Clinical changes in the gastrointestinal system as a result of the influence of Covid-19

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Abstract. Research shows that, in addition to primarily presenting as a lung infection, coronavirus infections have been re-established to have significant extrapulmonary complications that affect multiple organ systems, including the gastrointestinal tract. Patients with gastrointestinal symptoms were noted to 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 apparent, especially the high rate of patients hospitalized with symptoms of anorexia was 41.7%. Our study showed that patients with COVID-19 showed gastrointestinal symptoms such as diarrhea (25%), anorexia (41.7%) and nausea (18.3%), abdominal pain (15%).

1 Introduction

While most symptomatic COVID-19 patients present with fever, cough, shortness of breath, or loss of taste and smell, about a third of patients present with gastrointestinal complaints [1, 12, 18]. In a preliminary meta-analysis of 60 studies involving 4,243 patients in China, the overall prevalence of all gastrointestinal symptoms was 17.6 percent [2, 18, 20].

A subsequent meta-analysis of trials involving more than 18,000 patients worldwide found 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) was studied [3, 19].

COVID-19 as a gastrointestinal disease: Patients with severe COVID-19 are at particularly high risk of developing gastrointestinal complications. 74-86% of patients with COVID-19 develop gastrointestinal complications ranging from self-resolving feeding intolerance to life-threatening ileal ischemia, often with prolonged hospitalization [4, 11, 16].

Researchers at Stanford University recently found that one-third of patients with mild COVID-19 have symptoms affecting their digestive system.

Another recent reliable source study published by researchers in Beijing found that between 3 and 79 percent of people infected with COVID-19 develop gastrointestinal symptoms. Diarrhea is common in people with COVID-19. According to a scientific article published in the American Journal of Gastroenterology, 206 patients with mild cases of COVID-19 were studied. Of these, 48 people had only digestive symptoms, and another 69 had both digestive and respiratory symptoms. Out of a total of 117 people with stomach pain,

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19.4% experienced diarrhea as the first symptom. Lead scientific researchers analyzed all clinical trials of COVID-19 and gastrointestinal case reports published between December 2019 and February 2020.

Loss of appetite in these studies Many people with COVID-19 report loss of appetite, often along with other gastrointestinal symptoms. According to the researchers, 39.9 to 50.2 percent of people with COVID-19 have symptoms of loss of appetite [5, 9, 17].

About Diarrhea Without Fever Some people may have diarrhea without other flu-like symptoms, such as a fever. Diarrhea can be the first symptom of COVID-19 [6, 13]. In some cases, flu symptoms may appear after diarrhea. Some people may experience only gastrointestinal symptoms without developing more common symptoms.

The link between COVID-19 and gastrointestinal symptoms can be explained as follows: Reliable research sources indicate that the virus that causes COVID-19 enters the digestive system through cell surface receptors on an enzyme called angiotensin-converting enzyme-2 (AAF 2). possible Receptors of this enzyme are 100 times more common in the gastrointestinal tract than in the respiratory tract [7, 10, 15].

Risk factors seen in COVID-19: Some patients with chronic gastrointestinal disease may be at increased risk of more severe disease due to COVID-19. Potential risk factors in these patients include their chronic inflammatory diseases, co-morbidities [8, 8, 14].

Clinical indicators and diagnostic testing: Symptoms of disease exacerbation that can analyze COVID-19 The clinical presentation of several gastrointestinal diseases (eg, Crohn's disease, ulcerative colitis) can mimic infection with COVID-19. For example, diseases manifested by diarrhea, nausea, vomiting, or anorexia. Therefore, for patients with a diagnosis of chronic gastrointestinal tract disease (CID), clinical symptoms should be evaluated for disease exacerbation or related to COVID-19.

Research data shows that detection of viral RNA in feces and diarrhea symptoms in patients infected with COVID-19 allows for a favorable prognosis. In a cohort study of 60 patients hospitalized with COVID-19, symptoms of diarrhea were associated with a lower risk of in-hospital death compared with no diarrhea. (OR 0.38, 95% CI 0.17-0.86). Thus, the SARS-CoV-2 virus prefers the intestinal mucosa in some patients with OIT symptoms, and such patients experience a milder disease type than patients with respiratory symptoms.

