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# INCIDENCE AND SEVERITY OF STRESS ULCER AND GIT BLEEDING IN PATIENTS WITH SEVER COVID-19

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**ABSTRACT**

In the current literature, nausea, vomiting, and other gastrointestinal symptoms have been discussed A probable cause of coronavirus illness is diarrhea, abnormal liver chemistries, and hyperlipaemia. 2019 In this population, the risk and type of gastrointestinal bleeding (GIB) are not well understood properly described. A 1:1 case-control study of 20 individuals with GIB, 16 upper and 5 lower, was conducted There were 41 matched controls of patients with GIB-free COVID-19. In both cases and controls, there was no difference in presenting symptoms COVID-19 symptoms were found to be severe (P 0.05). COVID-19 patients with GIB are more likely than COVID-19 patients without GIB to have an increased risk of death Initial signs and symptoms were the same for both patients. The majority of persons with high and low GIBs are in this group Peptic ulcer illness was the most common cause. respectively It appears that conservative management is a good first step in dealing with these difficult instances. Our data reaffirms that elderly patients with various comorbid illnesses are more likely to die from COVID-19 infection.



## 1. INTRODUCTION

A severe acute form of the coronavirus (COVID-19) SARS coronavirus 2 (SARS-CoV-2) has spread around the world Globalization is moving quickly from China toward all other countries. One of the symptoms of the condition is fever, cough, myalgia, weariness, and other common symptoms pneumonitis in addition to several cases of gastroenteritis) Neurological problems and other symptoms, such as diarrhea [1]. The severe inflammation that accompanies COVID-19 with a surge in the acute phase reactants known as a "cytokine storm)"C-reactive protein, ferritin, and coagulopathy are all examples of phase reactants the factors that could increase the likelihood of bleeding in particular the gastrointestinal tract [4]. Societies have been challenged by the rapid spread of this viral disease and in many nations, this resulted in harsh quarantine and "lockdown. “since there is no other way to stop the spread of the disease in the lack of access to treatment and vaccination [5- 8]. The Austrian government imposed a state of emergency on all of its citizens on 16Until March of 2020, no one would be permitted to leave the country those who must leave their houses for various reasons such as going to workshopping, helping others, and limited outside activities When you're on your own or with other members of your household. As a result of the emergency lockout, some people were immediately concerned People may suffer negative consequences if they do not

have access to treatment. Indeed, as a result of the Austrian lockout, overall sales dropped by 40%. admissions to Austrian hospitals for patients with acute coronary syndrome [9] Emergency department visits in the first year are on the rise in the United Kingdom Reduced by 49% in the week following the lockdown, including cardiac problems and conditions of the digestive tract [10]. One of the most prevalent medical emergencies is acute upper gastrointestinal hemorrhage. These patients' endoscopic findings include the following: esophagus or gastric peptic ulcer bleeding occurs in roughly 60% of patients. Approximately 10% of endoscopies reveal varices and other abnormalities conditions such as bleeding reflux disease or Mallory–Weiss tears [11]. The Acute upper gastrointestinal bleeding is more common in Western countries.to have a rate of 100 per 100 000 adults each year with 8.8 million people, we might expect 170 people in Austriaa weeks' worth of hemorrhages We were curious to see how the lockdown worked. May have influenced the frequency of upper gastrointestinal hemorrhage in the event of an urgent endoscopy.

## 2. METHODS

For the six-month period from February 1, 2020, to August 1, 2020, all verified COVID-19 cases with GIB admitted to al-Hindia general hospital were analyzed in this retrospective study The diagnosis of COVID-19 was given to 41 individuals who were admitted to the hospital.

### *2.1 Choosing the Right Patient*

Patients admitted with a positive polymerase chain reaction (PCR) test on a nasopharyngeal swab specimen for covid.19 infection were included. Patients' mortality status was monitored until October 1, 2020, when they were discharged. Patients having a "Do Not Resuscitate" order were not included in the study. E-medical records yielded demographic information such as a patient's date of birth, gender, and race (EMR). Comorbid medical diseases include hypertension, diabetes, HIV, hepatitis B, cirrhosis, congestive heart failure and chronic renal disease. We collected data on these conditions.

