AJPMHS GLOBAL RESEARCH NETWORK

AMERICAN Journal of Pediatric Medicine and Health Sciences
Volume 02, Issue 04, 2024 ISSN (E): 2993-2149

Clinical and Morphological Features of the New Coronavirus Infection (Covid-19)

Oripova Nargiza Akhtamovna
Assistant at the Department of Histology, Cytology and Embryology,
Bukhara State Medical Institute
Bukhara, Uzbekistan

Annotation. The emergence of COVID-19 has posed challenges for healthcare workers to quickly diagnose and provide medical care to patients. Currently, information on the epidemiology, clinical features, prevention and treatment of this disease is limited.

Key words: SARS-CoV, coronavirus family, angiotensin-converting enzyme type II (ACE2), pulse oximetry.

Relevance. Coronaviruses (Coronaviridae) are a large family of RNA viruses that can infect humans and some animals. In humans, coronaviruses can cause a range of diseases, from mild forms of acute respiratory infection to severe acute respiratory syndrome (SARS). Currently, four coronaviruses are known to circulate among the population (HCoV-229E, -OC43, -NL63 and -HKU1), which are present year-round in the structure of acute respiratory viral infections and, as a rule, cause mild to moderate damage to the upper respiratory tract. According to the results of serological and phylogenetic analysis, coronaviruses are divided into four genera: alphacoronavirus, betacoronavirus, gammacoronavirus and deltacoronavirus. The natural hosts of most currently known coronaviruses are mammals. Until 2002, coronaviruses were considered to cause mild diseases of the upper respiratory tract (with extremely rare deaths). At the end of 2002, coronavirus (SARS-CoV), the causative agent of SARS, appeared, which caused acute respiratory viral infection in humans. This virus belongs to the betacoronavirus genus. The natural reservoir of SARS-CoV is bats, with camels and Himalayan civets being intermediate hosts. In total, during the epidemic, more than 8,000 cases of the disease were registered in 37 countries, of which 774 were fatal. Since 2004, no new cases of atypical pneumonia caused by SARSCoV have been reported. In 2012, the world was faced with the new MERS coronavirus (MERS-CoV), the causative agent of the Middle East respiratory syndrome, also belonging to the genus of betacoronaviruses. The main natural reservoir of MERS-CoV coronaviruses is dromedary camels. From 2012 to January 31, 2020, 2,519 cases of coronavirus infection caused by the MERS-CoV virus were reported, of which 866 were fatal. All cases are geographically associated with the Arabian Peninsula (82% of cases were reported in Saudi Arabia). Currently, MERS-CoV continues to circulate and cause new cases of the disease. The new coronavirus SARS-CoV-2 is a single-stranded RNA virus, belongs to the Coronaviridae family, belongs to the Beta-CoV B line. The virus is assigned a second pathogenicity group, like some other representatives of this family (SARS-CoV virus, MERS-CoV). The SARS-CoV-2 coronavirus is believed to be a recombinant virus that is a mixture of a bat coronavirus and an unknown coronavirus. The genetic sequence of SARSCoV-2 is at least 79% similar to that of SARS-CoV. The entry gates of the pathogen are the

epithelium of the upper respiratory tract and epithelial cells of the stomach and intestines. The initial stage of infection is the entry of SARS-CoV-2 into target cells that have angiotensin-converting enzyme type II (ACE2) receptors. ACE2 receptors are present in cells of the respiratory tract, kidney, esophagus, bladder, ileum, heart, and central nervous system. However, the main and quickly accessible target is lung alveolar type II cells (AT2), which determine the development of pneumonia. The role of CD147 in SARS-CoV-2 cell invasion is also discussed. It has been established that the spread of SARS-CoV-2 from the systemic circulation or through the neural plate (Lamina cribrosa) can lead to brain damage. A change in the sense of smell (hyposmia) in a patient at an early stage of the disease may indicate both damage to the central nervous system and swelling of the nasopharyngeal mucosa.

