Table 2. Characteristics of Candidemia patients in the SARS-COV-2 negative and SARS-COV-2 positive cohorts from January 2020-May 2020

	SARS-CoV-2 Negative/Untested N = 19	SARS-CoV-2 Positive N = 12	P – value
Female, n (%)	10 (52.6)	5 (41.7)	0.716
Age, mean (SD)	58.2 (15.9)	69.3 (13.1)	0.051
Ethnicity, n (%)			
African American	10 (52.6)	10 (83.3)	0.233
White	5 (26.3)	1 (8.3)	
Other/Unknown	4 (21.1)	1 (8.3)	
Expired, n (%)	7 (36.8)	10 (83.3)	**0.025**
Length of Stay, mean (SD)	35.1 (32.2)	21.8 (13.6)	0.125
Charlson Comorbidity Index, n (%)			0.660
0 – 2	6 (31.6)	2 (16.7)	
3 – 4	6 (31.6)	4 (33.3)	
≥ 5	7 (36.8)	6 (50.0)	
Hospital Management, n (%)			
Central Venous Catheter	14 (73.7)	11 (91.7)	0.363
Corticosteroids	7 (38.9)	9 (75.0)	0.072
Intensive Care Unit	16 (84.2)	12 (100.0)	0.265
Ventilation	12 (63.2)	10 (83.3)	0.418
Total Parenteral Nutrition	4 (21.1)	1 (8.3)	0.624
Vasopressors	12 (63.2)	10 (83.3)	0.418
Fungal Culture Organism, n (%)			
Candida albicans	6 (31.6)	5 (41.7)	0.529
Candida dubliniensis	2 (10.5)	0 (0.0)	
Candida glabrata	10 (52.6)	6 (50.0)	
Candida parapsilosis	1 (5.3)	0 (0.0)	
Candida tropicalis	0 (0.0)	1 (8.3)	

Bolded p-values indicate statistical significance at p-value < 0.05.

Conclusion. The prevalence of fungemia markedly increased during the COVID-19 surge. Increased use of corticosteroids and broad spectrum antimicrobials, prolonged use of central venous catheters and prolonged ICU length of stay likely contributed to this increase. Patients who developed candidemia co-infection with COVID-19 were found to have poorer outcomes as compared to those who were SARS-CoV-2 negative or untested.

Disclosures. **All Authors**: No reported disclosures

292. Antibiotic Use Is Increased in Patients with Acute Respiratory Distress Syndrome (ARDS) Requiring Extracorporeal Membrane Oxygenation (ECMO) due to COVID-19 Compared with Influenza

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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. During the COVID-19 pandemic, >50% of hospitalized patients (pts) received an antimicrobial. ECMO is increasingly used in COVID-19 pts with severe ARDS. ECMO has been used for ARDS due to influenza at our center in prior years. Pts on ECMO are at high risk for infections. We compared the rates of antibiotic (Ab) and antifungal (AF) use in pts on ECMO for COVID-19 vs influenza ARDS.

Methods. This was a retrospective review of pts on ECMO for COVID-19 (2020-2021) or influenza (2013-2019). Antimicrobials (Abs and AFs) were categorized as anti-MRSA, anti-pseudomonal β-lactams (AP-BL), carbapenems, and new broader spectrum β-lactams. We calculated total Ab and AF utilization, adjusted for ECMO duration.

Results. Seventy-one pts (36 COVID-19 and 35 influenza) were included. COVID-19 pts had longer ECMO duration (median: 25 vs 11 days, p=.03). 100% and 97% of pts with COVID-19 and influenza received ≥1 Ab, respectively, and 42% and 33% an AF, respectively. COVID-19 pts received longer duration of Abs (26 vs 10 days, p< 0.001) and but not AF. COVID-19 group (gp) were more likely to receive anti-MRSA Ab (69% vs 33%, p=.004); otherwise, there were no differences between gps in types of Abs used. When adjusted for ECMO days, COVID-19 gp received higher median number of Abs (1.23 vs 1, p=.06). Specifically, COVID-19 gp received higher median number of anti-MRSA Ab (0.2 vs 0, p=.007) and AP-BL (0.44 vs 0.28, p=.08). There was no difference in Ab-free days between gps, though the proportion of Ab-free days was lower (0.2 vs 0.36) in COVID-19 pts (p=.08). More COVID-19 pts had pathogens recovered from clinical cultures, especially S. aureus and Enterobacterales (Figure).

