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# EPIDEMIOLOGICAL FEATURES OF PARASITIC DISEASES AND PARASITISM

*Fakhriddinova Shahnoza Fakhriddinovna* - Assistant of the Department of Epidemiology, Dermatovenereology and Pediatric Dermatovenereology at the Abu Ali ibn Sino Bukhara State Medical Institute, Bukhara, Uzbekistan.

**ABSTRACT.** WHO experts believe that the incidence of measles in Europe and Uzbekistan has reached a historical maximum over the past ten years. The measles situation in the world, including in European countries, has remained unfavorable for three years now. The European Center for Disease Prevention and Control associates this frightening trend with a decline in the global vaccination rate to 78% instead of the required 90–95%.

**Keywords:** children, exanthema, infectious erythema.

# ЭПИДЕМИОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ПАРАЗИТНЫХ ЗАБОЛЕВАНИЙ И ПАРАЗИТИЗМА

*Фахриддинова Шаҳноза Фахриддиновна* - Ассистент кафедры эпидемиологии, дерматовенерологии и детской дерматовенерологии Бухарского государственного медицинского института имени Абу Али ибн Сино, Бухара, Узбекистан.

**АННОТАЦИЯ.** Эксперты ВОЗ считают, что заболеваемость корью в Европе и Узбекистане достигла исторического максимума за последние десять лет. Ситуация с корью в мире, в том числе в европейских странах, вот уже три года остается неблагоприятной. Европейский центр по профилактике и контролю заболеваний связывает эту пугающую тенденцию со снижением уровня вакцинации в мире до 78% вместо требуемого 90-95%.

**Ключевые слова:** дети, экзантема, инфекционная эритема.

**Introduction.** Despite the availability of a safe and affordable vaccine, measles caused an estimated 107,500 deaths globally in 2023, the majority of whom were unvaccinated or undervaccinated children under 5 years of age.

In 2023, the proportion of children who received a first dose of measles vaccine was 83%, a significant decrease from 86% in 2019.

Measles remains a common disease, particularly in parts of Africa, the Middle East, and Asia. The vast majority of measles deaths occur in low-income countries with weak healthcare infrastructure, which struggle to immunize all children.

WHO experts believe that the incidence of measles in Europe has reached a historic high over the past ten years. The measles situation in the world, including in European countries, has remained unfavorable for three years now.

Measles is a highly contagious anthroponotic viral infection with an aspiration mechanism of transmission.

Pathogen. Characterized by febrile, intoxication, and exanthema syndromes, the presence catarrhal phenomenon, enanthema, and often occurs with primary and/or secondary complications.

Etiology-The causative agent of measles is an RNA genomic virus belonging to the paramyxovirus family. Pathogens are not persistent in the environment, but they can be kept alive for several hours in aerosols. By In terms of its epidemiology, measles is a typical droplet infection. The source of infection is sick people. The greatest danger in terms of transmission of infection is represented by patients in the catarrhal period (on average, 4 days before the appearance of the rash and until the 5th day after the appearance of the rash). The incubation period for measles is often only 10–14 days. One of the most dangerous viral infections for adults is measles, the contagiousness index (morbidity after contact with the pathogen) is 90–95%, and the disease is tolerated by adults significantly harder than children. At the onset of measles, damage to the epithelial cells of the respiratory tract dominates the development of relevant clinical manifestations. The measles virus, located in the mucous membrane of the upper respiratory tract pathways and in the nasopharyngeal mucus, is released from the body when coughing, sneezing, talking and even breathing in the form of tiny aerosol droplets. Measles symptoms do not appear immediately after infection. In classic clinical practice, the course of measles is divided into periods: incubation (from 7 to 21 days), catarrhal (the first symptoms of measles: increased body temperature, cough, runny nose) and periods of rashes, pigmentation and recovery (reconvalescence). The first manifestations of measles (prodromal stage) are nonspecific symptoms: fever, cough, runny nose, and conjunctivitis. At the end of the prodromal period, Belsky-Filatov-Koplik spots appear on the buccal mucosa, which are specific for measles. They look like gray-white grains surrounding hyperemia, located at the level of the second molars. These rash elements persist for several days, but they begin to disappear when rashes appear on the skin. Measles rashes are characterized by stages: first, the rash appears on the face, behind the ears, and on the scalp, then moves to the torso and arms, and then spreads to the legs. Morphologically, the rashes are erythematous, maculopapular.

