

VACCINATION AND CONTRAINDICATIONS BASED ON THE NATIONAL IMMUNIZATION CALENDAR AND THEIR BASIS

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Abstract. *In the early 1980s, the World Health Organization (WHO) recommended that mild fever, mild respiratory infections or diarrhea, and other minor illnesses should not be considered contraindications to vaccination, noting that contraindications had a significant impact on vaccination coverage [1]. In studies, the most common contraindications to vaccination are cough, fever, and taking medications. In fact, fever, cough, and taking many medications are not grounds for stopping vaccination according to the guidelines. A study in the Czech Republic showed that the proportion of children with contraindications to vaccination is increasing over time, and the problem of complete vaccination of children is emerging [2, 3].*

Keywords: *immunization, vaccination, vaccine, immunity regime, immune response.*

Contraindication to vaccination refers to situations in which the possibility or risk of adverse reactions arising from the use of vaccines, as well as negative effects of vaccines on human immunity, may increase [4]. The decision on non-applicability is mainly based on the specification of product characteristics (SPC) and also relies on the clinical experience of the physician in assessing the excess risk. Therefore, the level of vaccination contraindications often varies between countries and over time.

Studies have shown that among doctors of public institutions, doctors and nurses of private clinics, the percentage of those who gave correct answers to the questions about vaccination instructions was 55-73% [5]. This indicator of the vaccination doctor conducted in China was 56% [6]. Even for the same vaccine, there is clear disagreement between pediatricians, general practitioners, and vaccinators regarding contraindications [7].

The results of a series of studies confirm that health workers have formed wrong anti-vaccination instructions, such as "a sick child should not be vaccinated", "multiple vaccinations are not allowed in one visit", "a baby with low weight should not be vaccinated". Surveys of health workers show that on average only 64% of respondents were able to correctly answer questions about the vaccination schedule and contraindications [8].

Undoubtedly, the knowledge of health workers has an impact on the rational vaccination [9, 10]. According to experts' estimates, in several studies, about 13% of contraindications lead to the loss of the opportunity for general vaccination. The fact that the presence of symptoms of common minor diseases such as cough, cold without fever, supportive medication, mild diarrhea is considered as contraindications to vaccination, and similar results have been reported in a number of literatures [11, 12].

In many cases, eczema was considered a contraindication to vaccination by vaccinators for measles vaccination. A cohort study reported a 6.7% prevalence of eczema among children aged 0–17 months, resulting in deaths from the disease due to lack of vaccination [13]. The Centers for

Disease Control and Prevention's 2009 Advisory Committee on Immunization Practices expanded recommendations for influenza vaccination for school-age children.

A systematic review of studies focusing on determinants of positive parental attitudes toward school-based influenza vaccination and barriers to vaccination in the United States from 1990 to 2016. First, when considering positive attitudes toward vaccination: availability of immunization free or at low cost; belief in vaccine efficacy, influenza severity, and susceptibility; belief that the benefits of vaccination are important, and social discipline; considering the benefits of organizing immunization at school as reasonable; confidence; and parental involvement during the vaccination process have been found to be factors. Barriers to vaccination include; problems related to vaccine safety, effectiveness, lack of equipment, adverse effects of post-vaccination complications; adverse medical advice; distrust of vaccines and school-based immunization programs; and included issues related to the privacy of health information.

In the United States, parental attitudes toward influenza vaccination were as follows: Cost - parents were willing to participate in vaccination if there were no additional out-of-pocket costs [14]. Free or low-cost vaccines significantly facilitated parental acceptance [15], but this factor was less important compared to other factors [16]. Vaccine efficacy—parents with high confidence in vaccine efficacy agreed to participate in vaccination [17].

Vaccine Benefits—Parents who perceive the disease-protective benefits of the flu shot to be high are more likely to get vaccinated, along with a stronger belief in vaccination as a social norm. Parents who consider it convenient to carry out vaccination in educational institutions were also easier to accept vaccination [18, 19, 20, 21].

Parental involvement during vaccination—a flexible vaccination schedule, such as evenings or weekends, allowing parents to accompany children increases the chance of vaccination participation [15]. A positive discussion of influenza vaccination with a health care provider and trust in the health care provider's expertise and competence can increase parental consent and participation [14]. Adverse effects—parents concerned about vaccine side effects are less likely to consent to vaccination [19] and may believe that live attenuated influenza vaccine has adverse effects. Fear of getting the flu after getting the vaccine also makes people less willing to get the vaccine [7].

Parental resistance to the implementation of the vaccination process at school is related to the delivery of the vaccine to the school, acceptance, the competence of the person delivering the vaccine, the long logistical process [29], the disorganization of the school [21], and the inability to solve possible medical problems [16]. Parental non-participation during vaccination can also form the opinion of non-vaccination [14, 19, 17, 21].

Lack of confidence in vaccines and vaccination programs—Parents who expressed doubts about the flu vaccine or school-based vaccination program were found to prefer to have their children vaccinated through primary care physicians and pharmacies or to forego the flu shot altogether. Bad news and a lack of reliable information about a pharmaceutical company producing an influenza vaccine reduce parental willingness and participation in the process [15]. In a modeling study by Weycker et al. (2005), the authors found that vaccinating 20% of children in the United States reduced the total number of influenza cases in the general population by 46%, along with a reduction in influenza-related deaths and associated economic costs [30].

Other research suggests that some of the most important issues to consider, aside from anti-vaccination guidelines, are increased parental hesitancy, lack of knowledge, religious objections,

and concerns about vaccine safety, including fears that vaccines can weaken the immune system or cause chronic disease. - remains one of the main reasons for mothers' refusal to vaccinate [32]. In addition, while the incidence of infectious diseases has decreased significantly in most regions of the world over the past 18 months, possibly due to mitigation measures aimed at reducing the spread of SARS-CoV-2, vaccination programs have simultaneously been variably suspended. However, a decrease in vaccination coverage may lead to an increase in the number of children who are immunocompromised for a particular disease and cause large epidemics in the future [31].

Conclusion

Based on the analysis of the literature devoted to the study of contraindications to vaccination, it can be said that most medical professionals overestimate or incorrectly assess contraindications. This in turn reduces childhood vaccination coverage and causes children to receive vaccinations late. The attitudes of parents to vaccination are also different, depending on the socio-economic and medical-hygienic conditions of a particular society. In order to effectively organize vaccination work, it is important to study the validity of the instructions against vaccination and the attitude of parents to vaccination.

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