Pathogens recovered from clinical cultures

Figure. Pathogens recovered from clinical cultures
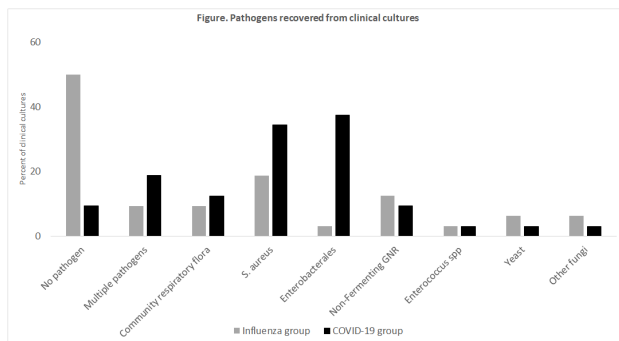
Patients recovered from clinical cultures of patients with COVID-19 and Influenza ARDS requiring ECMO

Conclusion. Among pts on ECMO, those with COVID-19 received significantly longer courses of Abs than those with influenza, even after adjusting for longer durations of ECMO. Differences were driven by receipt of anti-MRSA and AP-BLs. Recovery of pathogenic bacteria was greater in COVID-19 pts than influenza pts. Given difficulties in distinguishing pneumonia from airway colonization among ARDS pts on ECMO, development of diagnostic criteria for pt care, rational antimicrobial stewardship and further research are needed.

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293. Lung Cancer and Hematologic Malignancy (HM) Patients Are Associated with the Highest Risk of Progressing to Severe Disease and Mortality in Cancer Patients with COVID-19

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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. Several studies have shown that underlying cancer is a risk factor for progression of COVID-19 to severe illness and fatal outcome but there is very little data that specifies which underlying cancer puts this patient population at the highest risk.

Methods. We retrospectively collected de-identified data on 1115 cancer patients diagnosed with COVID-19 between January and November 2020, at 12 centers in Asia, Australia, Europe, North America, and South America. Patient characteristics including age, type of malignancy (hematologic malignancy [HM], lung cancer, and non-lung cancer were determined in association with severe illness as well as all-cause mortality within 30 days after COVID-19 diagnosis.

Results. By multivariable logistic regression analysis, independent risk factors for 30-day mortality in cancer patients included age > 65 (OR 6.64; 95% CI 3.351to 12.55; p< 0.0001), ALC < 0.5 K/microliter (OR 2.10; 95% CI 1.16 to 3.79; p=0.014), and anemia at < 10g/dl (OR 2.41; 95% CI 1.30 to 4.44; p=0.005). Among cancer patients, the 30-day mortality rate was significantly higher in patients with lung cancer than in patients with non-lung cancer solid tumors, including those with lung metastases (22% vs 9%; p=0.001). Patients with HM tended to have higher 30-day mortality than patients with non-lung cancer solid tumors (13% vs 9% p=0.07) and tended to have a lower mortality rate than patients with lung cancer (p=0.07). Furthermore, HM patients were more likely to be lymphopenic and anemic at diagnosis as well as progress to LRTI and be placed on ventilatory support compared to non-lung cancer solid tumor patients (p= or < 0.01). In addition, lung cancer and HM patients were more likely to develop hypoxia and require hospital admission than non-lung cancer solid tumor patients (p=0.01).

Conclusion. Lung cancer and HM patients are associated with the highest risk of progressing to severe disease and mortality in cancer patients with COVID-19. Hence, cancer patient population should be given the highest priority as far as prevention [vaccination with boosters if needed] as well as preemptive early therapy with monoclonal antibodies right after the onset of COVID-19.

