

Immunoprophylaxis of Children in Uzbekistan: Status and Prospects for Improvement

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Abstract:

The article presents the results of a retrospective analysis of the achievements of vaccination throughout the world and in our country. An assessment of the state of the vaccination business in the Republic of Uzbekistan was carried out. The necessity of expanding the National calendar of preventive vaccinations is substantiated. The main problems of vaccination prevention in the country are identified and proposed ways to solve them.

Keywords: vaccination, vaccine, safety and efficacy.

Introduction

Immunoprophylaxis is one of the effective measures to combat infectious diseases. Significant progress in the fight against infectious diseases is associated with vaccination, on which the prospects for the complete elimination of some infectious diseases are based. Uzbekistan has made some progress in the implementation of the Vaccination Program. Vaccination against infectious diseases is a frequent part of the complex of concerns about the health of citizens, primarily children [1, 3, 5].

Immunoprophylaxis strategy in the Republic of Uzbekistan according to general laws, WHO recommendation is convenient, persecuted and aimed at covering the population with vaccination [2, 4].

At the same time, the vast reason why many diseases manifested themselves in the world in a stable sporadic form, and some diseases that were eliminated earlier "do not return" by vaccination [3, 6, 7].

The effectiveness of vaccination in the fight against infections has been proven by many years of world experience. There is no other program in health care that would give such impressive results. Practically during the life of one generation, more than 10 severe infections were eliminated or reduced to single cases. Smallpox eradicated globally and polio eradicated from most parts of the world.

To date, immunoprophylaxis occupies one of the leading places in the implementation of anti-epidemic measures for infectious diseases. The World Health Organization's program to combat infectious diseases to reduce the incidence and eliminate them is based on immunoprophylaxis. In the Global Economic Direction Report, the World Bank recognizes that vaccination is the most effective and cost-effective preventive measure known to modern medicine. In the last decade, due to the emergence of new problems and challenges, interest in vaccine prevention has increased significantly. WHO notes that this century should be the century of vaccines, and immunization - the main strategy for prevention. Mass vaccination of children significantly reduces morbidity and mortality from infectious diseases, increases life expectancy, contributes to active aging and makes it possible to completely eradicate some anthroponotic infectious diseases on a global scale [4, 9, 17].

Infectious diseases are a group of diseases caused by the penetration of pathogenic (pathogenic) microorganisms, viruses and prions into the body [6]. Infectious diseases remain one of the main causes of child mortality in the country. This is especially true for children in the first year of life [2].

Before vaccination, the doctor must conduct a thorough analysis of the condition of the child being vaccinated, determine the presence of possible contraindications to vaccination. At the same time, it is necessary to take into account the presence of infectious diseases in the environment of the child. This is very important, since the addition of infections in the post-vaccination period can cause various complications [7]. During the first hours after vaccination, medical supervision of the child is mandatory due to the possible development of allergic reactions. It is necessary to warn the parents of the vaccinated about possible reactions after the introduction of the vaccine, recommend a hypoallergic diet and a protective regimen [13].

In kindergartens, orphanages, groups where children are gathered for supervision, as well as large families, conditions often arise for the spread of infectious diseases [12]. Outbreaks of shigellosis, salmonellosis, escherichiosis, hepatitis A and many other infections are often recorded in children's groups [8]. According to WHO experts, universal immunization at the appropriate age is the best way to prevent many infectious diseases [14].

The problem of vaccination is faced by both adults and children at some time, and the debate about the effectiveness and harmlessness has not subsided so far. In recent years, there has been an ambiguous attitude towards vaccinations. Despite the fact that modern vaccines provide a high level of protection against a greater number of diseases, the number of those who refuse mandatory vaccinations is not thinning [13]. Most of the anti-vaccination arguments are based on theories that have nothing to do with the scientific basis, or are incorrect and deliberately distorted interpretations of

the scientific literature. However, on the part of official medicine, many facts of complications after vaccination are silent. Therefore, it is important to have an idea about the main properties of vaccines and the impact of vaccination on the human body [15].

One of the important problems of vaccination is the issue of refusal to vaccinate. Many researchers around the world are puzzled by studying the reasons for refusal to vaccinate children [10]. A. Gesser-Edelsburg also notes the lack of parental confidence in the healthcare system as the main factors for refusal to vaccinate [11]. In his study, D. Curran found that the average delay in pertussis vaccination ranged from 16.3 to 43.9 days, which led to an increase in the incidence. If the children had received the vaccine on time, 513 cases of whooping cough could have been avoided [19]. The situation with vaccination in Uzbekistan, as well as throughout the world, shows an increase in cases of refusal to vaccinate [5]. Some studies have shown that with high vaccination coverage, the incidence of whooping cough increased. The authors attribute this to the difference in vaccine strains circulating in the study area [18]. Problems of the reasons for refusal of vaccination have not been studied enough. The purpose of the analysis of literary sources was to study the attitude to vaccination and the main factors of parents' refusal to vaccinate the child population [16].

