



POST-VACCINATION IMMUNITY TO MEASLES IN CHILDREN WITH POST-COVID SYNDROME LITERATURE REVIEW (2ND PART)

Ministry of Health of the Republic of Uzbekistan
Tashkent Medical Academy Termez branch
Dilorom Toshtemirovna Kenzhaeva

Article history:	Abstract:
Received: February 11 th 2025 Accepted: March 10 th 2025	Measles is a highly contagious viral disease that has significantly decreased in prevalence over recent decades due to vaccination. However, in recent years, the situation with measles has worsened again in a number of countries, particularly in the context of the COVID-19 pandemic. The COVID-19 pandemic and the associated restrictions have limited population-wide immunization coverage, which may affect the epidemiological situation of other infectious diseases, including measles. This article presents a review of several studies conducted by groups of scientists who monitored the health of children and analyzed their immune status related to measles vaccination following a coronavirus infection.

Keywords: measles, measles vaccine, post-vaccination immunity, COVID-19 pandemic, post-COVID syndrome in children, premorbid background, preventive healthcare

INTRODUCTION

In recent years, the global community has faced new challenges in the field of healthcare, including the emergence of novel infectious diseases such as COVID-19, as well as issues related to vaccination. Amid the global coronavirus pandemic, particular attention has been paid to studying its characteristics in children, as well as to the prevention of infectious diseases such as hepatitis B, measles, and mumps. This article presents a review of three relevant studies: the first by Artyom Aleksandrovich Babkin, which focuses on the comparative characteristics of COVID-19 in children aged 7–14; the second by Irina Leonidovna Solovyova, which examines the vaccination process and the effectiveness of vaccination in children with altered premorbid backgrounds; and the third by Tatyana Anatolyevna Semenenko and Anna Valeryevna Nozdracheva, which analyzes and forecasts the development of the epidemiological situation regarding measles during the COVID-19 pandemic. This review discusses three independent articles, each presented separately and containing its own key findings and conclusions. At the end of the review, a comparative analysis of the articles is provided along with a general conclusion encompassing all three studies.

[Review of the work of Artem Aleksandrovich Babkin "Comparative characteristics and prognostic factors of the course of a new coronavirus infection in children aged 7-14 years"](#)

Main provisions of the article. Babkin's work is devoted to a comparative analysis of the course of the new coronavirus infection in children aged 7 to 14 years. The author focuses on the characteristics of the clinical picture of COVID-19 in this age group, identifies prognostic factors influencing the course of the disease, and examines the impact of concomitant diseases on the outcome of coronavirus infection.

Methodology. Babkin uses a comparative method, analyzing data on the clinical manifestations of COVID-19 in children, taking into account a number of parameters, such as age, gender, the presence of concomitant diseases, etc. The study is based on clinical observations collected in various medical institutions, which ensures greater reliability of the results.

Main results. According to Babkin, the course of COVID-19 in children 7-14 years old has its own characteristics. Unlike adults, children often suffer from the disease in a milder form. However, the presence of concomitant diseases (for example, allergic diseases, diseases of the cardiovascular system and others) significantly worsens the prognosis and can lead to more severe forms of the disease.

Predictive factors. One of the key points of the study is the identification of prognostic factors that influence the course of COVID-19. Babkin identifies factors such as: **Age:** Older children (12-14 years old) have a higher likelihood of developing complications. **Gender:** Differences in the course of the disease are observed in boys and girls. **Associated diseases:** The presence of chronic diseases significantly increases the risk of severe infection.



CONCLUSIONS. Babkin's work highlights the importance of clinical follow-up and identification of prognostic factors for more effective treatment and prevention of COVID-19 in children. The author concludes that it is necessary to develop specific approaches to the diagnosis and treatment of coronavirus infection in this age group.

Review of the work of Irina Leonidovna Solovyova "Features of the vaccination process and ways to increase the effectiveness of vaccination against hepatitis B, measles, mumps in children with altered premorbid background"

Main provisions of the article. Solovyova's work is devoted to studying the features of the vaccination process and increasing the effectiveness of vaccination against hepatitis B, measles and mumps in children with altered premorbid background. In the face of changes in the epidemiological situation associated with COVID-19, the issue of vaccination becomes especially relevant.

Methodology. Solovyova takes a comprehensive approach, including analysis of vaccination data, study of the premorbid background of children and the effectiveness of existing vaccines. The work is based on a multivariate analysis, which allows a more accurate assessment of the influence of various factors on the effectiveness of vaccination.

Main results. In her work, Solovyova comes to the conclusion that children with altered premorbid background (for example, those with allergic diseases, neurodeveloping disorders) require a special approach to vaccination. In the case of such children, it is necessary: **An individual approach.** Assessment of the health status of each child before vaccination.

Modulation of the immune response: Administration of vaccines in accordance with the altered immune status of children. **Improving parental awareness:** Educating parents about possible reactions and necessary measures after vaccination.

Ways to improve vaccination effectiveness. Solovyova also suggests several strategies to improve the effectiveness of the vaccine process:

1. Carrying out preliminary diagnostics: This will make it possible to identify children with a high risk of complications after vaccination in advance.