### *2.2 Bleeding from the Stomach*

We looked at electronic medical records to see if any COVID-19-infected patients were admitted to the hospital with symptoms of GI illness. There was no other way to identify individuals with GI bleeding beyond those who had overt signs of bleeding, such as coffee ground emesis, hematemesis, melena or rectal bleeding. Patients with major gastrointestinal bleeding were characterized as requiring more than two units of packed red blood cells to be transfused or a drop in hemoglobin by 2 g/dl that was due to bleeding. heartbeats per minute. At 100 beats per minute, at 100 mm Hg for the systolic pressure, or by using a special a strategy to deal with a possible gastrointestinal bleeding.

### *2.3 Medications and Tests in the Laboratory*

Anticoagulation dosage was classified as therapeutic or prophylactic based on EMR documentation. Mechanical ventilation and steroids were detected by computerized algorithms while in the hospital. At the presentation, the first set of laboratory data points were examined.

A study of data

Analysis of the data was carried out using SPSS version 19. The t-test was used to evaluate continuous variables and the means and standard deviations were expressed. Categorical parameters, given as frequencies and percentages, were subjected to Pearson's Chi-square test. Logistic regression was used to examine the link between gastrointestinal bleeding and mortality, as well as additional univariate studies.

### *2.4 AIM*

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We looked at how often GI bleeding occurred and how that affected the in-hospital mortality rate in our patients, who were all suffering from covid.19

## 3. RESULTS

**Table 1.** Demographic and clinical results of patients with COVID-19 with GI hemorrhage and matched controls

| GI bleeding | Controls n= 41 | Cases n = 20 | P value |
|---|---|---|---|
| Demographics | | | |
| Age, mean (SD), yr | 65.6 (14.3) | 67.7 (15.1) | 0.087 |
| BMI, mean (SD) kg/m2 | 25.3 (6.3) | 27.1 (6.9) | 0.811 |
| sex—no. (%)Male | 27 (66) | 13 (66) | NA |
| GI bleeding history —no. (%) | 2 (5) | 5 (27) | 0.005 |
| Co-existing conditions—no. (%) | | | |
| Diabetes (DM) | 13 (32) | 8 (37) | 0.5 |
| Disease ofcardiovascular | 10 (24) | 5 (24) | NA |
| Hypertension | 24 (60) | 13 (66) | 0.511 |
| Congestive heart failure | 5 (11) | 1 (5) | 0.251 |
| asthma | 7 (16) | 3 (12) | 0.596 |
| Disease ofChronic liver | 1 (2) | 1 (5) | 0.487 |
| Medications—no. (%) | | | |
| Aspirin | 7 (16) | 3 (15) | 0.856 |
| Therapeutic anticoagulant | 11 (27) | 8 (39) | 0.536 |
| Chronic used steroids | 3 (7) | 3 (15) | 0.212 |
| NSAIDs | 5 (13) | 4 (17) | 0.571 |
| Symptoms – no. (%) | | | |
| Cough | 32 (77) | 13 (64) | 0.112 |
| Fever | 33 (80) | 12 (61) | 0.028 |
| Shortness breath | 31 (76) | 11 (54) | 0.017 |
| Anorexia | 13 (32) | 3 (17) | 0.101 |
| Diarrhea | 13 (33) | 5(27) | 0.518 |
| Anosmia | 1 (4) | 0 (0) , | 0.001 |

P values are calculated using Student t and x2 tests.; COVID-19, Coronavirus disease 2019; GI, gastrointestinal;; NA, not applicable; NSAID, nonsteroidal anti-inflammatory drug. Body mass indexBMI

**Table 2.** Vital signs and laboratory findings of patients with COVID-19 and GI bleeding and matched controls

| GI bleeding | Controls, n = 41 | Cases, n = 20 | P value |
|---|---|---|---|
| Admission vital signs, mean (SD) | | | |
| Presence of fever (.37.8 C) | 8 (25) | 3 (17) | 0.762 |
| Mean arterial pressure,mmHg | 94 (13) | 91 (20) | 0.144 |
| Mean heart rate, bpm | 91 (17) | 98 (22) | 0.048 |
| Mean respiratory rate | 23 (5) | 23 (7) | 0.738 |
| Hypoxia (%)a | | | 0.229 |
| Severe | 19 | 17 | |

| | | | |
|---|---|---|---|
| Moderate | 16 | 8 | |
| No | 14 | 11 | |
| Laboratory values, mean (SD) | | | |
| Peak Hgb, g/dL | 13.4 (2.0) | 11.5 (2.4) | ,0.001 |
| Nadir Hgb, g/dL, | 10.5 (2.4) | 7.6 (1.7) | 0.001 |
| White blood cell count, 103 mL21 | 8.4 (3.9) | 9.1 (5.1) | 0.333 |
| D-dimer, ng/mL | 2,222 (5,158) | 4,337 (7,728) | 0.436 |
| Platelet count, 103 mL21 | 224 (93) | 251 (140) | 0.227 |
| C-reactive protein, mg/dL | 18.29 (15.92) | 15.14 (10.43) | 0.196 |
| Ferritin, ng/mL | 1,395 (2087) | 2,476 (5,785) | 0.43 |

