

## IMPACT OF VACCINATION OF PREGNANT WOMEN WITH IMMUNOADJUVANT INFLUENZA VACCINE IN THE ANTENATAL AND EARLY POSTNATAL PERIODS OF CHILDREN' DEVELOPMENT

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### Abstract

**Background:** Assessment of vaccination safety is one of the priorities for practical health care, and especially for vaccines developed with the use of new technologies.

**Objective:** To study the parameters of physical and functional development of fetus and neuropsychic development (NPD) of children in the first 6 months of life born to mothers vaccinated against influenza during pregnancy.

**Methods:** Fetometric (ultrasound) examinations, indicators of embryogenesis (AFP, hCG, TBG), functional and morphological maturity of newborns (Apgar scale) were assessed, neurosonography and ultrasound of heart were performed. At 6 months in children main indicators of physical development were determined. Vaccination was carried out in the II and III trimesters of pregnancy using the vaccine "Grippol plus" (LLC FC "Petrovax") (I group, n=50) based on the technology of complexing antigens of influenza virus with a polymeric water-soluble high-molecular immunoadjuvant (Polyoxidonium). This allows to reduce the content of hemagglutinin (HA) of each strain in the vaccine by 3 times (up to 5 µg) compared with the subunit non-adjuvanted analogue Agrippal S1 (II group, n=48), placebo group (III group, n=41).

**Results:** It has been shown that immunization of pregnant women has not caused changes in the fetometric parameters of intrauterine development, fetoplacental system, functioning of trophoblast. Fetus development hasn't differed from those in placebo group. The number of children with Apgar scores of 8-9 points met with a similar frequency in groups I(87.5%), II(80.9%) and III(94.3%). Indicators of NPD in children of the first 6 months from vaccinated mothers did not differ significantly from those obtained in placebo-controlled infants and amounted to 83.3%(I gr.), 78.6%(II gr.) and 77.1%(III gr.) ( $p>0.05$ ).

**Conclusion:** Administration of the immunoadjuvant vaccine to pregnant women does not cause disturbances in their metabolic homeostasis, hormonal profile, as in physical and neuropsychic development in children during the first 6 months of life.

### Biography

Mikhail Kostinov on the basis of large-scale researches devoted to the creation of highly effective vaccination technologies against infectious diseases of people from various risk groups, developed a system for managing the practical skills of medical personnel, that was presented at scientific and practical conferences and various information media resources, and made it possible to solve the tasks of vaccine prophylaxis in the framework of the National Immunization Schedule. He created and developed an innovative approach to the use of vaccination in obstetrics, substantiating in detail and demonstrating the safety of immunization of pregnant women against influenza, which was reflected in the National Immunization Schedule approved in 2014. He was the first to reveal molecular and cellular mechanisms of action of the immunoadjuvant influenza vaccine, that was later reflected in the International Guidelines for the Assessment of the Safety and Immunogenicity of Influenza Vaccines (2019). He tested and proved the effectiveness of the vaccine mock-up as the basis for future "anti-pandemic" influenza vaccines. Scientifically substantiated and developed a program of sequential vaccination against pneumococcal infection to provide prolonged protection and improve the quality of life of patients with comorbid diseases using conjugate and polysaccharide vaccines (international study). For the first time, he raised the issue of the need to reorganize the adult vaccination system in Russia and developed a new immunization tactic to support the health of the nation. During the SARS-COV-2 pandemic, conducted research to find modern approaches to non-specific prevention and rehabilitation of patients who have undergone COVID-19.