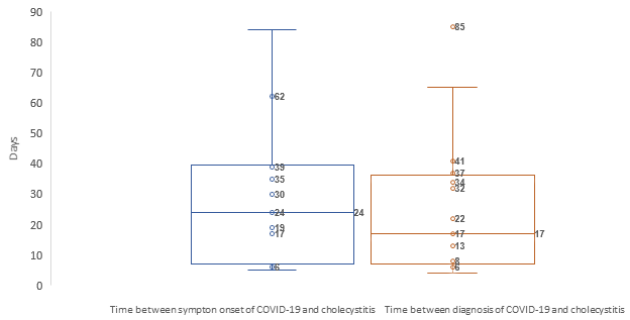
Table 1. Patient Characteristics

Variable		n=30 (%)
Mean Age [range] years		54 [21-90]
Sex	Female	16 (53)
	Male	14 (46)
Race / Ethnicity	White	18 (60)
	Black	9 (30)
	Hispanic	8 (23)
Mean BMI [range] kg/m^2		30 [19 – 49]
Signs and Symptoms	Abdominal pain	20 (67)
	Subjective Fevers	13 (43)
	Documented Fever (>100.4)	7 (23)
	Nausea/Emesis	15 (50)
	Diarrhea	5 (17)
	Respiratory symptoms at time of cholecystitis	10 (33)
Location at symptom onset	Pre-admission	27 (90)
	Inpatient	3 (10)
Cholecystitis	Calculus	22 (73)
	Acalculus	9 (27)
Median Labs [range] at diagnosis	Alanine transaminase (ALT) IU/L	32 [7 – 256]
	Aspartate aminotransferase (AST) IU/L	25 [12 – 282]
	Alkaline phosphatase (ALP) IU/L	78 [42 – 422]
	Total bilirubin mg/dL	0.7 [0.2 – 1.5]
	Maximum C-Reactive protein (CRP) mg/ dL	16 [0.5 – 29]
Treatment	Observation alone	3 (10)
	Antibiotics	22 (73)
	Percutaneous drain	11 (37)
	Surgery	17 (57)
	Mean Time from Dx to Surgery	26 days
Resolution of Symptoms at 30 Days	With surgery	8/11 (73)
	Without surgery	15/19 ((79)
30-day Mortality		2 (6)

Figure 1. Time between COVID-19 and Cholecystitis



Conclusion. Cholecystitis may be an uncommon complication of COVID-19 disease. Cholecystitis may manifest most often 2-4 weeks following SARS-CoV-2 infection. This timing is similar to that in Multisystem Inflammatory Syndrome following SARS-CoV-2 infection and given similarities in timing to we hypothesize that cholecystitis in our patients could be driven by immune activation.

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306. Association of Antibiotic Use and Development Secondary Infection from *Clostridium difficile*, Multidrug-Resistant Bacteria, and *Candida* in Hospitalized Patients with History of COVID-19

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Background. There is increasing evidence that patients hospitalized with COVID-19 receive unnecessary antibiotics. The consequences of antibiotic overuse as it relates to antimicrobial resistance and development of secondary infections remains uncertain. The objective of this study is to compare antibiotic prescription patterns in patients with a history of COVID-19 to those without a history of COVID-19 and determine if there are differences in the frequency of secondary infections from *Clostridioides difficile* (*C. difficile*), multidrug-resistant (MDR) bacteria, and *candida* infections.

Methods. This study is a single-center, retrospective cohort study of 18,757 adults hospitalized during the COVID-19 pandemic from March 1, 2020 to March 31, 2021. Patients were stratified as COVID-19 positive, throughout all hospitalizations subsequent to the date of initial positivity, or COVID-19 negative. Differences in antibiotic practice patterns between the two groups were quantified using days of therapy per 1000 patient days (DOT/1000 PD). The frequency of *C. difficile* infection, MDR-bacteria, and *candida* infections were assessed among the two groups.

Results. During the 12-month study period, on average, the COVID-19 positive group received 21.81% more antibiotics than COVID-19 negative patients, with up to 56.15% increase seen in the first month of the pandemic (Table 1, Figure 1) The COVID-19 positive group had an increased frequency of Candidemia (0.73% versus 0.18%, p< .00001) and decreased isolation of ESBL organisms (1.17% versus 1.87%, p< 0.01416) compared to the COVID-19 negative group. There were no significant differences in frequency of *C. difficile* infection, isolation of other MDR-organisms, or *Candida auris* between the two groups. (Table 2)

Table 1. Antibiotic days of therapy in COVID-19 positive and COVID-19 negative patients.

Month	DOT/1000 PD (All)	COVID-19-positive DOT/1000 PD	COVID-19-negative DOT/1000 PD	% difference
March-20	403.85	628.57	402.55	56.15%
April-20	394.88	417.13	393.97	5.88%
May-20	394.12	349.07	396.45	-11.95%
June-20	390.48	407.46	388.37	4.91%
July-20	413.08	466.70	404.98	15.24%
August-20	395.56	447.58	390.72	14.55%
September-20	402.18	449.44	399.06	12.62%
October-20	406.50	489.10	401.80	21.73%
November-20	404.45	507.96	393.62	29.05%
December-20	431.70	552.36	389.41	41.84%
January-21	430.04	518.59	385.20	34.63%
February-21	434.07	538.79	409.37	31.62%
March-21	411.13	507.33	399.98	26.84%
Average DOT/1000 PD	408.62	483.08	396.58	21.81%

Figure 1. Antibiotic days of therapy in total cohort, COVID-19 positive, and COVID-19 negative patients.

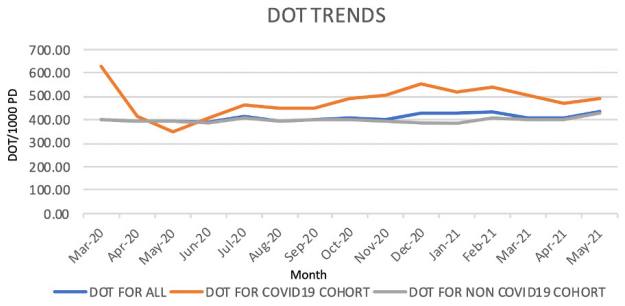

Table 2. Frequency of secondary infections in COVID-19 positive and COVID-19 negative patients

	All	Candidemia	C.diff	C.auris	MDR PsA	VRE	MRSA	ESBL	CRE
COVID-positive (n = 2480)	105	18	9	2	9	11	23	29	4
COVID-negative (n = 16277)	684	29	49	3	49	81	151	304	18
COVID-positive (%)	4.23%	0.73%	0.36%	0.08%	0.36%	0.44%	0.93%	1.17%	0.16%
COVID-pnegative (%)	4.20%	0.18%	0.30%	0.02%	0.30%	0.50%	0.93%	1.87%	0.11%
Chi-square	0.01	25.82	0.27	3.13	0.27	0.13	0.00	6.02	0.47
p-value (<.05)	0.94	<.00001	0.61	0.08	0.61	0.72	1.00	0.01	0.29

Conclusion. Patients with a history of COVID-19 infection received an average of 21.81% more antibiotics, have higher rates of candidemia, but lower rates of ESBL infection than those without a history of COVID-19 infection. The potential increase in antibiotic exposure could account for the increase in candidemia in patients with a history of COVID-19. Future studies include investigating the decrease in ESBL infections seen, perhaps due to receipt of broad antibiotics in COVID-19 patients that target ESBL bacteria.

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