

Prevalence of Different Gastrointestinal Manifestations in Patients with Covid 19 Presenting to Gastroenterology OPD at Rawal Institute of Health Sciences, Islamabad

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ABSTRACT

Objective: The objective behind this study was to determine the prevalence of different gastrointestinal manifestations in patients with COVID-19 presenting to gastroenterology OPD at Rawal Institute of health sciences, Islamabad

Methods: this was a descriptive observational hospital-based study conducted through a convenient sampling technique. All the adult males and females diagnosed as COVID-19 for the first time were included in this study. Pregnant females, concomitant viral hepatitis, typhoid fever, known gastrointestinal disease, and those who did not consent to participate were excluded from this study. Proforma was used to collect the relevant data. Data regarding GI symptoms were collected and presented in the form of frequency and percentages.

Results: Final analysis was performed on 193 COVID-19 positive patients. Diagnosed patients were mostly young with mean age was 39.42±18.29 years. More than 68% of the patients were males. Sixty-eight (35.23%) of the COVID-19 PCR positive patients presented with symptoms of gastrointestinal manifestations and the most common GI symptom was presence of Dysgeusia (52.94%, n = 36).

Conclusions: Most of our study subjects belongs to young age group. The prevalence of GI manifestations are quite high as observed in our study and the most common GI symptoms was dysgeusia.

Keywords: COVID-19 infection, gastrointestinal symptoms, clinical manifestation, Pakistan

INTRODUCTION

Corona is a Latin word which means "crown" because, microscopically, corona virus looks like solar corona. Coronaviruses belongs to ribonucleic acid (RNA) family and first human discovery made during 1960s. Initially, coronaviruses causes respiratory illness ranging from mild to moderate but disease outbreak was observed in 2002 leading to severe respiratory syndrome (SARS-CoV).^{1,2} Dr. Zhang Jixian considered to be the first person who reported the novel corona virus in Wuhan, China in December 2019. In a matter of time, corona virus sporadically affected the world in January 2020 and World Health Organization (WHO) declared it as global health emergency. While in Pakistan, the first case was reported in 26th February, 2020, since then, Pakistan is dealing with this disease and its aftermaths and reported more than 1200000 cases till date.³⁻⁵ Clinical manifestations of any disease helps in early diagnosis thus preventing from unnecessary clinical investigations. Clinical manifestation of COVID-19 can be mild or may be serious, depending upon the severity of the disease. That is why, patient's clinical symptoms determine underlying viral load of COVID-19, such as patient with severe disease may present with shortness of breath (SOB), severe body ache, thromboembolic events, confusion, and inability to wake or stay awake,^{1,6,7} and majority of the patients with mild disease presents with gastrointestinal (GI), symptoms such as anorexia, nausea, vomiting, loss of taste, loss of appetite, and abdominal pain or discomfort.^{8,9} The frequency of gastrointestinal symptoms vary in different studies ranging from 4.7% to 62%.¹⁰ In a recently conducted study by Sukharani N and colleagues,¹¹ from Pakistan has observed overall prevalence of GI manifestation was 63.3% and among them anorexia was the most common GI manifestation (43.9%). On the other hands, GI symptoms was observed less frequent in a multicenter study from United States (18.9%) and among them diarrhea was the most common GI manifestation observed in 15.2% of the COVID-19 positive patients.¹² This discrepancy in the published data has no proven reason and further researches are needed to make a firm conclusion. To fill the scientific gap, this study aims to determine the prevalence of GI manifestations in patients diagnosed with COVID-19.

