

# Research Journal of Pharmaceutical, Biological and Chemical Sciences

## A Study Of Abdominal Complications Of Patients With Mild COVID-19 Presenting To Surgical Department.

Sujatha Baskaran<sup>1\*</sup>, Rajeswari AM<sup>2</sup>, and Vasantharagavan<sup>3</sup>.

<sup>1</sup>Associate Professor, Department of General Surgery, KAPV Government Medical College, Trichy, Tamil Nadu, India

<sup>2</sup>Assistant professor, Department of General Surgery, KAPV Government Medical College, Trichy, Tamil Nadu, India

<sup>3</sup>Assistant professor, Department of General Surgery, KAPV Government Medical College, Trichy, Tamil Nadu, India

### ABSTRACT

COVID-19 respiratory illness was first identified in Wuhan, China in December 2019, caused by SARS COV - 2. Many patients with mild COVID-19 were admitted in emergency department with extra pulmonary symptoms. Our aim is to study abdominal complications of patients with mild COVID-19 presenting to surgical department. It is a single center retrospective descriptive study in patients who were diagnosed by polymerase chain reaction as antigen test for SARS COV-2 by nasopharyngeal swab samples who were eligible for study. Out of 439, 112 patients were selected with application of inclusion and exclusion criteria and 52 patients with abdominal symptoms were studied. The Mean age of the patients participated in the study is  $50.96 \pm 19.382$ . Out of 112 patients 97 (87%) are Male and 15 (13%) are Female. Abdominal complications were noted in 52 patients admitted. Majority 21(40.3%) presented with undiagnosed abdominal colic have features of sub-acute intestinal obstruction, 18 (34.7%) with Pancreatitis, 8 (15.4%) with Hemorrhagic colitis and 5 (9.6%) with Intestinal ischemia. Among the patients 31 were found with Systemic Hypertension, 30 were known Diabetic, 10 with COPD and 5 with CKD. Our study showed various symptomatology of COVID-19 patients with abdominal complications - abdomen pain, abdominal distension, vomiting, obstipation, fever, myalgia. Acute exacerbation of already existing pancreatitis is one of the major abdominal complication in post covid patients

**Keywords:** COVID-19, Abdominal complications, Pancreatitis.

<https://doi.org/10.33887/rjpbcs/2024.15.3.19>

*\*Corresponding author*

## INTRODUCTION

Originating in Wuhan, China, the coronavirus 2019 disease (COVID-19) has spread rapidly around the world, bringing regular life to a complete halt in nearly every nation [1]. The severity varies from life threatening respiratory failure ARDS (acute respiratory distress syndrome) to asymptomatic patients and various other manifestations. The clinical symptoms typical of COVID-19 are fever, cough, difficulty in breathing, myalgia. Gastrointestinal manifestations are most common extrapulmonary manifestation of COVID-19 and the incidence range from 3-61% [2]. Despite being primarily a lung disease, COVID-19 has now been shown to have extensive extra-pulmonary involvement that affects several organ systems. The highly virulent spike protein of SARS-CoV-2 binds effectively to the angiotensin converting enzyme 2 (ACE2) receptors, which are expressed in a variety of organs, including the central nervous system, the kidneys and gastrointestinal tract, the lung parenchyma, the airways, and the smooth and skeletal muscles of the body [3]. Patients with COVID-19 frequently experience gastrointestinal symptoms, such as nausea, vomiting, diarrhea, anorexia, and abdominal discomfort [4]. Diarrhea was the predominant symptom of the 2002–2003 SARS illness, manifesting in 16%–73% of SARS patients primarily during the initial week of infection [5]. Out of 204 COVID-19 patients in Hubei China, only 99 (48.5%) had gastrointestinal signs as their chief complaint. Among the several digestive symptoms seen by these COVID-19 patients were vomiting (0.8%), diarrhea (29.3%), anorexia (83.8%), and abdominal discomfort (0.4%) [6]. Patients with COVID-19 who experience GIT symptoms are more likely to have serious side effects, such as ARDS and liver damage, and their prognosis is poor. Therefore, GIT symptoms and viral transmission through the fecal-oral channel should be considered during the disease's diagnosis and therapy. Patients with chronic liver disease should also be taken care of, and drugs that can shield liver functions from COVID-19 and stop inflammatory reactions should be used in their treatment. Additionally, it's important to regularly identify and assess the negative effects that some medications have on the liver and stomach throughout hospital stays [7]. The abdominal complications report for COVID-19 was addressed for previous strain but not adequately elucidated for latent omicron variant. Many patients with mild COVID-19 were admitted in emergency department with extra pulmonary symptoms [8].

