy termination. In complex therapy of this pathology, you can include immunoglobulins, antiplatelet agents and coagulation regulators that improve blood microcirculation - low-molecular-weight heparin.

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