MATERIAL AND METHODS

Considering the serious outbreak of COVID-19 and its associated complications we followed a population-based cohorts of patients from March 2021 to September 2022 who presents in the department of gastroenterology & hepatology of Rawal Institute of Health Sciences, Islamabad. Ethical approval was taken from hospital before commencement of the study. All the adult patients (age more than ≥18 – 62 years) who were diagnosed with COVID-19 were enrolled in our study irrespective of their gender. Patients who were vaccinated, or already have COVID-19, pregnant women, serious illness in which patient was unconscious, and those who do not consent to participate were excluded from this study. For the diagnosis of patients with COVID-19 infection a standardized recommended method was used in which sample of nasal/pharyngeal swab was run through real-time reverse transcriptase polymerase-chain-reaction (PCR). All the PCR positive patients were further evaluated for any gastrointestinal symptoms. Baseline and clinical data were collected and analysed using statistical package for the social sciences version 22 (SPSS v. 22). Mean and standard deviation was calculated for continuous variable such as age. While frequencies and percentages were calculated for categorical variables such as gender, area of residence, socioeconomic status, addiction habits, comorbidities, and prevalence of GI manifestations.

RESULTS

Final analysis was performed on 193 positive patients of COVID-19 PCR. Most of the COVID-19 patients were young and having mean age was 39.42±18.29 years. Age group ≥18 years – 45 years was most prevalence accounting for 64.75% (n = 125) of the patients. Also, males were predominant (68.39%, n = 132) and females accounted for 31.6% (n = 91). Residents of urban area were more common than residents of rural area, 52.84% (n = 102) vs. 48.48% (n = 96), respectively. The frequency of cigarette smokers was 15.02% (n = 29). In our study, the most common comorbid condition was presence of hypertension which was observed in 14.5% (n = 28) of the patients. Table 1.

Chart number 1 shows prevalence of GI manifestations in COVID-19 PCR positive patients. Sixty-eight (35.23%) were observed to have some sort of GI manifestations and among them,

the most common GI manifestation was dysgeusia (52.94%. n = 36) followed by nausea (39.7%, n = 27), abdominal discomfort (26.47%, n = 18), vomiting (13.23%, n = 9), anorexia (8.82%, n = 6) and least common was presence of diarrhea in 7.35% (n = 5) of patients (chart 2).

Table 1: Baseline and Clinical Characteristics of Study Participants (n = 193)

Baseline characteristics		
Age groups - years	Frequency	Percentage
≥18-45	125	64.76
≥45 - 65	68	35.23
Gender		
Male	132	68.39
Female	61	31.6
Area of residence		
Urban	102	52.84
Rural	91	47.15
Level of Education		
Illiterate	32	16.58
Primary	94	48.7
Secondary	45	23.31
≥Bachelor	22	11.39
Socio-economic status		
Lower	84	43.52
Middle	97	50.25
Upper	12	6.21
Addiction habits		
Current smoker	29	15.02
Chewable tobacco	22	11.39
Alcohol	3	1.55
Water pipe smoking	21	10.88
Co-morbid		
Hypertension	28	14.5
Diabetes mellitus	17	8.8
Chronic kidney disease	5	2.59
Chronic lung disease	8	4.14
Chronic liver disease	4	2.07
History of IHD	18	9.32
History of CVA	2	1.03

IHD = Ischemic heart disease, CVA = Cerebrovascular accident

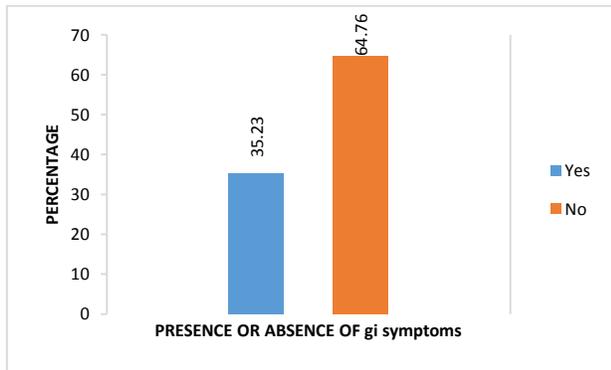


Chart 1: Prevalence of Gastrointestinal Manifestations Among Patients with Covid-19 (n = 193)

