CLINICAL AND LABORATORY FEATURES OF SALMONELIOSIS

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КЛИНИКО-ЛАБОРАТОРНЫЕ ОСОБЕННОСТИ САЛЬМОНЕЛИОЗА

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Annotation. Laboratory diagnosis of salmonellosis remains extremely relevant, given the constant outbreaks of this disease in various regions of the world. Salmonelliosis, caused by Salmonella bacteria, causes severe intestinal disorders and its diagnosis is critical for effective control and treatment. With increasing globalization and the growth of food chains, the risk of infection through consumption of contaminated food has increased significantly. This makes early detection of infection vital.

Key words: salmonellosis, etiology, pathogenesis, clinical symptoms, laboratory diagnostics.

Аннотация. Лабораторная диагностика сальмонелиоза остается крайне актуальной, учитывая постоянные вспышки этого заболевания в различных регионах мира. Сальмонелиоз, вызванный бактериями рода Salmonella, приводит к тяжелым кишечным расстройствам, и его диагностика имеет решающее значение для эффективного контроля и лечения. С увеличением глобализации и роста пищевых цепочек, риск заражения через потребление contaminated пищи существенно возрос. Это делает раннее обнаружение инфекции жизненно важным.

Ключевые слова: сальмонелиоз, этиология, патогенез, клиническая симптоматика, лабораторная диагностика.

Introduction. Salmonelliosis is an infectious disease caused by bacteria of the genus Salmonella. The etiology of salmonelliosis is associated with various serotypes of bacteria of the genus Salmonella, which are gram-negative, motile, rod-shaped microorganisms. The best known serotypes are Salmonella enterica and Salmonella bongori, with the former comprising many subtypes that cause disease in humans and animals. The main sources of infection are animals, especially domestic trade and wild birds, pigs and cattle. The bacteria can be excreted in the feces of infected animals, contaminating the environment and food.

The incidence of salmonellosis varies depending on geographic region, level of sanitation, and food processing practices. In developing countries, these infections are most often associated with inadequate cooking of food and lack of access to clean water. At the same time, in developed countries, an increase in morbidity is observed due to the increasing consumption of undercooked or poorly processed meat, as well as due to non-compliance with hygiene rules when preparing food [2, 9].

Salmonellosis is transmitted primarily through foods such as meat, eggs and dairy products, as well as through exposure to contaminated water. Consumption of undercooked or unsterilized foods poses the greatest risk for illness. In addition, inadequate sanitation and hygiene practices also contribute to the spread of infections.

The pathogenesis of salmonellosis includes a complex process of interaction between pathogenic microorganisms and the host. Salmonella, the genus of bacteria that causes this disease, enters the body through the digestive tract, often through eating contaminated foods such as raw eggs or undercooked meat. At the same time, the bacterium has the ability to survive in the acidic environment of the stomach, which allows it to reach the small intestine [3, 10].

In the small intestine, salmonella begins to actively multiply, which leads to cell division and the release of toxins. These toxins promote inflammation of the intestinal lining, causing symptoms such as diarrhea, vomiting and abdominal pain. It is

important to note that not only the bacteria themselves, but also the toxins they produce can lead to systemic effects, such as fever and intoxication [1, 7, 8].

The body's immune response also plays a key role in pathogenesis. Phagocytes and T cells attempt to eliminate the infection, which can lead to additional inflammatory processes. In some cases, Salmonella can escape phagocytosis, which allows it to survive and multiply in macrophages, allowing the bacteria to disperse throughout the body and cause more serious infections, including sepsis [1, 4, 6].

The clinical picture of the disease can vary greatly from mild to severe complications.

In the initial stages of salmonellosis, patients usually complain of body aches, headaches and malaise. These are followed by symptoms characteristic of gastrointestinal disorders: nausea, vomiting, abdominal pain and diarrhea. Often the stool becomes watery and may contain mucus or blood, which indicates a more serious course of the disease [1, 5, 17].

The entire process can last from several days to two weeks. However, depending on the type of salmonella and the state of the patient's immune system, additional complications such as dehydration may occur, especially in children and the elderly. It is important to pay attention to these symptoms and seek prompt medical attention, as proper diagnosis and treatment can significantly reduce the risk of developing serious consequences.

