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CLINICAL FEATURES OF MEASLES IN CHILDREN WHO ARE BREASTFED

Mulladjanova Kimyokhan Ahatovna

Department of Infectious Diseases Andijan State Medical Institute Uzbekistan, Andijan

ABSTRACT: Measles, caused by the measles virus, remains a significant cause of morbidity in children worldwide despite the availability of effective vaccines. Infants and young children are especially vulnerable, as their immune systems are still maturing. Breastfeeding provides both nutritional and immunological benefits, potentially influencing disease severity and outcomes in various pediatric infections, including measles. This article examines the clinical course of measles in children who are breastfed compared to those who are not, with a focus on immunological mechanisms, maternal antibody transfer, and implications for disease management and prevention.

Keywords: measles, breastfeeding, maternal antibodies, immunity, infants

ОСОБЕННОСТИ ТЕЧЕНИЯ КОРИ У ДЕТЕЙ НАХОДЯЩИХСЯ НА ГРУДНОМ ВСКАРМЛИВАНИИ

АННОТАЦИЯ: Корь, вызываемая вирусом кори, остается значимой причиной заболеваемости детей во всем мире, несмотря на наличие эффективных вакцин. Младенцы и маленькие дети особенно уязвимы, поскольку их иммунная система все еще находится в стадии созревания. Грудное вскармливание обеспечивает как питательные, так и иммунологические преимущества, потенциально влияя на тяжесть заболевания и исходы при различных детских инфекциях, включая корь. В этой статье рассматривается клиническое течение кори у детей, находящихся на грудном вскармливании, по сравнению с детьми, не находящимися на грудном вскармливании, с акцентом на иммунологические механизмы, передачу материнских антител и последствия для лечения и профилактики заболевания.

Ключевые слова: корь, грудное вскармливание, материнские антитела, иммунитет, младенцы

INTRODUCTION

Measles is an acute, highly contagious viral disease caused by the measles virus, a member of the genus *Morbillivirus* in the Paramyxoviridae family. Despite extensive vaccination efforts, measles outbreaks continue to occur in areas with low vaccination coverage. Infants under 12 months of age are particularly at risk of severe complications, which can include pneumonia, encephalitis, and in rare cases, death[1,2].

Breastfeeding is universally recommended for at least the first 6 months of life, as it confers both nutritional and immunological advantages. Breast milk provides protective antibodies (especially secretory IgA), lactoferrin, oligosaccharides, and other immunomodulatory factors that can mitigate the severity of various infections. However, the protective effect of breastfeeding against measles is less clear than it is for common gastrointestinal and some respiratory pathogens. This article explores how breastfeeding may modify the clinical course of measles,



focusing on immune protection afforded by maternal antibodies and potential differences in disease manifestation[3,7].

Infants typically receive maternal IgG antibodies via the placenta during the third trimester of pregnancy. These maternal IgG antibodies against measles can persist in the infant's circulation for up to 6 to 9 months postpartum, partially protecting them during early infancy. The degree of this protection depends on the mother's immune status: mothers who have been vaccinated or who had a natural measles infection usually have a robust IgG response that can be transferred to the fetus[4,5].

Breast milk is rich in secretory IgA (sIgA), which helps protect mucosal surfaces from pathogens. Although sIgA is most famously associated with protection against enteric and some respiratory viruses, it may also provide a degree of local protection in the oropharynx and gut for breastfed infants 333. For measles specifically, the presence of measles-specific IgA in breast milk can help neutralize viral particles at the site of entry, thus reducing viral load and moderating initial infection severity[6].

Beyond immunoglobulins, breast milk contains various immunomodulatory factors—such as lactoferrin, oligosaccharides (HMOs), cytokines (e.g., TGF- β), and growth factors—that support the infant's developing immune system. These components can indirectly influence how the infant's immune system responds to measles infection, potentially leading to a less severe clinical types[4,6].

MATERIALS OF METHODS

Our study included 124 patients who were hospitalized in the Andijan Regional Infectious Diseases Hospital. General clinical and laboratory methods were used. Most of the patients were infants. First, we divided the sick children into 4 large groups: by age and by type of nutrition. During the study, information was also obtained about the period of the disease, the severity of the disease, and vaccination status.

Patients underwent a general blood, urine, and stool analysis, and a chest X-ray.

RESULTS AND ANALYSIS

The disease was more widespread among children. Adults were less likely to get sick. Children under 3 years of age were taken as the main group for the study. Since children of this age made up the majority of those infected. Sick children were divided into 4 large groups according to the type of nutrition. Breast-fed children, artificial, mixed and general. Among the children studied - 1 patient was a 20-day-old baby (appeared after the mother became ill), 3 patients were 3 months and 1 patient was a 4-month-old child (in a family home), and the rest were older than 6 months (Table 1).