A minority of patients may develop OIT symptoms such as diarrhea or may precede the development of respiratory symptoms. Although a diagnosis of COVID-19 may be suspected based on presenting symptoms, additional factors that inform the decision to test include the patient's geographic location, risk of exposure, rate of community transmission, and availability of testing. [9, 12].

Gastrointestinal Complications - Several gastrointestinal complications have been reported in patients with severe COVID-19. In an observational study of 184 patients with acute respiratory distress syndrome, patients with acute respiratory distress syndrome associated with COVID-19 had a higher rate of gastrointestinal complications compared with acute respiratory distress syndrome unrelated to COVID-19 (74 vs 37 percent; the incidence rate is 2.33 to 95 percent). CI 1.52-3.63 percent). In particular, a higher viral load with COVID-19 (22 percent for 48) was associated with intestinal ischemia (4 percent for 0 percent) and elevated aminotransferase levels (55 percent for 27 percent). Although patients in this single-center study were propensity-matched for age, comorbidity, and serial organ failure assessment score at ICU admission, they did not correlate with inflammatory markers associated with poor outcomes in COVID-19. Also, the association between small bowel ischemia and coagulopathy associated with COVID-19 is unclear [10, 16].

Based on the data presented in this literature, additional studies are required as the changes in the gastrointestinal system in patients infected with Covid-19 have not been fully studied. In addition, because diarrhea and other gastrointestinal symptoms are common in

patients with COVID-19, there is insufficient data on the significance of these symptoms [11, 12].

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

2 Material and methods

Research work was conducted on 60 patients previously infected with COVID-19 in the Gastroenterology Department of the Bukhara Regional Multidisciplinary Medical Center. 40 of the 60 patients in the study were divided into the main group and 20 into the control group.

3 Results obtained

Bukhara region experiments conducted on 60 inpatients treated in the gastroenterology department of the multidisciplinary medical center during 2021-2022, the prevalence of gastrointestinal symptoms among patients was studied. There are 40 patients in the main group, which is 68.3%, and there are 20 patients in the control group, which is 31.7%. These include patients aged 20 to 50 years [13]. There are 22 men and 18 women in the main group. The control group consists of 11 men and 9 women. According to the results of the examination of 60 patients treated in the gastroenterology department, the number of patients with symptoms of the gastrointestinal system and the percentage of clinical symptoms were determined [14].

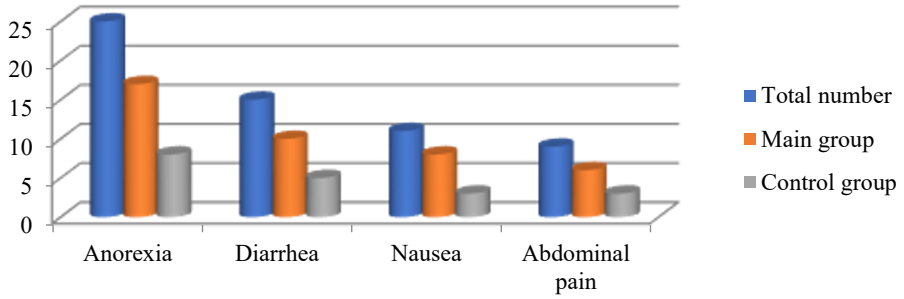

Fig. 1. Distribution of disease symptoms by number of patients.

As can be seen from diagram 1, the total number of patients is 60, of which 40 are in the main group, and 20 are in the control group [15]. When studying the level of occurrence of SOVID-19 disease according to OIT symptoms, the first symptom of anorexia was found in 25 patients. Among them, anorexia-17 patients were observed in the main group, and anorexia-8 patients in the control group. Diarrhea symptoms were observed in 15 patients, of which 10 patients were in the main group and 5 patients were in the control group. Nausea and vomiting occurred in a total of 11 patients [16]. Of these, it occurs in 8 patients in the main group, and in 3 patients in the control group. Abdominal pain was observed in a total of 9 patients. 6 of them were observed in patients of the main group, and 3 of them were observed in patients of the control group [17].