Laboratory diagnosis of salmonelliosis plays a key role in the timely detection and treatment of this infectious disease. Salmonelliosis, caused by bacteria of the genus Salmonella, can manifest itself in the form of gastroenteritis, as well as in more severe systemic forms. Effective diagnosis begins with clinical assessment and history, followed by laboratory tests [2, 16, 18].

The main diagnostic methods are bacteriological, serological and molecular genetic. The bacteriological method for diagnosing salmonellosis is a key tool for identifying the causative agents of this infectious disease. Salmonelliosis, caused by Salmonella bacteria, can cause serious gastrointestinal problems, and its successful treatment requires accurate and rapid diagnosis.

The process begins by collecting samples of feces, blood or other biological materials from the patient. Then a cultural analysis is carried out, which includes inoculation on specific nutrient media that promote the growth of Salmonella. These environments enrich the microflora, making it possible to identify even a small number of pathogens.

After incubating the samples at optimal temperatures, colonies are identified using morphological and biochemical tests. For final verification of the result, a molecular genetic method can be used - polymerase chain reaction (PCR), which allows you to detect the presence of Salmonella DNA.

The serological method for diagnosing salmonellosis is an important tool in modern medical practice, allowing one to effectively identify infections caused by pathogens of the genus Salmonella. The basis of this method is the determination of specific antibodies in the patient's blood serum, which makes it possible to determine the presence of an immune response to infection [2, 15, 19].

The procedure begins with the collection of a blood sample, which is then carefully processed. Using various serological tests, such as agglutination tests or enzyme-linked immunosorbent assays, specialists can detect IgM and IgG antibodies specific for Salmonella. The appearance of IgM indicates an acute infection, while the presence of IgG may indicate a previous infection or a chronic form of the disease [1, 13, 14].

It is important to note that the serological method, despite its significance, is not absolutely specific and requires confirmation by the results of a bacteriological study. However, it provides the opportunity for rapid diagnosis, which is especially important in conditions of epidemics and outbreaks of salmonellosis, allowing timely measures to be taken to control and prevent the spread of infection.

The molecular genetic method for diagnosing salmonellosis is a modern and highly effective approach to identifying bacteria of the genus Salmonella in samples of biological tissues and odorous products. This method is based on the principles of polymerase chain reaction (PCR), which makes it possible to detect specific DNA fragments of pathogens with high accuracy.

The use of molecular technologies significantly reduces diagnostic time compared to traditional culture methods, which can take several days. Due to the high sensitivity and specificity of PCR, the method allows you to detect even trace amounts of pathological material, which is especially important in conditions of outbreaks of infection or when examining complex samples [1, 12].

In addition, molecular genetic methods make it possible not only to confirm the presence of Salmonella, but also to carry out their typing, which is an important part of epidemiological control and prevention of the spread of infection. The method has wide application in veterinary practice, food safety and microbiology, providing reliable results necessary for the development of effective measures to combat salmonellosis.

Conclusions. The use of modern monitoring and modeling techniques, including genetic studies of Salmonella strains and epidemiological data, helps to detect disease outbreaks at an early stage. This allows you to quickly respond and implement measures to control the spread of infection. To control the spread of salmonellosis, education, the introduction of monitoring systems and compliance with sanitary standards at all stages of the food chain are important. Effective epidemiological practice includes not only monitoring for disease outbreaks, but also actively investigating the sources of infection. The prognosis of salmonellosis requires an

integrated approach, combining the efforts of doctors, veterinarians and public health specialists to create effective strategies for the prevention and control of this disease.