Many aspects of the pathogenesis of coronavirus infection require further comprehensive study.

Epidemiological characteristics.

The main source of infection is a sick person, including those who are in the incubation period of the disease. Transmission of infection is carried out by airborne droplets, airborne dust and contact. The main route of transmission of SARS-CoV-2 is airborne, which occurs when coughing, sneezing and talking at close (less than 2 meters) distance. Contact transmission occurs through handshakes and other types of direct contact with an infected person, as well as through food, surfaces and objects contaminated with the virus. It is known that at room temperature SARS-CoV2 is able to remain viable on various environmental objects for 3 days. According to available scientific data, a fecal-oral mechanism of transmission of the virus is possible. SARS-CoV-2 RNA was detected in stool samples from patients. The COVID-19 nucleocapsid protein was found in the cytoplasm of epithelial cells of the salivary glands, stomach, duodenum, rectum, and urinary tract.

Clinical features of coronavirus infection. The incubation period ranges from 2 to 14 days, on average 5-7 days. COVID-19 is characterized by the presence of clinical symptoms of an acute respiratory viral infection:

- increased body temperature (> 90%);
- cough (dry or with a small amount of sputum) in 80% of cases; - shortness of breath (55%);
- increased fatigue (44%);
- feeling of chest congestion (> 20%).

A sore throat, runny nose, decreased sense of smell and taste, and signs of conjunctivitis may also occur. The most severe shortness of breath develops on the 6-8th day from the moment of infection. It was also found that among the first symptoms may be myalgia (11%), confusion (9%), headaches (8%), hemoptysis (5%), diarrhea (3%), nausea, vomiting, and rapid heartbeat. These symptoms at the beginning of infection can be observed in the absence of an increase in body temperature.

Clinical variants and manifestations of COVID-19:

- Acute respiratory viral infection (affects only the upper respiratory tract);
- Pneumonia without respiratory failure;
- Pneumonia with ONE;
- acute respiratory infections;
- Sepsis;
- Septic (infectious-toxic) shock;
- Thrombosis;

- thromboembolism.

Hypoxemia (decrease in SpO2 by less than 88%) develops in more than 30% of patients. In 80% of patients, the disease occurs in a mild form of ARVI. The average age of patients in China is 51 years, the most severe forms develop in elderly patients (60 years or more), patients often have such concomitant diseases as diabetes mellitus (20%), arterial hypertension (15%) and other cardiovascular diseases. -vascular diseases (in 15%). Patients. Twenty percent of confirmed cases reported in the PRC were classified as severe by Chinese health authorities (15% patients in serious condition, 5% in critical condition). In severe cases, rapidly progressive lower respiratory tract disease, pneumonia, ARF, ARDS, sepsis and septic shock were often observed. In Wuhan, almost all patients with severe disease have progressive ARF: pneumonia is diagnosed in 100% of patients, and ARDS in more than 90% of patients.

Radiation methods are also necessary to identify and evaluate the nature of pathological changes in other anatomical areas and as a means of monitoring during invasive medical interventions.

