

SPECIFIC AND NOSPECIFIC INDICATORS OF IMMUNITY IN CHILDREN VACCINATED AGAINST THE EPIDEMIC PAROTITIS

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Currently, vaccination is considered by the world community as the most economical and affordable means of fighting infections and a way to achieve active longevity for all social groups in developed and developing countries. For some infectious diseases, immunization is the main and leading preventive measure due to the nature of the mechanism of transmission of infection and the persistent nature of post-infectious immunity. First of all, it concerns respiratory tract infections. The accumulated data strongly suggests that the risk of adverse reactions to the introduction of modern vaccines is disproportionately lower than the risk of developing the corresponding infection. However, vaccination is one of the activities that require significant material costs, since it provides for coverage of the general population with vaccines. In this regard, it is important to have a proper understanding of the effectiveness of immunization. The state of vaccine prophylaxis is assessed according to three groups of criteria: indicators of documented immunity (vaccination coverage), indicators of immunological or clinical efficacy and indicators of epidemiological or field efficacy. Immunoprophylaxis is known to be the leading measure in the prevention of airborne infections.

Key words: vaccine prophylaxis, mumps vaccine, hypervaccinated, immunological.

СПЕЦИФИЧЕСКИЕ И НЕСПЕЦИФИЧЕСКИЕ ПОКАЗАТЕЛИ ИММУНИТЕТА У ДЕТЕЙ ВАКЦИНИРОВАННЫХ ПРОТИВ ЭПИДЕМИЧЕСКОГО ПАРОТИТА

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В настоящее время вакцинация рассматривается мировым сообществом как наиболее экономичное и доступное средство борьбы с инфекциями и способ достижения активного долголетия для всех социальных слоев населения развитых и развивающихся стран. Для некоторых инфекционных болезней иммунизация является основной и ведущей мерой профилактики в силу особенностей механизма передачи инфекции и стойкого характера постинфекционного иммунитета. В первую очередь это касается инфекций дыхательных путей. Накопленные данные убедительно свидетельствуют о том, что риск неблагоприятных реакций на введение современных вакцин несоизмеримо ниже, чем риск развития соответствующей инфекции. Вместе с тем вакцинация относится к числу мероприятий, требующих значительных материальных затрат, поскольку предусматривает охват прививками широкие слои населения. В связи с этим важно иметь правильное представление об эффективности иммунизации. Состояние вакцинопрофилактики оценивается по трем группам критериев: показатели документированной привитости (охват прививками), показатели иммунологической или клинической эффективности и показатели эпидемиологической или полевой эффективности. Иммунопрофилактика, как известно, является ведущим мероприятием в профилактике воздушно-капельных инфекций.

Ключевые слова: вакцинопрофилактики, паротитной вакцины, гипервакцинированный, иммунологический.

EPIDEMIK PAROTITIZGA QARSHI VAKSINATSIZ BOLALARNING IJTIMOYIY VA NOSPECIFIK KO'RSATMALARI

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Hozirgi vaqtda vaksinatziya dunyo hamjamiyati tomonidan infeksiyalarga qarshi kurashning eng iqtisodiy va arzon vositasi va rivojlangan va rivojlanayotgan mamlakatlardagi barcha ijtimoiy guruhlar uchun faol umr ko'rish usullari sifatida ko'rib chiqilmoqda.

