



CLINICAL CHANGES IN THE GASTROINTESTINAL SYSTEM AS A RESULT OF THE EFFECT OF COVID-19

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✓ *Resume*

Studies have shown that coronavirus infections manifest as primary lung infections as well as have significant extrapulmonary complications affecting many organ systems, including the gastrointestinal tract. It has been noted that patients with digestive symptoms have clinical manifestations such as anorexia, diarrhea, vomiting, or abdominal pain. As the active period of the disease increased, the symptoms of the gastrointestinal tract became more pronounced, especially in patients with symptoms of anorexia, the high rate was 41.7%. Our study showed that COVID-19 patients showed gastrointestinal symptoms such as diarrhea (25%), anorexia (41.7%), and nausea (18.3%) and abdominal pain (15%). However, the main mechanism of origin of symptoms in the gastrointestinal tract has not been fully studied.

Keywords: COVID-19, GIT, anorexia, diarrhea, respiratory distress syndrome, SARS-CoV-2, mesenteric ischemia.

ОШҚОЗОН-ИЧАК ТИЗИМИДА COVID-19 ТАЪСИРИ НАТИЖАСИДА КУЗАТИЛАДИГАН КЛИНИК ҶЗГАРИШЛАР

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✓ *Резюме*

Тадқиқотлар шуни кўрсатадики коронавирусли инфекциялар биринчи навбатда ўпка инфекцияси сифатида намоён бўлиши билан бир қаторда кўпчилик орган тизимларига, шу жумладан ошқозон-ичак трактига таъсир қилувчи сезиларли экстрапулмонар асоратларга эга эканлиги яна бир бор аниқланди. Овқат ҳазм қилиш аломатлари бўлган беморларда анорексия, диарея, қусиш ёки қорин оғриги каби клиник кўринишлар борлигини таъкидлаб ўтилди. Касалликнинг фаол даври охири боргани сайин, ошқозон-ичак трактининг белгилари аниқроқ намоён бўлди, айниқса, анорексия белгилари билан ётқизилган беморларнинг юқори кўрсаткичи 41.7% ни ташиқил қилган. Биз ўтказган тадқиқот шуни кўрсатдики, COVID-19 беморлари диарея (25%), анорексия (41.7%) ва кўнгил айниши (18.3%) қоринда оғриқ (15%) каби ошқозон-ичак белгиларини намоён бўлди. Бироқ, ошқозон-ичак трактида симптомлар намоён бўлишининг асосий келиб чиқиш механизми тўлиқ ўрганилмаган.

Калит сўзлар: COVID-19, ОИТ, анорексия, диарея, респиратор дистресс синдроми, SARS-CoV-2, ичак тутқичи ишемияси.

КЛИНИЧЕСКИЕ ИЗМЕНЕНИЯ В СИСТЕМЕ ЖЕЛУДОЧНО-КИШЕЧНОЙ СИСТЕМЫ В РЕЗУЛЬТАТЕ ДЕЙСТВИЯ COVID -19

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Исследования показали, что каранавирусные инфекции проявляются как первичные легочные инфекции, а также имеют выраженные внелегочные осложнения, поражающие многие системы органов, в том числе желудочно-кишечный тракт. Было отмечено, что у пациентов с пищеварительными симптомами наблюдаются такие клинические проявления, как анорексия, диарея, рвота и боль в животе. По мере увеличения активного периода заболевания симптомы со стороны желудочно-кишечного тракта становились более выраженными, особенно у больных с явлениями анорексии, высокий показатель составил 41,7%. Наше исследование показало, что пациенты с COVID-19 испытывали желудочно-кишечные симптомы, такие как диарея (25%), анорексия (41,7%), тошнота (18,3%) и боль в животе (15%). Однако основной механизм возникновения симптомов со стороны желудочно-кишечного тракта до конца не изучена.

Ключевые слова: COVID-19, ОИТ, анорексия, диарея, респираторный дистресс-синдром, SARS-CoV-2, мезентериальная ишемия.

Relevance

Changes in the gastrointestinal tract at COVID-19: While most symptomatic COVID-19 patients experience fever, cough, shortness of breath, or loss of taste and smell sensations, one-third of patients present with gastrointestinal complaints. [1]. In an initial meta-analysis of 60 studies involving 4,243 patients in China, the overall prevalence of all gastrointestinal symptoms was 17.6 percent. [2].