## METHODOLOGY

After obtaining approval from Scientific Research Committee and Institutional Human Ethical Committee the study was conducted in the department of General Surgery. It is a single center retrospective descriptive study in patients who were diagnosed by polymerase chain reaction as antigen test for SARS COV-2 by nasopharyngeal swab samples who presented from June 2021 to June 2022 were eligible for study. Patient transferred from other hospitals as delivered by ambulance were avoided to decrease bias to target patients with mild COVID-19. Inclusion criteria includes patients affected with COVID-19 presenting with abdominal manifestations to COVID department. Exclusion criteria were age under 18 years old and pregnant women, COVID ICU admissions. Endoscopy cannot be easily performed since there is an increased risk of COVID-19 transmission. Endoscopy was not mandatory for diagnosis in this study. Out of 439, 112 patients with abdominal symptoms were selected with application of inclusion and exclusion criteria were studied. The data collected were entered in Microsoft Excel 2019 and the results were analyzed using SPSS software version 23.0. Quantitative data was expressed in Mean, Frequency and Distribution. Pie charts and Bar diagrams were used to represent the data pictographically

## RESULTS

**Figure 1: Frequency distribution of age among patients (n = 112)**

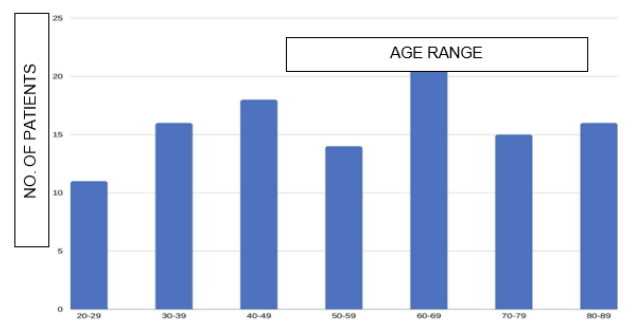


Figure 1 shows that majority of the patients 22 (19.7%) were between the age group of 60–69.

Followed by 18 (16%) patients belonging to the age group of 40 – 49, 16 (14.3%) patients of age 30-39 years and 80-89 years. About 15 (13.3%) were between 70 – 79 years, 14 (12.6%) of 50-59 years and 11(9.9%) of 20 -29 age group. The Mean age of the patients participated in the study is  $50.96 \pm 19.382$ .

**Figure 2: Frequency distribution of Gender among patients (n = 112)**

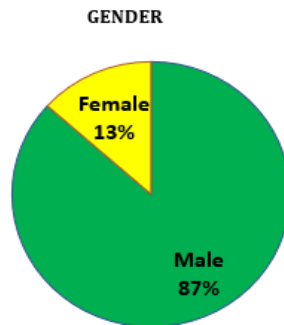


Figure 2 is a Pie chart represents the Gender distribution among patients. Out of 112 patients 97 (87%) were Male and 15 (13%) Female.

**Figure 3: Frequency distribution of comorbidities among patients (n = 112)**

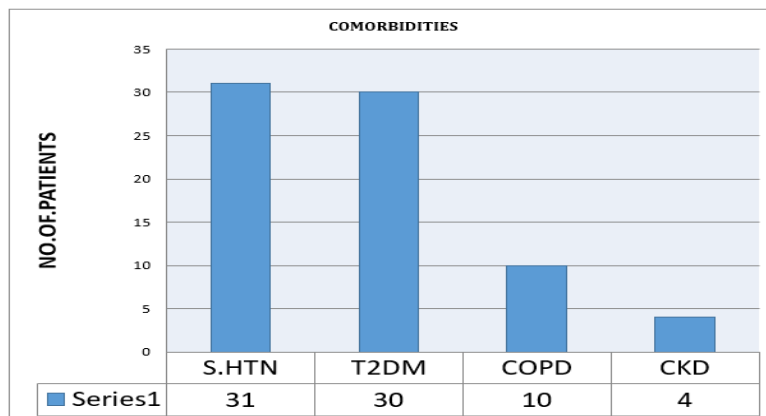


Figure 3 is a simple Bar chart which shows that out of total 112 patients 31 were found with Systemic Hypertension, 30 patients were known Diabetic, 10 had Chronic Obstructive Pulmonary Disorder and 4 had chronic kidney disease.