2. Training of medical personnel: Advanced training of doctors working with children with altered premorbid background.

3. Development of new vaccines: Working to create vaccines that may be more effective for immunocompromised children.

Conclusions. Solovyova's work emphasizes the need for an individual approach to vaccinating children with altered premorbid backgrounds and the need to improve the skills of medical personnel to ensure effective vaccination. It also focuses on the importance of informing parents about vaccination.

Review of the work of Tatyana Anatolyevna Semenenko and Anna Valerievna Nozdracheva "Analysis and prospects for the development of the measles epidemic situation in the context of the COVID-19 pandemic."

In the article, authors T. A. Semenenko and A. V. Nozdracheva examine in detail the impact that the pandemic had on measles incidence, as well as the strategies needed to combat the disease. This article examined the characteristics of measles infection, the impact of the COVID-19 pandemic on the level of measles vaccination, and the authors also identified key problems and proposed solutions with prospects for the future.

Features of measles and its impact on health

Measles is a highly infectious viral disease that is acute and can lead to serious complications, including pneumonia and encephalitis. Despite the availability of an effective vaccine, which has been used since the 1960s, the incidence of measles in some regions of the world remains alarming.

Amid the COVID-19 pandemic, many countries are experiencing a decline in measles vaccination, posing the threat of future outbreaks. Amid the limitations and medical changes associated with the deadly virus, public health issues have generally come under threat.

Impact of the COVID-19 pandemic on vaccination rates

One of the key aspects addressed in the paper is the reduction of vaccination rates. There are numerous reasons for this phenomenon, including the closure of clinics, fear of coronavirus infection, and changes in the distribution of medical resources.

According to the authors, in some regions the number of measles vaccinations has dropped to a historical low. This has created a "population space" for the spread of the virus, and if outbreaks occur, the incidence rate could increase sharply.

Current epidemiological situation for measles



The article analyzes in detail data on the incidence of measles before the pandemic and during it. The authors note that despite global efforts to eliminate measles, some countries are experiencing alarming trends. In particular, high incidence rates are observed in countries with insufficient vaccination coverage, both among children and adults.

For example, in 2019 and 2020, there were sharp outbreaks in countries such as Ukraine, Yemen and Madagascar. This confirmed the assumption that problems with vaccination will only get worse during the pandemic.

Problems in the healthcare system

One of the main conclusions of the authors is that the healthcare system was not ready to cope with two simultaneously operating epidemics. Medical facilities are overloaded and priorities are shifted. As a result, patients with other diseases, including measles, may be left without necessary medical services.

Strategies to combat measles in a pandemic

Semenenko and Nozdracheva propose a number of recommendations and strategies aimed at improving the measles situation in the current global pandemic.

Improving access to vaccination: Safe conditions for vaccination must be created while using existing health systems. **Education programmes for the population:** awareness-raising work on the importance of vaccination should be a priority at the level of local and state bodies. **Integration of efforts between different departments:** coordination between the various institutions responsible for health care is important to effectively combat epidemics.

Conclusions. The outlook for measles in a pandemic requires an integrated approach. The article highlights the need to use existing vaccination and intervention platforms to minimize damage. Using technology - digital solutions can help improve vaccination awareness and remote service delivery. Funding and resources - additional sources of funding need to be allocated to support vaccination programs. Cooperation at the international level - sharing information and best practices at the global level will help improve the planning and implementation of anti-epidemic activities.

COMPARATIVE ANALYSIS OF ARTICLES

All three articles explore important aspects of children's health in the context of new infectious diseases and vaccine prevention. Despite their differences in themes, they share the need for a whole approach to treatment and prevention.

1.Relevance of research: All three studies raise pressing issues that require medical attention, especially in light of the COVID-19 pandemic.

2.Methodological approach: All authors use a variety of methodological approaches, which allows them to develop clinical knowledge in this area.

3.Recommendations for an individual approach: Both Babkin and Solovyova emphasize the importance of attention to the individual characteristics of children, which makes their work relevant for pediatric practice. Semenenko and Nozdracheva, analyzing the current state, propose an integrated approach to solving the problem, which can help avoid measles outbreaks in children in the future.

CONCLUSION

The works of Artyom Aleksandrovich Babkin and Irina Leonidovna Solovyova represent a valuable contribution to the study of current issues of modern pediatrics. Research focuses on the need for an integrated approach to the treatment and prevention of infectious diseases in children, which is of great importance in the context of global changes in the healthcare sector. The articles reviewed highlight the importance of investigating both the course of infectious diseases and vaccination issues, which can have a significant impact on the health of future generations. The work of Tatyana Anatolyevna Semenenko and Anna Valerievna Nozdracheva is also an important contribution to understanding the measles epidemic situation in the context of the COVID-19 pandemic. The key aspects remain a return to vaccination, educational campaigns, integration of the efforts of different departments and the use of new technologies. In a global context, it is very important to maintain attention to diseases such as measles in order to minimize their impact on public health.

Thus, attention to measles as a disease, especially in the face of global challenges such as the COVID-19 pandemic, is necessary. In anticipation of challenges in the healthcare sector, it is important to ensure the protection of the population from infectious diseases, primarily through vaccination and preventive measures.

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