A post-meta-analysis of experiments in more than 18,000 patients worldwide showed that diarrhea was the most common (11.5 percent) gastrointestinal symptom, followed by nausea and vomiting (6.3 percent), followed by abdominal pain (2.3 percent). [3].

COVID-19 disease as a disease of the gastrointestinal tract: Patients with severe COVID-19 are at particularly high risk of developing gastrointestinal tract complications. Often during long-term hospitalization, 74–86% of patients with COVID-19 show gastrointestinal-related complications ranging from intolerance to self-medication to life-threatening intestinal obstruction ischemia. [4].

Researchers at Stanford University recently found that one-third of patients with mild COVID-19 had symptoms that affected the digestive system.

Another recent reliable source study published by researchers in Beijing found that 3 to 79 percent of people infected with COVID-19 develop gastrointestinal symptoms. Diarrhea is more common in people with COVID-19. A scientific article published in the American Journal of Gastroenterologists reported that 206 patients with mild COVID-19 were studied. Of these, 48 were found to have only digestive symptoms, while another 69 were found to have digestive and respiratory symptoms.

Of the total 117 people with stomach pain, 19.4 percent experienced diarrhea as the first symptom. Leading researchers analyzed clinical trials and reports of digestive system-related reports of all COVID-19 disease published between December 2019 and February 2020. They found that vomiting was observed in 3.6-15.9% of adults and 6.5-66.7% of children.

Loss of appetite during these studies Many people with COVID-19 report loss of appetite, often along with other gastrointestinal symptoms. According to the researchers, 39.9-50.2% of people with COVID-19 have symptoms of loss of appetite. [5].

About diarrhea without fever In some people, diarrhea can be like a fever, with no other symptoms like the flu. Diarrhea may be the first sign of COVID-19. [6]. In some cases, flu symptoms may appear after diarrhea. Some people may only experience gastrointestinal symptoms without developing the more common symptoms.

The relationship between COVID-19 and gastrointestinal symptoms can be explained as follows: Reliable research sources suggest that the virus that causes COVID-19 enters the digestive system through an enzyme called angiotensin-converting enzyme-2 (ACE 2) through cell surface receptors. possible. Receptors for this enzyme are 100 times more common in the gastrointestinal tract than in the respiratory tract. [7].

Risk factors observed in COVID-19: Some patients with chronic gastrointestinal disease may be at higher risk of more severe disease due to COVID-19. Potential risk factors in these patients include their chronic inflammatory diseases, joint diseases. [8].

Clinical Indications and Diagnostic Test: Symptoms of disease exacerbation that can be analyzed by COVID-19 may mimic the clinical manifestations of several gastrointestinal diseases (e.g., Crohn's

disease, ulcerative colitis) COVID-19 infection. For example, diseases manifested by diarrhea, nausea, vomiting, or anorexia. Thus, patients with a diagnosis of chronic gastrointestinal disease (GIT) should evaluate whether clinical symptoms are associated with disease progression or COVID-19.

Research data show that the detection of symptoms of diarrhea and viral RNA in feces in patients with COVID-19 allows for a favorable prognosis. In a cohort study involving 60 hospitalized patients with COVID-19, diarrhea symptoms were associated with a lower risk of death in the hospital compared to the absence of diarrhea. (OR 0.38, 95% CI 0.17-0.86). Thus, SARS-CoV-2 virus prefers the intestinal mucosa in some patients with OIT symptoms, and such patients experience a milder type of disease than patients with respiratory symptoms. In a study of 20 patients with SARS-CoV-2 pneumonia during the study, fecal samples from patients with diarrhea had higher rates of detection of SARS-CoV-2 virus RNA by real-time polymerase chain reaction than in patients without diarrhea (69% to 17%).

In a small number of patients, GIT symptoms such as diarrhea may occur or precede the development of respiratory symptoms. Although a diagnosis of COVID-19 may be suspected based on these symptoms, additional factors that determine the decision to perform a test include the patient's geographical location, risk of exposure, infection rate in the community, and test availability. [9].

Gastrointestinal Complications - Several gastrointestinal complications have been reported in severe patients with COVID-19. In a follow-up study involving 184 patients with acute respiratory distress syndrome, gastrointestinal complications were higher (74 to 37 percent) in patients with COVID-19-associated acute respiratory distress syndrome compared with COVID-19-incompatible Acute Respiratory Distress Syndrome; morbidity rate 2.33 to 95%). CI 1.52–3.63 per cent) .In particular, high levels of the virus with COVID-19 (48 to 22 per cent) were associated with intestinal ischemia (4 to 0 per cent) and increased aminotransferase levels (55 to 27 per cent). Although the propensity of patients in this single-center study was consistent with the assessment score of age, comorbidity, and serial organ failure when admitted to the intensive care unit, they were inconsistent with inflammatory symptoms associated with poor outcomes of COVID-19. It is also unclear whether it is associated with small bowel ischemia and COVID-19-associated coagulopathy. [10].