**Figure 4: Frequency distribution of common symptoms among patients (n = 112)**

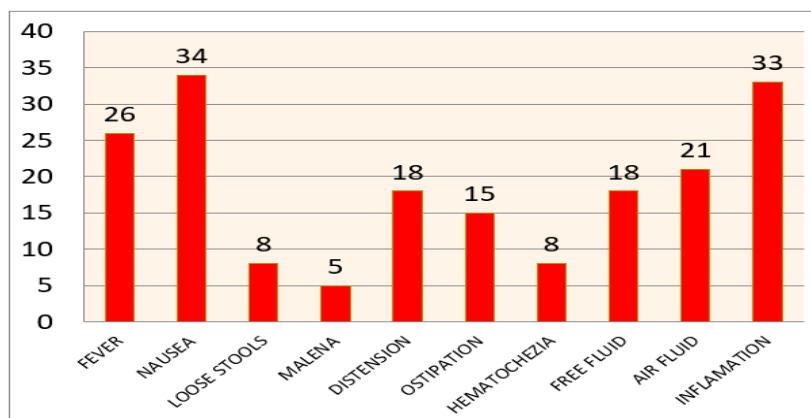


Figure 4 is a bar chart that shows the common symptoms noticed among patients. Majority of patients 34 (30.3%) had Nausea, Inflammation was noted in 33 (29.5%) and Fever among 26 (23.2%) patients. About 21 (18.7%) had Air fluid, 18 (16%) had Free fluid and 18 (16%) had abdominal distension. Out of 112 patients 15 (13.3%) had Obstipation, 8 (7.1%) had loose stools, 8 (7.1%) and 5 (4.4%) had Haematochezia and Malena respectively.

**Figure 5: Frequency distribution of complications among patients (n = 112)**

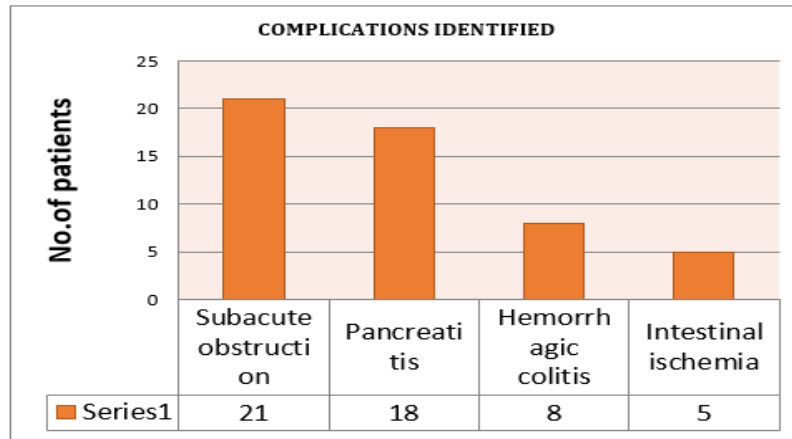


Figure 5 is a simple bar chart which shows the Complications noted among patients. Majority 21 (40.3%) had Subacute obstruction, 18 (34.7%) had Pancreatitis, 8 (15.4%) had Hemorrhagic colitis and 5 (9.6%) was diagnosed with Intestinal ischemia.

### DISCUSSION

Out of 112 patient's majority were Male 97 (87%) in our study. Whereas in Maruyamma S et al study large portion of the patients were Female [2]. About 34 (30.3%) had nausea as common symptoms in our study and similar findings were noted in Hajifathalian et al, Chen et al and Kujawski et al study [8-10]. Bleeding and ischemic manifestations are also frequent, with spontaneous hematomas in soft tissues being the most common. Ischemic and hemorrhagic abdominal complications such as ischemic colitis, small bowel ischemia, retroperitoneal bleeding and others may occur in patients with COVID-19 [11]. COVID-19-induced colitis that presents with abdominal pain, watery diarrhea and gastrointestinal bleeding consistent with an acute hemorrhagic colitis was reported as an uncommon occurrence [12]. Two injury mechanisms of inflammatory responses induced by COVID-19 have been reported: one is mediated by angiotensin-converting-enzyme (ACE)-2 receptors, and the other is independent of ACE-2 receptors [13]. One of the major complications noted in our study is subacute obstruction 21(40.3%) similar to the study Philip S et al [14]. The second most common complication noted here is Pancreatitis 18 (34.7%) and the study done by Abramczyk U et al shows that COVID-19 causes pancreatic dysfunction [15].