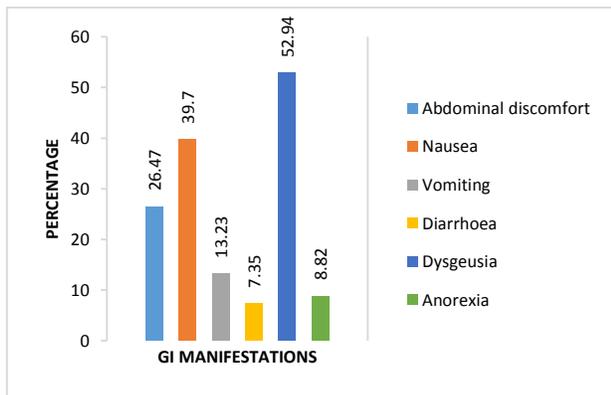


Chart 2: Gastrointestinal Manifestations Among Patients with Covid-19 (n = 193)

DISCUSSION

Since the emergency of COVID-19 infection multiple studies have been conducted to determine the disease burden, population at risk of higher disease burden, factors involved in disease susceptibility and severity, clinical manifestations, and complications.^{13,14} Among those complications, gastrointestinal manifestations are most common. The prevalence of GI complications in our study was 35.23%. Many of the previously conducted studies have shown varying results such as in a Saudi study conducted by Al Argan RJ et al.¹⁵ has shown that GI manifestation accounts for 28.5%, and a meta-analysis conducted by Merola E and colleagues,¹⁶ has observed that GI manifestations were the most common clinical manifestations and accounts for 11.51%, in another study conducted at Iraq by Sulaiman T and colleagues,¹⁷ had observed lower prevalence of GI manifestation which accounts for 23.6% of the patients admitted with COVID-19. While, study from Southern US has shown higher prevalence of GI manifestations (40.7%) among COVID-19 patients.¹⁸ A longitudinal study from Pakistan has shown highest prevalence of GI symptoms (63.3%).¹¹ Another multi-center study from Pakistan has shown lowest prevalence of GI symptoms (10.31%) among COVID-19 patients.¹⁹ These variations are possibly due to multiple reasons such as increasing age, severity of disease in which other serious complications such as SOB is more common than GI symptoms.²⁰

Dysgeusia in most of the COVID-19 patients may be the sole symptom at the time of presentation and of leads to diagnosis.²¹ In a study conducted by Nanjo Y et al²² has observed the prevalence of dysgeusia was 52.2%. This is consistent with my study's findings. The most common GI symptom in our study was presence of dysgeusia (52.94%, n = 36) followed by nausea (39.7%, n = 27), abdominal discomfort (26.47%, n = 18), vomiting (13.23%, n = 9), anorexia (8.82%, n = 6) and least common was presence of diarrhea in 7.35% (n = 5) of patients. In a meta-analysis conducted in multi-countries has shown that gustatory disturbances were most prevalent in America (66, 78%), as compared to Europe (57.18%), and East Asia (13.1%).²³ In an Iranian study conducted by Zoghi Ghazal et al²⁴ has observed nausea/vomiting (31.6%). While another study conducted by Wang X et al.²⁵ has shown diarrhea (15%) was the most common GI symptom. The reason behind this complain could be due to the use of certain drugs before admission at hospital such as moxifloxacin. Also, authors expressed that diarrhea or GI symptoms should not be ignored because it may represent transmission of COVID-19 through feco-oral route. Another study has shown higher prevalence of diarrhea 33.7% among severe COVID-19 infection and 31.6% in patients with mild COVID-19 infection.²⁶

Besides this study's good findings this study has certain limitation. First of all, the sample size is too small and secondly this study was not a multi-center study. It would have been much better if it was conducted on multi-center because geographical differences played an important role in clinical manifestations of COVID-19.

CONCLUSION

Most of our study subjects belongs to young age group. The prevalence of GI manifestations are quite high as observed in our study and the most common GI symptoms was dysgeusia.

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Ethical Statement: This study approved by Medical Research Ethics Committee

Conflict of Interest: The authors declare that there is no conflict of interest.

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