Based on the data presented in these literatures, additional studies are required because changes in the gastrointestinal tract in patients with Sovid-19 have not been fully studied. In addition, data on the significance of the occurrence of these symptoms are insufficient, as diarrhea and other gastrointestinal symptoms are frequently observed in patients with COVID-19.

Objective: To study the degree of manifestation of clinical changes in the gastrointestinal tract in patients with COVID-19.

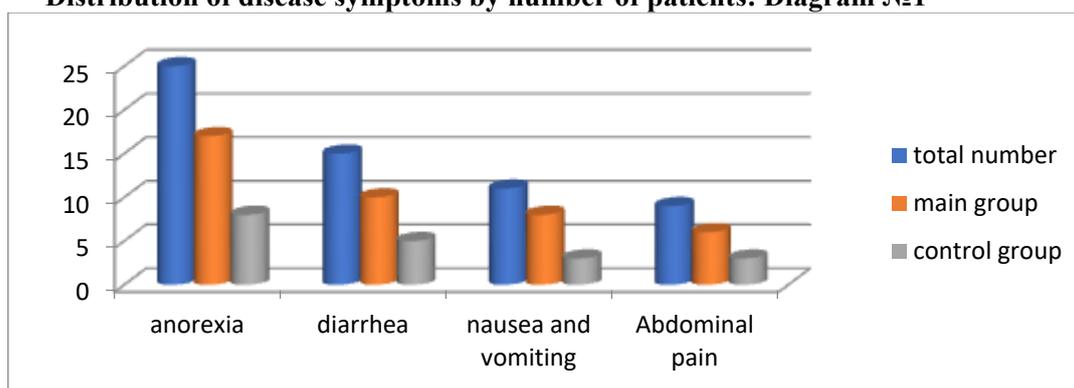
Materials and methods

The Gastroenterology Department of the Bukhara Regional Multidisciplinary Medical Center conducted research on 60 patients with previous cases of COVID-19. Of the 60 patients in the study, 40 were distributed in the main group and 20 in the control group.

Result and discussion

In the experiments conducted in the Department of Gastroenterology of the Bukhara Regional Multidisciplinary Medical Center in 60 patients hospitalized in 2021-2022, the prevalence of gastrointestinal symptoms (GIT) among patients was studied. In the main group there were 40 patients, which is 68.3%, and in the control group there were 20 patients, which is 31.7%. These include patients between the ages of 20 and 50 years. The main group consists of 22 men and 18 women. The control group consists of 11 men and 9 women. A study of 60 patients treated in the gastroenterology department revealed the number of patients with coronavirus symptoms in the gastrointestinal tract and the percentage of clinical symptoms.

Distribution of disease symptoms by number of patients: Diagram №1



As can be seen from Figure 1, the total number of patients was 60, of which 40 were in the main group and 20 in the control group. In the study of the incidence of COVID-19 in GIT symptoms, the first symptom of anorexia occurred in 25 patients. Of these, anorexia was observed in 17 patients in the main group, and anorexia in 8 patients in the control group. Symptoms of diarrhea were observed in a total of 15 patients, of which 10 were observed in the main group of patients and 5 in the patients of the control group. Nausea and vomiting occurred in a total of 11 patients. Of these, in the main group - 8 patients, and in the control group - 3 patients. Abdominal pain was observed in a total of 9 patients. Of these, 6 were observed in the main group of patients and 3 in the control group.

