Volume 3, Issue 12, December 2025 ISSN (E): 2938-3765

CLINICAL AND EPIDEMIOLOGICAL CHARACTERISTICS OF MEASLES IN THE SAMARKAND REGION

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Abstract
Measles remains a significant public health challenge because of its extremely high contagiousness, ability to spread rapidly, and susceptibility of all age groups. International specialists emphasize that elimination of the measles virus is achievable through extensive vaccination programs. The primary contributing factors to the growing number of measles cases include gaps in vaccination coverage related to population migration, delayed identification of the disease, and the absence of timely anti-epidemic interventions.

Keywords: Measles, epidemiology, vaccination, morbidity, prevention.

Introduction

Measles is an acute infectious viral illness characterized by respiratory involvement and systemic intoxication. The importance of the disease lies in its global prevalence, high transmissibility, and the fact that individuals of all ages can be affected. According to expert assessments, the eradication of measles is realistic due to vaccination. Over the past 15 years, the global mortality rate from measles has decreased by nearly 75% as a result of large-scale immunization activities. Despite this progress, the World Health Organization notes that outbreaks of measles infection continue to be registered in different parts of the world. Measles was officially declared eliminated in the United States in 2000, and a similar goal was set in Russia for 2010. Nevertheless, WHO reports that up to 3 million measles cases still occur globally every year. At present, outbreaks are documented in 14 European countries, and 9,500 cases were confirmed in Europe in 2017. Measles can lead to serious complications involving the respiratory tract, gastrointestinal tract, and central nervous system. In some countries, measles remains an endemic disease. For example, 41,000 cases were reported in China in 2015, over 679,000 in India, and more than 10,000 cases in Pakistan, with children comprising the majority of those affected. It is noteworthy that 87% of infected individuals had never received measles vaccination. In Russia, measles incidence increased by 3.1% in 2017 compared with 2016. The rise in morbidity is attributed to vaccination refusal, delayed recognition of infection, and therefore delayed epidemiological interventions. Another contributing factor is insufficient vaccination coverage among certain population groups. Increased measles incidence is also associated with virus importation from other regions. The World Health Organization recognizes vaccine hesitancy as one of the major public health threats.

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Purpose of the Study

To determine the clinical and epidemiological characteristics of measles cases recorded in the Samarkand region during November and December of 2023.

Materials and Methods

A total of 795 patients diagnosed with measles and hospitalized at the regional clinical infectious diseases hospital in Samarkand from November to December 2023 were observed. Of these patients, 716 were children between 1 and 3 years old. Diagnosis was based on epidemiological history, medical history, and assessment of clinical symptoms including the catarrhal period, rash stage, and pigmentation stage. Particular attention was given to the presence of Koplik's spots, rash characteristics, rash sequence, and pigmentation changes. All patients underwent routine laboratory tests, including complete blood count, urinalysis, and stool examination. Serological testing for measles-specific IgM confirmed the diagnosis at admission. Chest radiographs were performed when necessary to identify complications. All children were evaluated by a pediatrician and, when needed, by a neurologist.

Results and Discussion

Evaluation of disease severity revealed that 85% of patients had a moderate form, 10% had a severe form, and 5% had mild or modified measles. Most children (68%) were admitted during the rash stage, while 32% were hospitalized in the catarrhal stage. The clinical course was cyclic in most cases except for patients with modified measles. The incubation period lasted an average of 4–5 days. The catarrhal stage lasted 2–3 days in infants under one year and 3–5 days in older children. All patients had fever ranging from 37.5°C to 40°C; 68% had a temperature of 37.5–38.5°C and 32% had temperatures above 38.5°C. Children experienced decreased appetite, restlessness, and irritability, particularly those under 1 year (84.3%). Older children (6.8%) reported headache, weakness, coughing, and rhinorrhea. All patients demonstrated eyelid swelling, conjunctival hyperemia of varying intensity, and photosensitivity. Koplik's spots, observed as small gray-white lesions with a hyperemic border on the buccal mucosa, were detected in 84% of patients. Oral mucosal swelling and hyperemia were present in most children, while 5% showed less pronounced catarrhal symptoms.

The rash lasted 3–4 days and appeared initially behind the ears and around the nose, spreading to the trunk and then covering the entire body by days 3–4. The rash involved both flexor and extensor surfaces and was abundant in 92% of patients; only 8% had limited eruptions. In 5% of patients, rash progression did not follow the typical stage sequence. Hemorrhagic spots appearing alongside papular lesions were detected in 4% of cases. Rash onset was accompanied by significant intoxication symptoms and fever of 38.5–39°C. In 97% of patients, the cough became barking in nature. Intestinal disorders manifested as frequent liquid stools were observed in 33% of infants. Complications detected during the rash stage indicated a complicated disease course: obstructive bronchitis occurred in 12% of patients, stenosing laryngotracheitis in 8%, and bronchopneumonia in 82%. In infants under one year, measles was accompanied by hypoplastic anemia. Pigmentation appeared by day 2–4, and was observed in 86% of patients. During the pigmentation stage, intoxication symptoms gradually subsided, and the general condition improved. Maculopapular rash

in all patients eventually underwent light peeling. The total duration of the rash period ranged from 7 to 12 days.

Conclusions

1. Of the 795 measles cases, most affected individuals were young children, particularly infants under one year (84.3%).
2. Moderate severity of disease was the most common clinical manifestation (85% of cases), and 10% of cases were severe.
3. Complications were more frequently observed in younger children, including obstructive bronchitis (15%), stenosing laryngotracheitis (13%), and bronchopneumonia (82%).

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