Ba'zi yuqumli kasalliklar uchun immunizatsiya asosiy va etakchi profilaktika chorasidir, chunki bu infeksiyani yuqtirish mexanizmining tabiati va infeksiyadan keyingi immunitetning doimiy xususiyati hisoblanadi. Avvalo, bu nafas olish yo'llari infeksiyalariga taalluqlidir. To'plangan ma'lumotlar zamonaviy vaktsinalarni kiritishda salbiy reaksiyalar xavfi tegishli infeksiyani rivojlanish xavfiga nisbatan mutanosib emasligini qat'iy tasdiqlaydi. Ammo, emlash bu katta moddiy xarajatlarni talab qiladigan tadbirlardan biridir, chunki u keng aholini vaktsinalar bilan qamrab olishni ta'minlaydi. Shu munosabat bilan emlashning samaradorligi to'g'risida to'g'ri tushunchaga ega bo'lish juda muhimdir. Vaksinatziya profilaktikasi holati uchta mezon bo'yicha baholalanadi: hujjatlashtirilgan immunitet ko'rsatkichlari (emlash qamrovi), immunologik yoki klinik samaradorlik ko'rsatkichlari va epidemiologik yoki dala samaradorligi ko'rsatkichlari. Immunoprofilaksi havo orqali yuqadigan infeksiyalarning oldini olish bo'yicha etakchi tadbir ekanligi ma'lum.

Kalit so'zlar: emlash profilaktikasi, tepki vaksinasi, gipertenziv, immunologik.

Introduction

In recent years, the situation of these diseases in Uzbekistan has also been tense. Regarding mumps, WHO also recommends a second vaccination at 6 years of age (in Russia, Uzbekistan) and, where possible, vaccinates school children who received less than 2 doses of mumps vaccine. This will prevent the occurrence of thousands of mumps complications, which occur frequently among adolescents, including orchitis and infertility.

It has been reported in the literature that mumps outbreaks occur in people who have been vaccinated against the mumps mumps virus strain [5-6]. If the level of protection for a given infection's immunological parameters is known, the immunological activity of the vaccine can reflect its preventive efficacy. The protection level of the antibody is preset in the one-way drug experiment. For each infection, determine the titer of protective antibodies: for measles, mumps and influenza, RPGA is 1:10, tetanus-1:20, diphtheria-1:40; pertussis-0.03 MK/ml, B Hepatitis -0.01 IU/ml, for infections with uncertain levels of antibody protection by enzyme-linked immunosorbent assay, etc., it is necessary to test the preventive effect of the vaccine based on the incidence of such infections. When evaluating the vaccination process of children who have complications after vaccination and have vaccination methods, they should also be used in people with unknown vaccination history.

It should also be pointed out that vaccination is a very cost-effective measure. According to data from experts from the US Centers for Infectious Disease Control, the dollar invested in measles vaccination can make a profit of \$11.9, immunization against polio-\$10.3, mumps-\$6.7 As we all know, today US \$1 is invested for rubella vaccination, and now US \$7.7 is used to fight this disease. If travaxetine (measles-rubella-mumps) is used, the economic benefit will double.

Purpose of the study: Studying the state of immunity in children vaccinated with mumps.

Materials and research methods

We examined 30 children who received vaccination according to plan and 30 children according to an individual plan aged 1 to 3 years, of the same age and gender. All children underwent studies of indicators of the cellular link of immunity using monoclonal antibodies of the ICO series to differentiated antigens CD3b, CB4, CD8, CD16, CD72, the content of immunoglobulins A, M, G according to the Mancini method.

Results and discussion

A study was conducted to study the parameters of the immune system in 2 groups of children of the same age and gender. In order to identify the relationship of group 1 who received vaccination according to plan with immunological parameters in children of group 2 who received vaccination according to an individual schedule, the average values of each parameter were compared. General variable immune deficiency was diagnosed in 30 children. Immunological disorders were characterized by a persistent decrease in the total concentration of immunoglobulins in blood serum below 300 mg/dl, including IgG <250 mg/dl, and normal or moderately reduced B-cell levels in some patients B-cells were absent.

The manifestation of the disease was observed in children of both sexes. Repeated bronchopulmonary infections (100%), ENT infections (100%), gastroenterocolitis (28% 0, purulent soft tissue infections 939%), conjunctivitis (285), tonsillitis (17%) predominated in the clinical picture.