Diagram №2

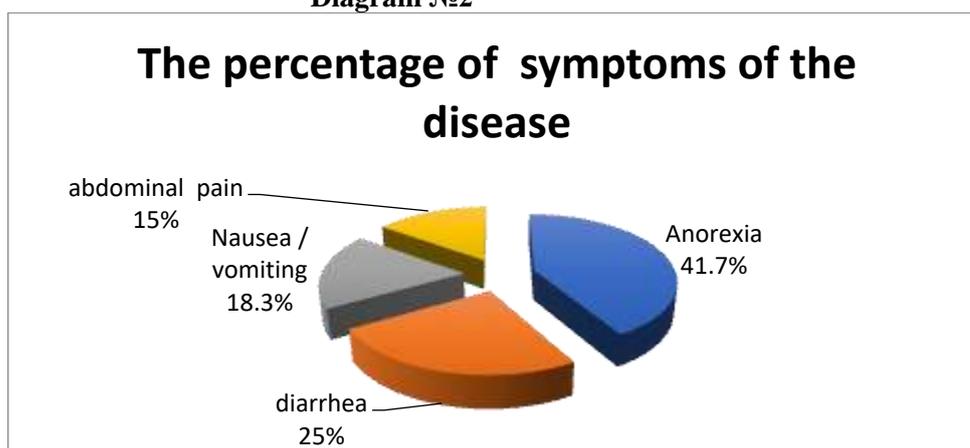


Diagram 2 shows that in general patients with COVID-19, the incidence of symptoms was as follows. 1 Anorexia was 41.7%. The second symptom was diarrhea -25%. In the 3rd place nausea and vomiting, in the 4th place the symptoms of abdominal pain were 15%

Thus, according to the results of the study, anorexia is a common symptom among patients, observed in 25 of the total patients, or 41.7%. Correspondingly, it was 28.3% among patients in the main group and 13.3% among patients in the control group.

The next most common symptom is diarrhea, which is observed in 25% of the total number of patients, or 25%. In turn, this symptom was observed in 16.67% of patients in the main group and in 8.33% of patients in the control group. In addition, one of the most common symptoms, nausea and vomiting, was also observed in 11 of the total patients, or 18.3%. Among the primary and control group patients, the rates were 13.3% and 5%, respectively.

Among these patients, abdominal pain was noted as a common observable symptom and was observed in 9 out of 15 patients, or 15%. This symptom was observed in 10% of patients in the main group, while this symptom was observed in 5% of patients in the control group.

In summary, some of the symptoms associated with COVID-19 disease in the early stages include symptoms related to the GIT system, such as vomiting or diarrhea. Detection of these symptoms can not only lead to a slowing of infection, but can also open up the possibility of identifying new treatments to reduce COVID-19 exacerbation. In order to correctly interpret the stages of the disease, and especially if

the detected viral infection is considered contagious and how it is associated with respiratory or gastrointestinal symptoms, more research is needed in that area.

In patients with COVID-19 with digestive symptoms and inflammatory bowel disease, the clinical features of the disease are a condition that compels all specialists to marry. Viral infection leads to changes in intestinal permeability, which in turn leads to enterocyte dysfunction. , When we studied what happened to coronavirus in other scientific studies, we found that diarrhea was a common symptom in patients with severe acute respiratory syndrome (SARS), and we observed that this figure was 40%, respectively.

Intestinal problems are also related to the severity of the infection. There is an increasing need for artificial ventilation and intensive care to improve respiratory function in patients with diarrhea.

Many patients with coronavirus complained of digestive symptoms such as diarrhea. There is currently insufficient evidence for the effectiveness of anti-diarrheal drugs, but as in all COVID-19 patients, adequate rehydration, i.e. stabilization of the water-salt balance in the body, has been performed. Thus, SARS-CoV-2 infection, which may be associated with OIT symptoms such as diarrhea, should be reported and screened for early diagnosis of COVID-19. Instead of waiting for respiratory symptoms to appear, this factor should be taken into account when patients suspect infection, which allows us to make an early diagnosis. Patients with COVID-19, especially those with digestive symptoms, may take longer to be hospitalized and may experience worse clinical outcomes than patients who do not suffer from these symptoms. Similarly, an average of 9 days elapsed from the onset of symptoms to hospitalization in patients with digestive symptoms, and 7.3 days in patients with respiratory symptoms. This may indicate that those with digestive symptoms were more likely to wait for a diagnosis in the hospital because they did not suspect that they were SARS-CoV-2-positive in the absence of respiratory symptoms.

It is also noted that patients with digestive symptoms have clinical manifestations such as anorexia, diarrhea, vomiting, or abdominal pain. As the active period of the disease increased, the symptoms of the gastrointestinal tract became more pronounced, but the high rate, especially in patients admitted with symptoms of anorexia, was 41.7%.

Conclusions

Our study showed that COVID-19 patients experienced gastrointestinal symptoms such as diarrhea (25%), anorexia (41.7%), and nausea (18.3%) and abdominal pain (15%). However, the underlying pathophysiology of symptoms in the gastrointestinal tract has not been fully studied.

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