Literature

1. Хасанов, Б. Б., Султанова, Д. Б., Азимова, С. Б., & Орипова, Н. А. (2020). МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ СТАНОВЛЕНИЯ ИММУННОЙ СИСТЕМЫ И РАЗВИТИЯ ПОТОМСТВА ПРИ ХРОНИЧЕСКОМ ГЕПАТИТЕ МАТЕРИ. Новый день в медицине, (4), 752-754.
2. Khasanov, B., Sultanova, D., Azimova, S., & Oripova, N. (2020). CHRONIC HEPATITIS OF MOTHER AND MORPHOLOGICAL FEATURES OF IMMUNE SYSTEM FORMATION OF POSTERITY. The Scientific Heritage, (55-2), 42-43.
3. Oripova, N. A. (2023). Immunological Function of Intestinal Microflora, Morphological Features, Its Disorders and Correction Possibilities. Scholastic: Journal of Natural and Medical Education, 2(2), 132-140.
4. Орипова, Н. А. (2022). Современные данные морфункционального строение иммунной системы желудочно-кишечного тракта. Scientific progress, 3(2), 773-781.
5. Halimova, Y. S. (2023). Morphofunctional Aspects of Internal Organs in Chronic Alcoholism. AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI, 2(5), 83-87.
6. Shokirov, B. S. (2021). Halimova Yu. S. Antibiotic-induced rat gut microbiota dysbiosis and salmonella resistance Society and innovations.
7. Халимова, Ю. С., & Шокиров, Б. С. (2021). Репродуктивность и жизнеспособность потомства самок крыс при различной длительности воздействия этанола. In Актуальные вопросы современной медицинской науки и здравоохранения: Материалы VI Международной научно-практической конференции молодых учёных и студентов, посвященной году науки и технологий,(Екатеринбург, 8-9 апреля 2021): в 3-х т.. Федеральное государственное бюджетное образовательное учреждение высшего образования «Уральский государственный медицинский университет» Министерства здравоохранения Российской Федерации.
8. Khalimova, Y. S. BS Shokirov Morphological changes of internal organs in chronic alcoholism. Middle European scientific bulletin, 12-2021.
9. Шокиров, Б. С., & Халимова, Ю. С. (2022). ДИСБИОЗ ВЫЗВАННЫЙ АНИБИОТИКАМИ КИШЕЧНОЙ МИКРОБИОТЫ КРЫС И УСТОЙЧИВОСТЬ К САЛМОНЕЛЛАМ. Scientific progress, 3(2), 766-772.

10. Salokhiddinovna, X. Y. (2023). Clinical Features of the Course of Vitamin D Deficiency in Women of Reproductive Age. EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION, 3(11), 28-31.
11. Шокиров, Б., & Халимова, Ю. (2021). Антибиотик-индуцированный дисбиоз микробиоты кишечника крыс и резистентность к сальмонеллам. Общество и инновации, 2(4/S), 93-100.
12. Salokhiddinovna, X. Y. (2023). MORPHOLOGICAL CHANGES IN PATHOLOGICAL FORMS OF ERYTHROCYTES. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 3(11), 20-24.
13. Saloxiddinovna, X. Y. (2023). ERITROTSITLAR PATOLOGIK SHAKLLARINING MORFOLOGIK O'ZGARISHLARI. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 33(1), 167-172.
14. Шокиров, Б., & Халимова, Ю. (2021). Antibiotic-induced rat gut microbiota dysbiosis and salmonella resistance. Общество и инновации, 2(4/S), 93-100.
15. Шокиров, Б. С., & Халимова, Ю. С. (2021). Пищеварительная функция кишечника после коррекции экспериментального дисбактериоза у крыс бифидобактериями. In Актуальные вопросы современной медицинской науки и здравоохранения: Материалы VI Международной научно-практической конференции молодых учёных и студентов, посвященной году науки и технологий,(Екатеринбург, 8-9 апреля 2021): в 3-х т.. Федеральное государственное бюджетное образовательное учреждение высшего образования «Уральский государственный медицинский университет» Министерства здравоохранения Российской Федерации.
16. Salokhiddinovna, X. Y. (2023). Anemia of Chronic Diseases. Research Journal of Trauma and Disability Studies, 2(12), 364-372.
17. Salokhiddinovna, X. Y. (2023). MALLORY WEISS SYNDROME IN DIFFUSE LIVER LESIONS. Journal of Science in Medicine and Life, 1(4), 11-15.
18. Salohiddinovna, X. Y. (2023). SURUNKALI KASALLIKLARDA UCHRAYDIGAN ANEMIYALAR MORFO-FUNKSIONAL XUSUSIYATLARI. Ta'lim innovatsiyasi va integratsiyasi, 10(3), 180-188.
19. Халимова, Ю. С. (2024). КЛИНИКО-МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ВИТАМИНА D В ФОРМИРОВАНИЕ ПРОТИВОИНФЕКЦИОННОГО ИММУНИТА. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 36(3), 86-94.
20. Saloxiddinovna, X. Y. (2024). CLINICAL FEATURES OF VITAMIN D EFFECTS ON BONE METABOLISM. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 36(5), 90-99.
21. Saloxiddinovna, X. Y. (2024). CLINICAL AND MORPHOLOGICAL ASPECTS OF AUTOIMMUNE THYROIDITIS. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 36(5), 100-108.
22. Saloxiddinovna, X. Y. (2024). MORPHOFUNCTIONAL FEATURES BLOOD MORPHOLOGY IN AGE-RELATED CHANGES. Лучшие интеллектуальные исследования, 14(4), 146-158.
23. Saloxiddinovna, X. Y. (2024). CLINICAL MORPHOLOGICAL CRITERIA OF LEUKOCYTES. Лучшие интеллектуальные исследования, 14(4), 159-167.