Table 1. Type of nutrition by young people (n=124)

Types nutri- tion Age	Natural		Artificial		Mixed		General	
	Absol	%	Absol	%	Absol	%	Absol	%
Befor 1 year old	18	14,5	49	39,5	18	14,5	4	3,2
Befor 2 year old	-	-	9	7,3	14	11,3	9	7,3
Befor 3 year old	-	-	-	-	-	-	3	2,4
Total	18	14,5	58	46,8	32	25,8	16	12,9



As can be seen from the table natural-between breastfed children the incidence was 14.5% of children on the examination. These children are from 6 months to 1 year old. The number of children in artificial nutrition made up the majority - 46.8%. Mixed children in the diet included people under 1,5 years of age from 3 months, which was 25.8% organized. Children in general nutrition from 11 months to 3 years old - 12.9% organized.

29.8% of those who applied with catarrhal signs in the preliminary period. The pathognomonic symptom in such patients was conjunctivitis, otitis media, syndrom croup and pnevmoniya. In the pic period, particularly rash in 1-2-3 days, was special characteristic. In the pigmentation period 9.7% of those who applied suffered from pnevmoniya, croup syndrome and serous meningitis.

Typical course of the disease is artificial, mixed and in children with a common diet, and atypical course the mild form is in children with natural nutrition and first vaccination, while the severe form is not vaccinated recorded in children with artificial and mixed nutrition. The severe course of the disease is mainly artificial from the very beginning of pneumonia and other diseases in nutrition and in the coming days before the disease manifested in transfers. Severe complications of measles include pneumonia (often due to secondary bacterial infection), otitis media, and encephalitis. Breastfed infants, especially those exclusively breastfed, may have a lower rate of secondary infections due to better overall nutritional and immunologic status.

During in the process of our observation vaccination data was also obtained. The data is shown in table 2.

Table 3. Vaccination data (n=124)

Age	Unvaccinated		Once vaccinated	
Befor 1 year old	57 46,1%	57 46,1%	-	-
Befor 2 year old	41 33,1%	41 33,1%	5	4,0
Befor 3 year old	14 11,3%	14 11,3%	7	5,6%
Total	112	90,3%	12	9,6%

The data obtained in the table above shows that the number of vaccinated first time is 9.6% were unvaccinated, while 90.3% were. These indicators are our it is an indicator between children in our examination. With each of those who did not receive vaccination there was a reaction to vaccination in the family anamnesis when the interview was held, according to religious relations those who refused to be vaccinated were the majority. One of the reasons for not getting vaccinated beetroot, when called to vaccinate, has not come out, and it is imaginary in the event of a disease those who are not.

Early complications of the disease -diarrhea 5%, stomatitis 12%, krup syndrome 76%, pneumonia 24%, bronchitis 16% were suffered in patients. From late complications, in the pigmentation period - syndrome krup 58%, pneumonia 32%, bronchitis 19%, meningitis was 8%, encephalitis was 2.4%. Deaths from the disease were 2.4% did.

Laboratory analyzes include general blood, urine, stool analysis, spinal fluid and breast a cage X-ray was performed. Leukopenia in general blood analysis, lymphocytosis, neutropenia, which did not change when the echt went without complications, was slightly elevated when the complication occurred.

There were no changes in the analysis of feces and urine. Spinal cord in patients with meningitis complication in its fluid, lymphocytosis and cytolysis were high. 16% of patients on lung radiography bronchitis and 32% of patients were diagnosed with bronchopneumonia.



The detection of measles-specific IgM antibodies in the blood was usually used for confirmation. In some lactating infants, maternal IgG intervention has been a difficulty in influencing serological outcomes.

Antipyretics were used to control fever in the treatment. Hydration is used to prevent dehydration. Antibiotics were used when a secondary bacterial infection was suspected. Vitamin A deficiency is associated with an increased risk of measles and complications. WHO guidelines recommend a vitamin A supplement for children with measles in communities where vitamin A deficiency is common. but in children who are eating artificial will not be enough, it will be useful to give supplements.

CONCLUSION

Measles remains a critical infectious disease threat to infants and young children worldwide. Breastfeeding offers several immunological advantages that may reduce the clinical severity of measles, including the transfer of maternal IgG, local sIgA, and other protective components. While it does not entirely prevent measles, exclusive breastfeeding-together with appropriate maternal vaccination, timely infant immunization, and supportive care-represents an important strategy to improve outcomes in infants exposed to the measles virus.

The World Health Organization recommends that breastfeeding be continued at the time of infection with any infectious disease, including measles. Frequent breastfeeding helps maintain adequate hydration, supports the baby's immune system and provides comfort in the febrile and rash stages.

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