The rash lasts up to 5 days, then fades away, leaving behind pigmentation that disappears within 2–3 weeks Simultaneously with pigmentation, pityriasis-like peeling appears, most pronounced on the face and torso.

Measles can have typical or atypical presentations. Atypical include:

1. Erased form. In this case, the disease occurs in a very mild form, without a pronounced specific clinical manifestation. Patients note a slight increase in body temperature, cold symptoms (sore throat, cough, weakness). Sometimes an erased form of the disease occurs after vaccination against measles or administration of gamma globulin.

2. Hemorrhagic form, when the disease is accompanied by multiple hemorrhages on skin, blood in urine and stool. Due to the hemorrhagic form, it often happens death due to large blood loss. With timely hospitalization and correct treatment, the prognosis for the disease is favorable.

3. Hypertoxic form, which occurs against the background of severe intoxication of the body and manifests itself at temperatures up to 40 °C and above, with symptoms of meningoencephalitis, cardiac failure and respiratory failure.

Atypical manifestations are more common in adults. The course of measles in adults has its own characteristics: more pronounced intoxication syndrome (weakness, sweating, drowsiness, and lethargy); catarrhalphenomena (nasal congestion, conjunctivitis, cough, sore throat and discomfort in the throat) prevail more often dry cough and there is a violation of the phasing of rashes.

Measles in adults is diagnosed based on characteristic symptoms and laboratory results.research.

According to clinical recommendations, they are used for the laboratory diagnosis of infection.serological and molecular biological methods. Blood testing is carried out by enzyme immunoassay analysis (ELISA), and to determine antibodies (IgM, IgG) to the measles virus, blood is taken on the 5th day from the beginning of rashes. The polymerase chain reaction method is used to identify and determine the type of virus. To conduct the study, material is collected (nasopharyngeal swabs, urine, cerebrospinal fluid) at 1–3 day since the rash. In some cases, special virological diagnostic methods are used (virus microscopy, immunofluorescence reaction).

A general blood test for measles is characterized by a decrease in the number of leukocytes, an increase in the erythrocyte sedimentation rate. If a secondary bacterial infection occurs, then the results of the studies note neutrophilic leukocytosis. It is also recommended to perform a biochemical analysis of blood and general urine analysis: they will help determine the presence and severity of liver damage and urinary system damage. When managing a patient with measles, monitoring of clinical and biochemical parameters is mandatory. blood tests over time. If necessary, additional diagnostics are carried out - analysis of the spinal cord fluids, radiography and computed tomography of the chest, electrocardiography (ECG), consultations with an ENT doctor, neurologist and other specialists as indicated.A feature of the interaction between the measles virus and the human immune system is the development of transient secondary immunodeficiency, which implies a high risk of severe complications (bacterial and/or viral etiology), which can be destructive. More often Acute and chronic diseases of the ENT organs occur, the most common of which is otitis media, which occurs in 7–9% of patients; lesions of the digestive system (enterocolitis, diarrhea, hepatitis, pancreatitis) and urinary system (pyelonephritis, cystitis, glomerulonephritis), as well as diseases of the central nervous system, most often occurring in the form of acute infectious and post-infectious encephalitis with a

