

## INTRODUCTION

- Coronavirus-19 (COVID) is primarily a respiratory virus which is known to impact the gastrointestinal tract through propagation of a proinflammatory cytokine cascade.
- It is unknown if inflammation from COVID, acuity of illness due to COVID or other factors such as medications or co-morbidities increase the risk of bleeding in COVID-19 patients as compared to non-COVID infected patients.

## AIM

- To examine differences in characteristics between admitted patients with GI bleeding with and without COVID-19 infection.

## METHODS

- This is a retrospective study performed between July 1, 2020 and January 30, 2021. A total of 395 patients were identified that met the inclusion criteria of the protocol.
- Patient charts were reviewed and data extracted. Fisher's exact test or Chi-squared test were used to find the association between 2 categorical variables.
- Two-sample t-test or Wilcoxon rank-sum test were used to compare a continuous variable between the two groups.
- A p-value <0.05 was considered statistically significant and Stata V17 was used to perform the analysis.

## RESULTS

Patient Characteristics	Total	Non-COVID	COVID	p-value
	N=395	N=272	N=123	
<b>Age (years)</b>				
Mean (Std. dev)	67.23 (14.68)	67.19 (15.80)	67.32 (11.92)	0.94
Median (IQR)	70.00 (59.00-77.00)	71.00 (59.00-78.00)	69.00 (63.00-74.00)	
<b>Comorbidities</b>				
HTN	273 (69.11%)	183 (67.28%)	90 (73.17%)	0.24
Diabetes	165 (41.77%)	102 (37.50%)	63 (51.22%)	0.010
Renal Disease†	105 (26.58%)	67 (24.63%)	38 (30.89%)	0.19
Liver Disease‡	54 (13.67%)	37 (13.60%)	17 (13.82%)	0.95
<b>Admission Data</b>				
HR (in beats per minute)*				
Mean (Std. dev)	83.15 (16.93)	81.78 (16.41)	86.12 (17.71)	
Median (IQR)	80.50 (71.00-94.00)	80.00 (70.00-92.00)	82.00 (72.00-100.00)	0.045
Hb (g/dL)*				
Mean (Std. dev)	8.56 (2.76)	8.67 (2.69)	8.33 (2.91)	
Median (IQR)	7.90 (6.50-10.70)	8.20 (6.60-11.00)	7.50 (6.20-10.30)	0.15
Platelets (x10 <sup>9</sup> /L)*				
Mean (Std. dev)	226.23 (110.47)	230.29 (112.93)	217.34 (104.76)	
Median (IQR)	213.00 (153.00-288.00)	214.00 (156.00-292.00)	202.00 (144.00-287.00)	0.31
INR*				
Mean (Std. dev)	1.56 (1.38)	1.47 (1.08)	1.75 (1.82)	
Median (IQR)	1.20 (1.10-1.50)	1.20 (1.10-1.40)	1.30 (1.10-1.50)	0.003
Transfusion required	260 (65.82%)	171 (62.87%)	89 (72.36%)	0.066
NSAIDs	33 (8.35%)	30 (11.03%)	3 (2.44%)	0.003

**Table 1.** Patient characteristics by COVID group. \*Data was analyzed using Wilcoxon-rank sum. Data was missing for: Hb in 1 patient; INR in 94 patients; platelets in 2 patients; HR in 7 patients. †Renal disease was defined as ranging from chronic kidney disease stage 3 to end-stage renal disease requiring dialysis. ‡Liver disease was defined as a range of chronically elevated liver enzymes without fibrosis to decompensated cirrhosis. HTN- hypertension; IQR- interquartile range; HR- heart rate; Hb- hemoglobin; INR- international normalized ratio

## RESULTS

- The average age in the whole sample was 67.23 years old (Std. dev=14.68) without statistical difference (p=0.94) in mean age between patients with COVID (mean: 67.32, Std. dev: 11.92) and non-COVID (mean: 67.19, Std. dev: 15.80).
- There was statistically significant association (p-value=0.010) between Diabetes and the COVID group. Specifically, there were more Diabetic patients (51.22%) in the COVID group than the non-COVID group (37.5%).
- The median INR in the non-COVID group was lower 1.20 (1.10-1.40) compared with the COVID group 1.30 (1.10-1.50; p=0.003).
- NSAID use was higher in non-COVID patients than in COVID patients (30 vs. 3, p=0.003).
- The rate of active bleeding among COVID patients was 36/123 (29%), versus 63/272 (23%) in non-COVID patients (p=0.21).

## DISCUSSION

- A higher percentage of COVID patients had Diabetes, however most other co-morbidities were similar.
- Non-COVID patients were found to have a higher rate of NSAID use. Though worth noting, there was not an increase in gastric or duodenal ulcers in Non-COVID patients.
- COVID patients had a slightly higher rate of active bleeding, however it was not significant.
- This could potentially be explained by the tendency to defer endoscopy early in the pandemic in COVID patients due to infection control concerns.
- Additionally, there was an inclination to conservatively manage critically ill patients.
- Further analysis is required to determine whether the location of bleeding significantly differs among the groups.