P values are calculated using Student t and x2 tests.

gastrointestinal; Hgb, hemoglobin, aHypoxia is defined as oxygen saturation,92%, mild—on room air or up to 2 L nasal cannula, moderate—requiring. 2 L nasal cannula, severe—requiring high-flow nasal cannula or mechanical ventilation.

**Table 3.** Characteristics of COVID-19 patients with upper and lower GI hemorrhage and its care.

| | Patients with upper GIB, n =15 | Patients with lower GIB, n =5 | P value |
|---|---|---|---|
| GI bleeding manifestation—no. (%) | | | <,0.001 |
| Male sex – no. (%) | 10 (67) | 3 (63.6) | 0.857 |
| Age, mean (SD), yr | 69.4 (16.2) | 63.0 (11.2) | 0.233 |
| Hematemesis | 1 (6) | 0 (0) | |
| Melena | 10 (65) | 0 (0) | |
| Coffee-ground emesis | 1 (6) | 0 (0) | |
| Bloody NGT output | 1 (3) | 0 (0) | |
| Maroon-colored stool | 2 (13) | 0 (0) | |
| Hematochezia | 1 (3) | 5 (100) | |
| Melena and hematochezia | 1 (3) | 0 (0) | |
| In patients -hospital factors | | | |
| ICU Admission—no. (%) | 6 (39) | 4 (70) | 0.11 |
| Intubation—no. (%) | 6 (39) | 4 (70) | 0.15 |
| Time from admission to bleeding (SD), d | 5.8 (7.7) | 7.1 (8.6) | 0.964 |
| Time from bleeding to endoscopy (SD), d | 2.3 (2.0) | 1.3 (1.1) | 0.308 |

P values are calculated using Student t and x2 tests.
COVID-19, Coronavirus disease 2019; GI, gastrointestinal; GIB, gastrointestinal bleeding; ICU, intensive care unit; NA, not applicable; NGT, nasogastric tube.

**Table 4.** Potential factors affecting GI bleeding in COVID-19\spatients with upper and lower GI bleeding

| | Patients with upper GIB, n =15 | Patients with lower GIB, n =5 | P value |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Anticoagulation—no. (%) | | | 0.45 |
| Enoxaparin | 3 (16) | 2 (30) | |
| Heparin | 5 (32) | 1 (10) | |
| Warfarin | 1 (3) | 0 (0) | |
| NOAC | 1 (3) | 0 (0) | |
| Combined | 2 (10) | 1 (20) | |
| Anticoagulation dose—no. (%) | | | 0.45 |
| Therapeutic | 6 (39) | 2(40) | |
| Prophylactic | 5 (32) | 1(30) | |
| None | 5 (29) | 2(30) | |
| Antiplatelet – no. (%) | | | 0.759 |
| None | 8 (48) | 3 (60) | |
| ASA | 7 (42) | 2 (40) | |
| P2Y12 | 1 (3) | 0 (0) | |
| DAPT | 1 (6) | 0 (0) | |
| Antisecretory therapy—no. (%) | | | |
| PPI before GI bleeding | 4 (26) | 2 (30) | 0.795 |
| PPI after GI bleeding | 16 (100) | 3 (60) , | <0.001 |
| H2RB use | 2 (13) | 1 (20) | 0.584 |

P values are calculated using Student t and x2 tests.
ASA, aspirin; COVID-19, Coronavirus disease 2019; DAPT, dual antiplatelet agent; GI, gastrointestinal; GIB, gastrointestinal bleeding; H2RB, histamine-2 receptor blocker; NOAC, novel oral anticoagulants; P2Y12, clopidogrel, prasugrel; PPI, proton-pump inhibitor.