### CONCLUSION

Hence our study showed COVID-19 patients may present with abdominal complications such as intestinal obstruction with features of abdominal distension, vomiting, obstipation, fever, myalgia. Pancreatitis also occur in patients with mild COVID-19 which may be exacerbation of already existing chronic pancreatitis which may be managed conservatively. Some patients affected with COVID-19 may also present with severe pancreatitis which need management in ICU. Out of 5 patients presented with intestinal ischemia two Patients found to have ileal gangrene two patients found to have jejunal gangrene and one patient was presented with superior mesenteric artery thrombosis. These patients were managed with emergency laparotomy and stoma placement followed by Heparin injection and strict monitoring. Two patients presented with abdominal complications were died. Five patients presented with a cute hemorrhagic colitis were managed conservatively.

## REFERENCES

- [1] COVID-19 cases | WHO COVID-19 dashboard [Internet]. datadot [cited 2024 Feb 25]; Available from: <https://data.who.int/dashboards/covid19/cases>
- [2] Maruyama S, Wada D, Oishi T, Saito F, Yoshiya K, Nakamori Y, et al. A descriptive study of abdominal complications in patients with mild COVID-19 presenting to the emergency department: a single-center experience in Japan during the omicron variant phase. *BMC Gastroenterology* 2023;23(1):43.
- [3] Benedetti C, Waldman M, Zaza G, Riella LV, Cravedi P. COVID-19 and the Kidneys: An Update. *Front Med (Lausanne)* 2020; 7:423.
- [4] Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China. *JAMA* 2020;323(11):1061-9.
- [5] Ruan Q, Yang K, Wang W, Jiang L, Song J. Clinical predictors of mortality due to COVID-19 based on an analysis of data of 150 patients from Wuhan, China. *Intensive Care Med* 2020;46(5):846-8.
- [6] Pan L, Mu M, Yang P, Sun Y, Wang R, Yan J, et al. Clinical Characteristics of COVID-19 Patients with Digestive Symptoms in Hubei, China: A Descriptive, Cross-Sectional, Multicenter Study. *Am J Gastroenterol* 2020; 115:10.14309/ajg.0000000000000620.
- [7] Mohamed DZ, Ghoneim MES, Abu-Risha SES, Abdelsalam RA, Farag MA. Gastrointestinal and hepatic diseases during the COVID-19 pandemic: Manifestations, mechanism and management. *World J Gastroenterol* 2021;27(28):4504-35.
- [8] Hajifathalian K, Krisko T, Mehta A, Kumar S, Schwartz R, Fortune B, et al. Gastrointestinal and Hepatic Manifestations of 2019 Novel Coronavirus Disease in a Large Cohort of Infected Patients From New York: Clinical Implications. *Gastroenterology* 2020;159(3):1137-1140.e2.
- [9] Chen N, Zhou M, Dong X, Qu J, Gong F, Han Y, et al. Epidemiological and clinical characteristics of 99 cases of 2019 novel coronavirus pneumonia in Wuhan, China: a descriptive study. *Lancet* 2020;395(10223):507-13.
- [10] COVID-19 Investigation Team. Clinical and virologic characteristics of the first 12 patients with coronavirus disease 2019 (COVID-19) in the United States. *Nat Med* 2020;26(6):861-8.
- [11] Gastrointestinal Bleeding in COVID-19 Patients - PMC [Internet]. [cited 2024 Feb 25]; Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9328937/>
- [12] Stawinski P, Dziadkowiec KN, Marcus A. COVID-19-Induced Colitis: A Novel Relationship During Troubling Times. *Cureus* 13(6):e15870.
- [13] Vaduganathan M, Vardeny O, Michel T, McMurray JJV, Pfeffer MA, Solomon SD. Renin-Angiotensin-Aldosterone System Inhibitors in Patients with Covid-19. *N Engl J Med* 2020; NEJMs2005760.
- [14] An epidemic of sub-acute intestinal obstruction during Covid-19 pandemic related lockdown - 'the lockdown belly' [Internet]. [cited 2024 Feb 25]; Available from: <https://bjssjournals.onlinelibrary.wiley.com/doi/epdf/10.1002/bjs.11803>
- [15] Abramczyk U, Nowaczyński M, Słomczyński A, Wojnicz P, Zatyka P, Kuzan A. Consequences of COVID-19 for the Pancreas. *Int J Mol Sci* 2022;23(2):864.