There is indeed a risk of adverse effects on human health and life due to vaccination. Practice shows the presence of a large number of deaths after vaccinations, which causes considerable public outcry [21]. The population expresses an extremely negative attitude towards the fact that vaccination in our country, although not officially mandatory for the entire population without exception, is, in fact, necessary in order to avoid a number of formal and organizational problems [16].

Sometimes it can be concluded that the probability of contracting certain diseases is actually a huge number of times less than the probability of negative consequences [19]. Some people refuse vaccinations, once faced with their negative consequences. Someone does this after getting acquainted with a sufficient amount of information that they received from acquaintances, from the media, scientific sources, Internet resources, etc. In addition, some citizens are simply exposed to public opinion [20].

Immunization of children, which is known to be controlled by parents, requires great attention. Consequently, adults with children have a dual responsibility in the context of vaccination: they make decisions not only about themselves, but also about their children - until the children reach adulthood [2].

The success of immunoprophylaxis, which made it possible to eradicate smallpox and control many severe infections, primarily in childhood, is undeniable [5]. The growing awareness of its role is evidenced by the high vaccination coverage figures. Evidence

of confidence in immunoprophylaxis is the keen interest shown around the world in the development of a vaccine against avian influenza [3].

It is important to improve the safety and effectiveness of existing vaccines to improve production technology according to the rules of good manufacturing practice (GMP), modernize enterprises, localize production on the territory of the Republic of Uzbekistan, and transfer technologies.

Assistance in the successful solution of all these problems can be provided by the Advisory Committee on Immunization, which should include experts in leading areas of vaccinology and immunoprophylaxis. Such committees exist in almost all major countries. The organizational foundations of the vaccination business also require improvement. The elimination of a number of infections and the reduction of the incidence to sporadic cases, as shown by many years of experience in the fight against infectious diseases, is determined by the level of coverage of the population with preventive vaccinations. It is known that a preventive effect on morbidity is achieved with a coverage of 95–98% [11].

The coverage of newborns with vaccinations against hepatitis B and tuberculosis in the maternity hospital is decreasing. At the same time, the consequences of this process are very dramatic. Thus, every second child infected with HBV at the age of less than one year develops chronic HBV with a high risk of developing cirrhosis and liver cancer. The level of HbsAg seropositivity in children vaccinated later than 7 days after birth is more than 3 times higher than that in children vaccinated at the maternity hospital [18].

Legislation in the field of vaccine prevention and protection of children's health. At present, the National Immunization Calendar has been approved by the Law on Immunoprophylaxis of the Republic of Uzbekistan. Ensuring immunization according to the National calendar is the prerogative of the state [1, 3, 6]. In recent years, a significant number of new vaccine preparations have appeared that have made it possible to specifically prevent pneumonia, otitis media, meningitis, intestinal infections, chickenpox, cervical cancer, etc. At least 10 new vaccines are at the final stages of clinical trials, including vaccines against cancer, tuberculosis, herpes infection, malaria. Multi-antigen pediatric combinations have been developed and successfully used, which have simplified vaccination programs and made it safer. Unfortunately, the emergence of new vaccines is accompanied by a significant increase in their cost. In the context of a limited budget for healthcare and vaccine prevention, the state cannot ensure the widespread introduction of new vaccines into healthcare practice. The position of the state in relation to new vaccines and additional vaccination programs has not yet been determined. This affects the realization of the right of a

citizen to be informed about the risk of infectious diseases and the possibilities for their prevention [21, 22].

In most European countries and the United States, Advisory Bodies/Councils of Experts in the field of vaccination have been established and are functioning successfully. The purpose of these expert organizations is to study the feasibility of introducing new vaccines into practice and determine the breadth of their use, optimize vaccination schedules, monitor the safety of vaccines, form public opinion in favor of vaccination, conduct educational programs, etc. In addition, these organizations conduct independent pharmacoeconomic studies, which determine the economic feasibility of mass vaccination programs and the optimal cost of vaccines. Based on the analysis of epidemiological, immunological and economic efficiency, it has been established that the basis for the fight against infectious diseases with various transmission mechanisms is immunoprophylaxis.

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