**Table 5.** Multivariable analysis of possible risk factors in patients admitted with COVID-19

| Risk factor | Odds ratio | 95% confidence interval | P value |
|---|---|---|---|
| upper GI bleeding | | | |
| History of GIB | 3.94 | 1.07–14.64 | 0.040 |
| PPI use before GIB | 1.02 | 0.29–3.48 | 0.988 |
| NGT | 1.3 | 0.2–7.11 | 0.841 |
| ICU admission | 1.38 | 0.29–6.66 | 0.684 |
| Therapeutic anticoagulation | 1.83 | 0.49–6.97 | 0.37 |
| History of GIB | 1.92 | 0.06–62.2 | 0.714 |
| Lower GI bleeding | | | |
| ICU admission | 0.3 | 0.01–3.43 | 0.265 |
| Therapeutic anticoagulation | 1.41 | 0.14–15.01 | 0.768 |
| Rectal tube | 30.3 | 0.66–1,402.32 | 0.081 |

P values are calculated using Student t and x2 tests.
COVID-19, Coronavirus disease 2019; GI, gastrointestinal; GIB, gastrointestinal bleeding; ICU, intensive care unit; NGT, nasogastric tube; PPI, proton pump inhibitor

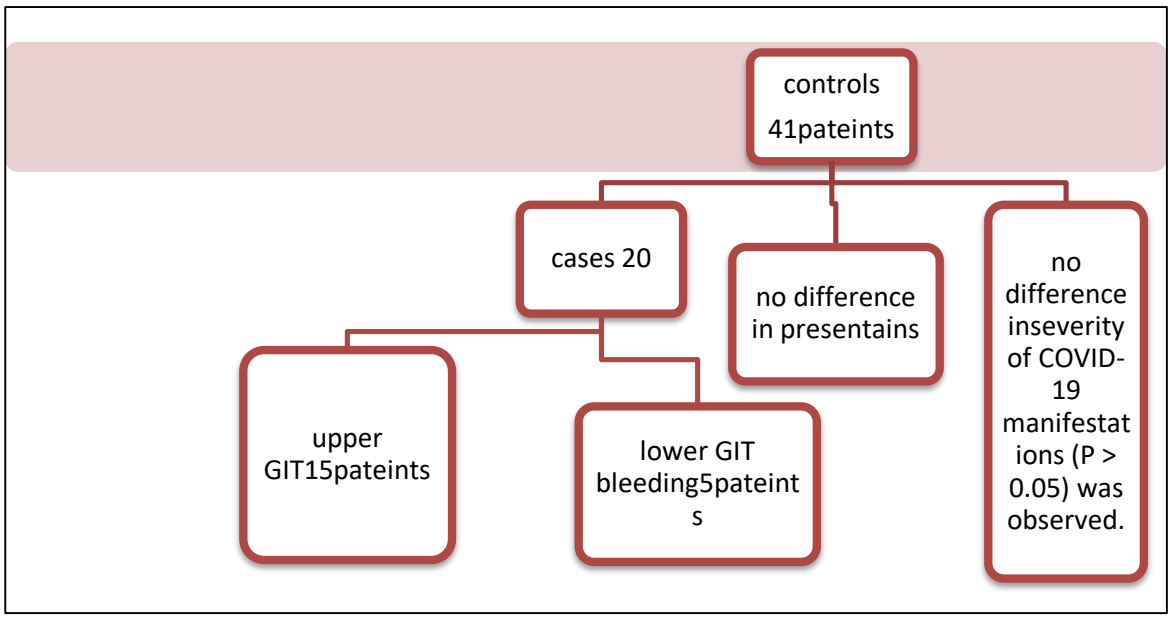


**Figure 1** show summary of study

## 4. DISCUSSION

The percentage of COVID-19-infected patients who suffered gastrointestinal bleeding during their stay at the hospital patients with no gastrointestinal bleeding had much more use of the drug Steroids, anticoagulant therapy, and mechanical ventilation are all necessary. However, gastrointestinal bleeding was not associated with an increased risk of death in these patients. This was not related with a significantly increased risk of mortality in the hospital even after correcting for well-established risk factors such as the necessity of mechanical ventilation, the use of corticosteroids, and gastrointestinal bleeding. There is a wide range of GI bleeding rates in intensive care units (ICUs) 1.5% to 5.5% [13], [14]. It's possible that discrepancies in ICU evaluation standards at different institutions are to blame for this variation. In our research, 3.1% of the COVID- 19 patients experienced gastrointestinal bleeding while in the hospital. Non-Covid hospitalized patients may get GI bleeding at a rate of 0.005 percent to 0.4%, but this is significantly greater [15], [16]. Many critically sick patients need specialized care as a result of changes in ICU triage protocols brought on by the pandemic's spike in COVID-19 cases. All patients hospitalized with COVID-19 who had GI bleeding were evaluated, so we could identify those who were seriously unwell but treated outside of the ICU. Most patients with GI bleeding were treated conservatively because of the danger of COVID-19 dissemination from oropharyngeal secretions during endoscopy. Our study found that patients who died from COVID-19 were older and had more comorbid diseases, such as hypertension, diabetes mellitus, chronic obstructive pulmonary disease, and chronic renal disease. Lactate dehydrogenase, C-reactive protein, and lymphocyte count have previously been demonstrated to indicate poorer outcomes in patients with COVID-19 [19- 21]. The findings of our investigation add to the evidence that these laboratory indicators of COVID-19 infection severity are accurate. Neutrophils, D dimer, C reactive protein, and ferritin are all elevated. as well as worse outcomes were predicted by lower levels of serum albumin. Mechanical ventilation is associated with an increased mortality risk in individuals with COVID-19. 20 Patients infected with COVID-19 have been given corticosteroids as part of their treatment. Research from seven randomised controlled trials shows that steroids can reduce the mortality of critically ill COVID-19 patients. 21 Steroids tend to be given to patients with severe COVID-19 disease, therefore their outcomes tend to be worse. Patients with severe pulmonary illness were given corticosteroids in our study. Those who received corticosteroids were more likely to die than those who did not, because of the severity of their sickness (23.8 percent vs 16.6 percent, p 0.002).