LITERATURE

1. Крамп Дж.А., Шёлунд-Карлссон М., Гордонц М.А., Парри К.М. Эпидемиология, клиническая картина, лабораторная диагностика, устойчивость к противомикробным препаратам и антимикробное лечение инвазивных сальмонеллезных инфекций // Clin Microbiol Rev. - 2015ю - № 28 (4). - С. 901-937.
2. Специфические белки: практическое пособие для врачей: в 2 ч. — Ч. I. Лабораторные тесты исследования специфических белков / Ю.И. Ярец. — Гомель, 2015. — 64 с.
3. Gan S.D., Patel K.R. Enzyme immunoassay and enzyme-linked immunosorbent assay // J. Invest Dermatol. — 2013 sep. — Vol. 133 (9). — P. 12.
4. Sabirovna I. N., Muhammadali B. LABORATORY INDICATORS OF NEPHROPATHY IN TYPE II DIABETES MELLITUS //Web of Medicine: Journal of Medicine, Practice and Nursing. – 2024. – Т. 2. – №. 5. – С. 93-95.
5. Kudratova Z. E.Isomadinova L. K.Sirojeddinova S. F. Tursunova M. E.Current modern etiology of anemia. novateur publications international journal of innovations in engineering research and technology. № 10. 2023, P. 1-4.
6. Isomadinova L.K. Qudratova Z.E. Shamsiddinova D.K.Samarqand viloyatida urotiliaz kasalligi klinik-kechishining o’ziga xos xususiyatlari. Central asian journal of education and innovation №10. 2023 , P. 51-53
7. Sabirovna I. N., Fotima I. PROBLEMS OF DIAGNOSIS OF COMMUNITY ACQUISITED PNEUMONIA IN YOUNG CHILDREN //TADQIQOTLAR. UZ. – 2024. – Т. 31. – №. 2. – С. 188-192.
8. Бердиярова Ш.Ш., Юсупова Н.А. Особенности иммунометаболических нарушений иммунологической реактивности при гематогенных остеомиелитах, Вестник науки и образования, 29-32
9. Dushanova G. A., Nabiyeva F. S., Rahimova G. O. FEATURES OF THE DISTRIBUTION OF HLA-ANTIGENS AMONG PEOPLE OF THE UZBEK NATIONALITY IN THE SAMARKAND REGION //Open Access Repository. – 2023. – Т. 10. – №. 10. – С. 14-25.
10. Berdiyarova Sh.Sh., Ahadova M.M., Ochilov S.A. COMPLICATIONS OF TREATMENT OF ACUTE HEMATOGENOUS OSTEOMYELITIS, LITERATURE REVIEW, Galaxy International Interdisciplinary Research Journal 293-298
11. Бердиярова Ш.Ш., Юсупова Н.А., Ширинов Х.И. Клинико-лабораторная диагностика внебольничных пневмоний у детей, Вестник науки и образования, 80-83

12. Kudratova Zebo Erkinovna, Karimova Linara Alixanovna Age-related features of the respiratory system // ReFocus. 2023. №1. URL: https://cyberleninka.ru/article/n/age-related-features-of-the-respiratory-system.
13. Sabirovna I. N. et al. Dysfunctions of the Immune System and Their Role in the Development of Diseases //The Peerian Journal. – 2023. – Т. 23. – С. 49-52.
14. Давлатов С. С., Сайдуллаев З. Я., Даминов Ф. А. Миниинвазивные вмешательства при механической желтухе опухолевого генеза периампулярной зоны //Сборник Научно-практической конференций молодых ученных СамМИ. – 2010. – Т. 2. – С. 79-80.
15. Ибрагимова Н. и др. РАССТРОЙСТВА ИММУННОЙ СИСТЕМЫ. ПАТОГЕНЕТИЧЕСКИЕ ОСНОВЫ //Центральноазиатский журнал академических исследований. – 2024. – Т. 2. – №. 1. – С. 4-8.
16. Isomadinova L.K, Qudratova Z.E., Babaxanova F.Sh.clinico-laboratory features of the course of covid-19 with hepatitis b journal of new century innovations №-3. 2023 P. 60-65.
17. Nabiyeva F. S., Ibragimova N. S., Diamatova D. N. 2-TIP QANDLI DIABET KECHISHINING O'ZIGA XOS XUSUSIYATLARI //TADQIQOTLAR. UZ. – 2024. – Т. 31. – №. 1. – С. 28-32.
18. Ширинов Х. И., Ибрагимова Н. С., Ибрагимов Б. Ф. НЕБЛАГОПРИЯТНЫЕ ИСХОДЫ СИНДРОМА ПОЛИКИСТОЗНЫХ ЯИЧНИКОВ У МОЛОДЫХ ЖЕНЩИН //Journal of new century innovations. – 2023. – Т. 26. – №. 3. – С. 185-189.
19. Nabiyeva F. S. et al. CREATION OF OPTIMUM CONDITIONS FOR PROPAGATION OF SACCHAROMYCES CEREVISIAE YEAST //Journal of new century innovations. – 2023. – Т. 23. – №. 1. – С. 85-91.