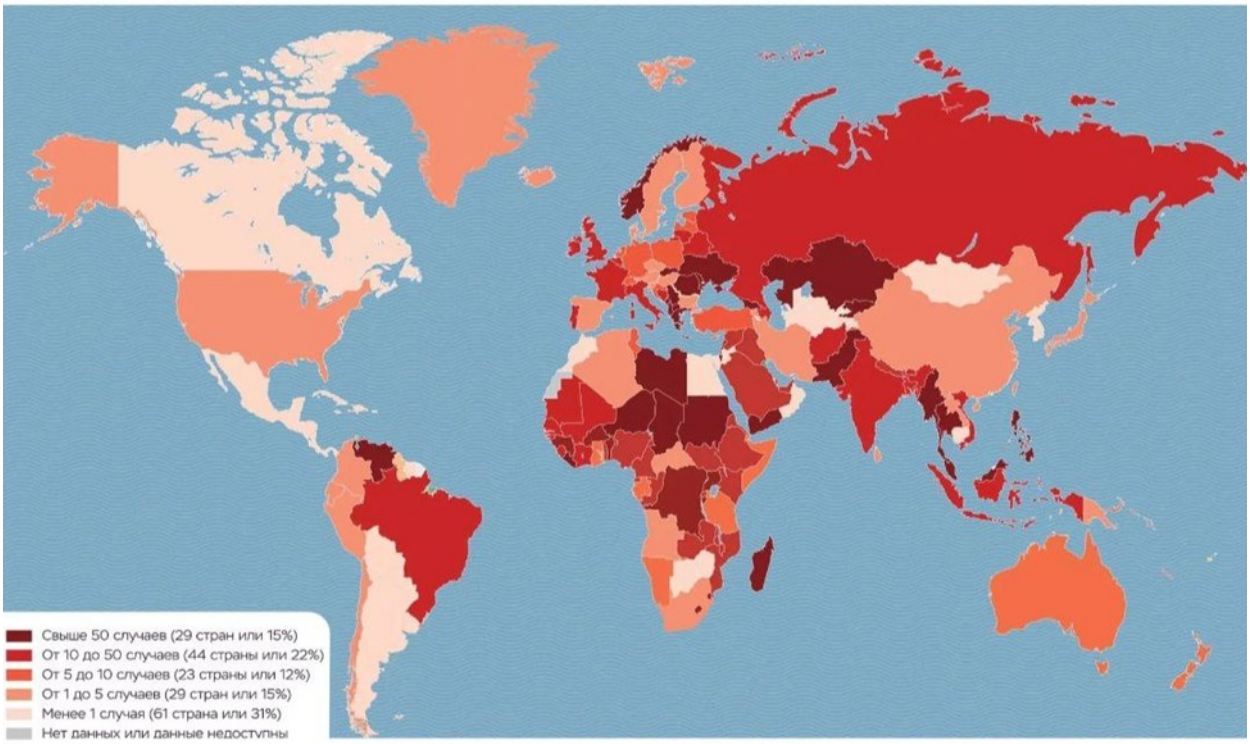
frequency of 0.01–0.02%. Complications are observed in the form of infectious pathology of the lower respiratory tract, where pneumonia occurs in 1–6% of patients and can be either viral or bacterial in etiology. Symptoms such as constant unmotivated weakness, headaches, dry cough, changes in auscultation pattern, prolonged fever and repeated rise in temperature allow us to be wary of the presence of pneumonia. Computed tomography gives an objective picture of the organs of the chest, a bacteriological examination of the sputum should also be carried out (if there is a wet cough, with proper and correct collection of biomaterials), PCR study for respiratory viruses and bacteria to clarify the etiology.

Specific treatment measlesdoes not exist, therefore therapy for this infectious disease is aimed at alleviating the patient's condition and combating secondary infections and complications. The patient is prescribed antipyretic drugs to reduce fever, eliminate symptoms of intoxication and inflammation. For etiotropic therapy, it is recommended to use interferons (interferon-alpha) and human immunoglobulin is normal in severe forms of infection. For detoxification therapy in moderate and severe forms, electrolyte solutions are indicated; for mild cases, oral rehydration is indicated. Symptomatic therapy is aimed at relieving symptoms (decongestants, antitussives and expectorants, antipyretics, antihistamine therapy). At development of complications, therapy is carried out aimed at preventing them, including antibacterial therapy Such groups of antimicrobial drugs as macrolides and fluoroquinolones of the III and IV generations are preferred against pneumonia caused by mycoplasma and chlamydial infections, while bacterial pneumonia (streptococcal, staphylococcal, etc.) with measles can be successfully treated with beta-lactam antibiotics. According to O. V. Tsvirkun, measles outbreaks mainly formed in hospitals (59%), in families (40%), less often (1%) at the place of residence or in orphanages, which indicates the need for more careful compliance with the rules of epidemic surveillance, timely identification and isolation of the patient, as well as careful monitoring of contacts, timely immunoprophylaxis.