24. Saloxiddinovna, X. Y. (2024). Current Views of Vitamin D Metabolism in the Body. Best Journal of Innovation in Science, Research and Development, 3(3), 235-243.
25. Oripova, N. A. (2023). Intestinal Lymphoid Tissue as the Basis of the Immune System of the Digestive Tract. Scholastic: Journal of Natural and Medical Education, 2(2), 141-145.
26. Azimova, S., & Oripova, N. (2021, March). FORMATION OF SPIRITUAL EDUCATION IS ONE OF THE PRIORITIES IN HUMAN LIFE AND SOCIETY. In Конференции.
27. Nargiza, O. (2022). Histological Indicators of the Limphocytes of the Digestion System. Research Journal of Trauma and Disability Studies, 1(9), 155-161.
28. Oripova, N. A. (2023). Structural and Functional Features of the Immune System of the Small Intestine (Literature Review). American Journal of Pediatric Medicine and Health Sciences (2993-2149), 1(3), 167-171.
29. Oripova, N. A. (2023). MORPHO-FUNCTIONAL PECULIARITIES OF PEYER'S PLATES IN THE FORMATION OF THE IMMUNE SYSTEM OF THE SMALL INTESTINAL. AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI, 2(5), 460-464.
30. Oripova, N. A. (2022). Morphological Features of White Rat and Human Hepatocytes in Toxic Liver Cirrhosis. AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI, 1(7), 100-105.
31. Oripova, N. A. (2022). Morphological Features of Peyer's Plates in the Formation of the Immune System of the Small Intestine. Central Asian Journal of Literature, Philosophy and Culture, 3(11), 231-236.
32. Oripova, N. A. (2022). THE RELATIONSHIP OF IMMUNITY AND INTESTINAL MICROBIOCENOSIS. Gospodarka i Innowacje., 23, 356-361.
33. ORIPOVA, N. (2022). BULLETIN OF SCIENCE AND PRACTICE. BULLETIN OF SCIENCE AND PRACTICE Учредители: Овечкина Елена Сергеевна, 8(5), 644-651.
34. Oripova, N. A. (2021). MODERN CONCEPTS OF THE STRUCTURE AND FUNCTION OF PEYER'S PATCHES. Новый день в медицине, (1), 189-193.
35. Oripova, N. A. (2021). Structural and functional features of peyer's plates in the formation of the immune system of the small intestinal (literature review). Новый день в медицине.–5 (37).–С, 180-183.
36. Oripova, N. A. (2023). Modern Data on the Structure and Functioning of the Immune System of the Gastrointestinal Tract.
37. Togaydullaeva, D. D. (2022). ARTERIAL GIPERTONIYA BOR BEMORLARDA KOMORBIDLIK UCHRASHI. TA'LIM VA RIVOJLANISH TAHLILI ONLAYN ILMIY JURNALI, 2(11), 32-35.
38. Togaydullaeva, D. D. (2022). Erkaklarda yurak ishemik kasalligining kechishida metabolik sindrom komponentlarining ta'siri. Fan, ta'lim, madaniyat va innovatsiya, 1(4), 29-34.
39. Dilmurodovna, T. D. (2023). MORPHOLOGICAL ASPECTS OF THE THYROID GLAND IN VARIOUS FORMS OF ITS PATHOLOGY. American Journal of Pediatric Medicine and Health Sciences (2993-2149), 1(8), 428-431.