As can be seen from the data presented, in children who received according to an individual plan, the content of T-lymphocytes (CD3) was lower than in children who received vaccination according to the plan. A decrease in the content of T-lymphocytes was noted due to a decrease in immunoregulatory subpopulations of T-helpers and T-suppressors. In 85.7% of children who received vaccination according to an individual plan, a decrease in T-suppressors expressing CD8 receptors was found to be significantly lower than in children receiving vaccination according to the plan, which averaged $16.7 \pm 1.8\%$ ($P < 0.05$). A decrease in T-suppressors indicated a weakening of the control of the immune response. The ratio of CD4/CD8 cells (immunoregulatory index) in 56.2% of children receiving vaccination according to an individual plan was recorded increased, and on average for the whole group due to an equivalent decrease in T-helpers and T-suppressors did not differ from the indicators of children receiving vaccination according to the plan. In children who received vaccination according to an individual plan, a decrease in the number of CD3 T-lymphocytes circulating in the blood $57.8 \pm 5.2\%$, an imbalance of immunoregulatory subpopulations, indicates the development of secondary immunodeficiency. From the B-link of immunity in children receiving vaccination according to an individual plan, an increase in CD72 B-lymphocytes was observed. An increase in immunoglobulins G and A was noted. The level of IgG (1126 ± 29) ($p < 0.05$) significantly exceeded the performance of children receiving vaccination according to the plan, and the concentration of IgA (190 ± 12.0) ($p < 0.05$) was detected increased in half of the examined children who received vaccination according to an individual plan. The general tendency to IgG growth reflects the orientation of humoral immunity.

A growing class of immunocompetent adhesives, which carries out a killer function, is attracting increasing attention of researchers. We are talking about natural killer cells - NK cells- (CD16 + lymphocytes).

All children receiving vaccination according to an individual schedule showed an increase in the number of natural killers ($p < 0.001$), which is evidence of the high activity of the defense mechanisms. Our studies showed that even before vaccination, children are accompanied by a significant quantitative decrease in the peripheral blood of the total pool of T-lymphocytes, immunoregulatory T-subpopulations: T-helpers/inducers and T-suppressors/ cytotoxic lymphocytes, NK-cell content, neutrophil phagocytic activity, decrease also the number of b-lymphocytes.

A study of the quantitative content of NK cells in the peripheral blood of children receiving vaccination according to the plan showed a reliable decrease, which averaged 12.6 ± 1 and children of the second group receiving vaccination according to an individual schedule, a reliable decrease with an average value of 18.6 ± 1.7 ($p < 0.001$).

When studying non-specific protection factors in children receiving vaccination according to an individual plan, there is a lack of functional activity of phagocytes (48.5 ± 3.3), which is slightly lower compared to indicators in children receiving vaccination according to the plan (58.4 ± 1.8). Deficiency of phagocytic protection was

recorded in $50.1 \pm 2.6\%$ in children who received vaccination according to an individual plan. The phagocytic reaction initiates the corresponding immune response: a decrease in the activity of the phagocytic defense naturally provides a low level of the immune response, including the humoral one, delayed assimilation products, imbalance and tolerance to autoantigens.

Thus, when studying the parameters of the immune system in 2 groups of children: 1 group receiving vaccination according to the plan and 2 groups receiving vaccination according to an individual schedule revealed immunopathological reactions - T - immunodeficiency, polyclonal activation of the B-unit of immunity with an increase in IgG, decrease in phagocytic activity moreover, more pronounced violations of the immune system were observed in the group of children who were vaccinated according to an individual schedule. It should be noted that disorders in the immune system are largely determined by the genotypic and phenotypic characteristics of the body.

Conclusions

In children vaccinated with mumps, according to an individual plan, secondary immunological deficiency is

observed with inhibition of the cell link and polyclonal activation of the humoral immunity link.

The study of the immune status in children receiving vaccination according to an individual plan dictates the need to develop effective methods of healing with the inclusion of immunocorrecting therapy in the treatment complex.

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