Thromboembolic events have been documented in patients with COVID-19 Anticoagulation has been shown to improve the survival of these individuals in several investigations 23 COVID-19 patients who received anticoagulation at therapeutic levels had a lower mortality rate, according to a comprehensive evaluation of four studies. 24 Although anticoagulation has therapeutic benefits, the danger of increased bleeding must be weighed against them. Major bleeding induced by oral anticoagulants result in a 13.4% death rate. 25 Patients with gastrointestinal bleeding were more likely to be treated with anticoagulation at therapeutic levels in our study (29.7 percent vs 12.8 percent, p 0.003). Those who received anticoagulation in therapeutic doses had more severe COVID-19 symptoms and a greater death rate. For the individuals who died while on anticoagulation, there was no significant difference between those who had gastrointestinal bleeding and those who did not have gastrointestinal hemorrhage (48 percent vs 45.5 percent, p 0.871). Proton pump inhibitors (PPI) and histamine-2 (H2) receptor blockers were more commonly prescribed to patients with gastrointestinal bleeding. In both treatment and prevention of gastrointestinal bleeding, various agents are used. In our study, patients who got steroids, anticoagulant therapy, and mechanical ventilation had a greater mortality rate Hospitalization was associated with an increased risk of gastrointestinal hemorrhage [9], [10]. Nonetheless, as previously mentioned, GI bleeding did not enhance mortality in critically ill individuals 10 We used multivariate regression to see if GI bleeding is an independent predictor of mortality in patients with COVID-19, and we accounted for other risk factors. Only 1.5% of patients who survived had substantial gastrointestinal bleeding, compared to 1.5% of patients who died (p = 0772). The occurrence of gastrointestinal bleeding did not increase mortality in our study patients, as has been shown in other severe conditions. Larger investigations are needed to confirm our findings due to the small number of patients who experienced gastrointestinal bleeding in our study.

Retrospective and single-center design are two of the study's drawbacks. Patients who have a history of peptic ulcers may be at an increased risk of gastrointestinal bleeding. Instead of the Charleston comorbidity index, we compare a variety of comorbid conditions between the two groups. A patient's dynamic factors were not taken into account in our study because they were gathered at the time of admission, not throughout their hospitalization. Furthermore, we were unable to determine the cause of gastrointestinal bleeding because of the absence of endoscopic evidence in most of our patients. We wanted to see if GI bleeding was a risk factor for death in COVID-19 disease. Endoscopic versus cautious therapy of gastrointestinal bleeding cannot be determined conclusively based on our research design. There were two individuals in our study who needed endoscopy to treat gastrointestinal bleeding. There was no difference in mortality rates between individuals who underwent endoscopies within 24 hours and those who had them later in the day, according to a retrospective Italian study.

## 5. CONCLUSION

COVID-19-infected seniors with several underlying health issues have a greater mortality risk, according to our findings. Mechanical ventilation, anticoagulants, and steroids were statistically more common in the GI bleeding group. COVID-19 individuals with GI bleeding did not have a poorer result or mortality.

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