40. Dilmurodovna, T. D. (2023). Morphological Signs of the Inflammatory Process in the Pancreas in Type I and Ii Diabetes Mellitus. EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION, 3(11), 24-27.
41. Dilmurodovna, T. D. (2023). КЛИНИКО-МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ ТЕЧЕНИЕ ВОСПАЛИТЕЛЬНОГО ПРОЦЕССА В ПОДЖЕЛУДОЧНОЙ ЖЕЛЕЗЕ ПРИ САХАРНОМ ДИАБЕТЕ I И II ТИПА. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 33(1), 173-177.
42. Khafiza, J., & Dildora, T. (2023). Frequency of Comorbid Pathology among Non-Organized Population. Research Journal of Trauma and Disability Studies, 2(4), 260-266.
43. Dilmurodovna, T. D. (2023). Clinical and Diagnostic Features of the Formation of Arterial Hypertension in Young People. EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION, 3(12), 41-46.
44. Dilmurodovna, T. D. (2024). DIABETES MELLITUS IN CENTRAL ASIA: PROBLEMS AND SOLUTIONS. Лучшие интеллектуальные исследования, 12(4), 204-213.
45. Тогайдуллаева, Д. Д. (2024). ОБЩИЕ ОСОБЕННОСТИ ТЕЧЕНИЕ САХАРНОГО ДИАБЕТА В СРЕДНЕЙ АЗИИ. Лучшие интеллектуальные исследования, 12(4), 193-204.
46. Tog‘aydullaeva, D. D. (2024). GIPERTENZIYA BOR BEMORLARDA MODDALAR ALMASINUVINING BUZULISHI BILAN KELISHI. Лучшие интеллектуальные исследования, 14(4), 130-137.
47. Dilmurodovna, T. D. (2024). FACTORS CAUSING ESSENTIAL HYPERTENSION AND COURSE OF THE DISEASE. Лучшие интеллектуальные исследования, 14(4), 138-145.
48. Dilmurodovna, T. D. (2024). PREVALENCE INDICATORS OF ARTERIAL HYPERTENSION IN THE POPULATION. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 41(4), 78-87.
49. Тогайдуллаева, Д. Д. (2024). ИШЕМИЧЕСКАЯ БОЛЕЗНЬ СЕРДЦА, МЕТОДЫ ЛЕЧЕНИЯ И ЭФФЕКТИВНОСТЬ ЛЕЧЕНИЯ СТЕНОКАРДИИ. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 39(5), 107-115.
50. Dildora, T. (2021, June). CHRONIC RENAL FAILURE. In Archive of Conferences (pp. 85-89).
51. Qilichovna, A. M. (2024). PREVENTION OF PERIODONTAL AND GUM DISEASES IN PREGNANT WOMEN. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 41(5), 240-245.
52. Qilichovna, A. M. (2024). HOMILADOR AYOLLARDA TISH VA PARADONT KASALLIKLARINING OLDINI OLISH. ОБРАЗОВАНИЕ НАУКА И ИННОВАЦИОННЫЕ ИДЕИ В МИРЕ, 41(5), 246-253.
53. Ахмедова, М. К. (2024). ИЗУЧЕНИЕ ПРИЧИННЫХ ФАКТОРОВ ПАРОДОНТИТА. Journal of new century innovations, 49(3), 47-53.
54. Qilichovna, A. M. (2024). TO STUDY THE FACTORS THAT CAUSE PERIODONTITIS. Journal of new century innovations, 49(3), 40-46.

55. Qilichovna, A. M. (2024). THE ROLE OF PATHOGENESIS IN THE GROWTH FACTORS OF PERIODONTITIS DISEASE. Journal of new century innovations, 49(3), 25-32.