When isolating a patient at home, daily wet cleaning is required, if possible, the maximum limiting the patient's contact with family members, prohibiting relatives or friends from visiting the patient.All contacts are subject to medical observation until 21 days from the moment the patient is identified.

Hospitalization of patients is carried out in cases of severe disease and for epidemic indications (persons living in hostels, hotels, hostels, etc., decreed groups of persons). Sick people are hospitalized in a separate box and subject to strict bed rest. Persons hospitalized in hospital, must be discharged no earlier than 5 days after the appearance of the rash. Medical staff, Anyone in contact with a measles patient must observe all safety measures before visiting the box: be vaccinated or have a high protective antibody titer, it is mandatory to wear caps, gloves, masks and special medical clothing.After discharge from the hospital or treatment in isolation at home, patients are subject to mandatory dispensary registration at the

place of attachment to the clinic for a period of 1 month. Multiplicity of mandatory. Control examinations by a doctor are once every two weeks. Blood and




urine tests are performed after 2 and 4 weeks, using, ECG and other laboratory and instrumental research methods according to indications, such as consultations with narrow specialists. After 1 month of medical supervision in the presence of good laboratory results indicators, the absence of complications, the patient is subject to removal from the dispensary register. It is well known that the most important and effective way to prevent measles is vaccination. Main and The only correct method of preventing the disease is active immunization. High quality vaccination carried out according to the terms of the National Vaccination Calendar in compliance with all standards, and regular revaccination, an increase in protective antibody titers leads to the impossibility of contracting an infection, and persons who are vaccinated once, as a rule, suffer a mild or atypical form of the disease.

Vaccinated to children who have not had measles from 12 months of age. Revaccination is carried out once every 6 years before entering school. Adolescents and adults under 35 years of age are also subject to immunization against measles. sick, not vaccinated and vaccinated once, who do not have information about preventive vaccinations against measles.The duration of post-vaccination immunity is up to 8–10 years. Recommended every 10 years of vaccination for patients with low titers of protective antibodies.

It is imperative to promptly isolate the sick family member in a separate room, provide him with an individual set of dishes, bed linen and care.As a non-specific preventive measure, it is recommended to wear a medical mask in public places (metros, shops and shopping centers, prefectures, clinics), especially during

the epidemic season, to maintain a healthy lifestyle, a balanced diet high in proteins and vitamins, adherence to a work and rest regime, hardening, avoiding hypothermia and drafts. Timely treatment of chronic diseases that contribute to the deterioration of the immune system and increased susceptibility to pathogenic bacteria and viruses.

**Results and discussion.** Anyone without immunity (either unvaccinated or vaccinated but not yet immune) is at risk of infection. Unvaccinated young children and pregnant women are at the highest risk of severe complications from measles.

In countries experiencing or recovering from natural disasters or conflicts, damage to infrastructure and health services disrupts routine immunization, while overcrowded camps used for housing increase the risk of infection. Children suffering from malnutrition or other conditions that weaken their immune systems are at the highest risk of dying from measles.

Complications most often develop in children under 5 years of age and in adults over 30. They are more common in children who are malnourished, especially due to vitamin A deficiency, or who have a weakened immune system due to HIV infection or other illnesses. Measles itself also weakens the immune system and can cause the body to "forget" how to protect itself from infections, posing an extremely serious threat to children.

**Conclusion.** Timely identification and isolation of patients, correct hospitalization according to clinical and epidemiological indications, competent tactics for managing the patient and contact persons will help stop the growth of morbidity and transmission infections, prevent the risk of complications and deaths, and an active vaccine prevention population with widespread immunization coverage will lead to the complete elimination of measles.

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