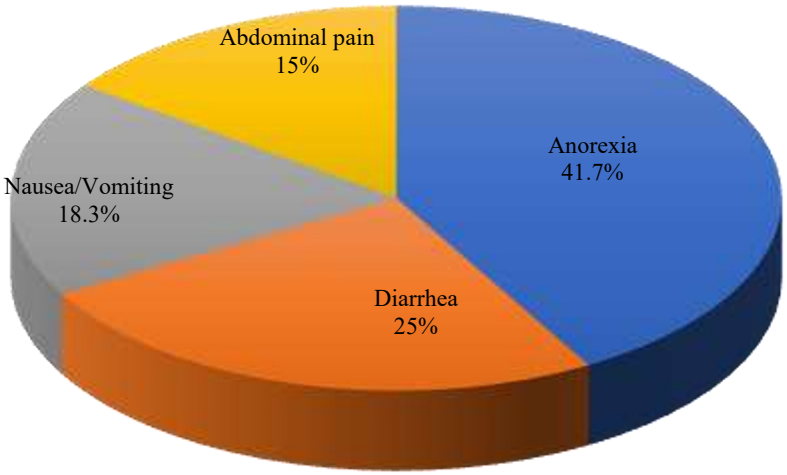

Fig. 2. Disease symptoms in percentage.

As can be seen from the 2nd diagram, the percentage of common symptoms of the disease among the general patients infected with Covid-19 was analyzed. Anorexia was in the first place - 41.7%. The 2nd symptom was diarrhea -25%. 3rd place was nausea and vomiting, 4th place abdominal pain symptom was 15%

So, according to the results of the examination, anorexia is a common symptom among patients and was observed in 25 of the total patients, i.e. 41.7%. Accordingly, it was 28.3% among patients of the main group, and 13.3% among patients of the control group.

The next most frequent symptom is diarrhea, observed in 25 of the total patients, i.e. 25%. In turn, this symptom was observed in 16.67% of patients of the main group and 8.33% of patients of the control group. In addition, one of the most observed symptoms, nausea and vomiting, was observed in 11 of the total patients, i.e. 18.3%. It was 13.3% and 5% among the main and control group patients, respectively.

Abdominal pain was noted as a common symptom among these patients and was observed in 9 of the total patients, i.e. 15%. This symptom was observed in 10% of patients in the main group, and in 5% of patients in the control group.

4 Conclusion

Some early symptoms of COVID-19 include symptoms of the OIT system, such as vomiting or diarrhea. Identifying these symptoms could not only slow down transmission, but could also open up new ways to identify new treatments that could slow the spread of COVID-19. More studies are needed to accurately interpret the stages of the disease, and especially if the identified viral infection is considered infectious and how it relates to respiratory or gastrointestinal symptoms. The clinical features of the disease in patients with COVID-19 with digestive symptoms and inflammatory bowel disease are a case that makes all specialists wonder. Viral infection causes changes in intestinal permeability, which causes enterocyte dysfunction. , when we looked at what happened with the 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 rate in turn was 40%. Bowel problems are also related to the severity of the infection. In patients with diarrhea, the need for artificial ventilation and intensive therapy to improve the functioning of the respiratory system is observed. Bowel problems are also related to the severity of the infection. In

patients with diarrhea, the need for artificial ventilation and intensive therapy to improve the functioning of the respiratory system is observed. Bowel problems are also related to the severity of the infection. In patients with diarrhea, the need for artificial ventilation and intensive therapy to improve the functioning of the respiratory system is observed.

Many patients with the coronavirus have complained of digestive symptoms such as diarrhea. There is currently insufficient evidence on the effectiveness of antidiarrheal drugs, but as in all COVID-19 patients, adequate rehydration, that is, stabilization of the water-salt balance in the body, was carried out. Thus, people with OIT symptoms such as diarrhea should be aware of possible SARS-CoV-2 infection and should be screened for early diagnosis of COVID-19. Instead of waiting for respiratory symptoms to appear, this factor should be taken into account when suspecting that patients are infected, which allows us to make an early diagnosis. Patients with COVID-19, particularly those with digestive symptoms, it may take a long time before hospital admission and may lead to worse clinical outcomes compared to patients who do not suffer from these symptoms. Similarly, patients with digestive symptoms took an average of 9 days from symptom onset to hospital admission, compared with 7.3 days for patients with respiratory symptoms. This may indicate that those with digestive symptoms waited longer to be diagnosed 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 were more clearly manifested, but especially the high rate of patients hospitalized with anorexia symptoms was 41.7%. Our study showed that patients with COVID-19 experienced gastrointestinal symptoms such as diarrhea (25%), anorexia (41.7%) and nausea (18.3%), abdominal pain (15%). However, the underlying pathophysiology of gastrointestinal symptoms is not fully understood.

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