Disclosures. **Monica Slavin, MBBS,MD**, **F2G** (Advisor or Review Panel member)**Merck** (Advisor or Review Panel member)**Pfizer** (Advisor or Review Panel member)

294. Surveillance for Potential Post-Acute COVID-19 Syndrome Medical Complications in the Emergency Department (ED) – A Retrospective Longitudinal Study of ED Patients Who Had Evidence of SARS-CoV-2 Infection Versus Those Who Did Not

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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. As the COVID-19 pandemic continues, growing attention has been placed on whether patients previously infected with SARS-CoV-2 have an increased risk of developing and/or exacerbating medical complications. Our study aimed to determine whether individuals with previous evidence of SARS-CoV-2 infection prior to their current emergency department (ED) visit were more likely to present with specific clinical sign/symptoms, laboratory markers, and/or clinical complications.

Methods. A COVID-19 seroprevalence study was conducted at Johns Hopkins Hospital ED (JHH ED) from March 16 to May 31, 2020. Evidence of ever having SARS-CoV-2 infection (PCR positive or IgG Ab positive) was found in 268 ED patients at this time (i.e. infected and/or previously infected). These patients were matched 1:2 to controls, by date, to other patients who attended the JHHED. Clinical signs/symptoms, laboratory markers, and/or clinical complications associated with ED visits and/or hospitalizations at JHH within 6 months after their initial ED visit was abstracted through chart review for these 804 patients. Cox proportional hazards regression analyses were performed.

Results. Among 804 ED patients analyzed, 50% were female, 56% Black race, and 15% Hispanic with a mean age of 47 years. 323 (40%) patients had at least 1 subsequent ED visit and additional 70 (9%) had been admitted to JHH. After controlling for race and ethnicity, patients with evidence of current or prior COVID-19 infection were more likely to require supplemental oxygen [hazards ratio (HR) =2.53; p=0.005] and have a cardiovascular complication [HR =2.13; p=0.008] during the subsequent ED visit than the non-infected patients.

Conclusion. Our findings demonstrate that those previously infected with SARS-CoV-2 have an increased frequency of cardiovascular complications and need for supplemental oxygen in ED visits in the months after their initial SARS-CoV-2 infection was detected. EDs could serve as a critical surveillance site for monitoring post-acute COVID-19 syndrome complications.

295. SARS-CoV-2 Infection in a Referral Cancer Center in Mexico City During the First Year of the COVID-19 Pandemic

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Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. Literature on SARS-CoV-2 infection in cancer patients is scarce in Latin America. This population seems to have a higher risk for adverse outcomes. This study aims to correlate clinical characteristics with outcomes in patients with cancer in a referral center in Mexico.

Methods. We included patients with cancer and confirmed SARS-CoV-2 infection, from April, 19 to December 30, 2020, at the Instituto Nacional de Cancerología, Mexico. Clinical information was obtained from medical and epidemiological records. We conducted a descriptive analysis. For the association between variables with hospitalization, invasive mechanical ventilation (IMV), and mortality; univariate and multivariate logistic regression was performed; odds ratios and 95% confidence intervals were calculated.

Results. Four hundred thirty-three patients were included; 268 (62%) were female, the median age was 55 years. One hundred thirty-five (31%), 130 (30%), and 93 (21%) patients had obesity, hypertension, and diabetes mellitus (DM), respectively. Three hundred forty-one (79%) had solid cancer; 82 (19%) hematological malignancy (HM), and 10 (2%) were under evaluation for cancer diagnosis. One hundred seventy (39%) had advanced or metastatic cancer. One hundred ninety-eight (46%) patients were hospitalized. Risk factors were: age (p= 0.001); woman (p=0.019); HM (p=0.050) and advanced or metastatic cancer (p= 0.041). Fourty-five (10%) patients required IMV. Age (p=0.018); DM (p=0.041); C-Reactive Protein (p= 0.002), and LDH (p= 0.033) were associated with invasive mechanical ventilation. Mortality within 30-days after diagnosis was 19% (82 cases). Associated characteristics were: age (p=0.041); lymphocytes (p=0.049); creatinine (p=0.005) and albumin (p=0.001).

Conclusion. In this study, patients with cancer showed higher mortality, need of hospitalization, and invasive mechanical ventilation compared with groups of patients without cancer. We did not find an increased risk in mortality for hematological malignancies. Although our cohort was younger than others previously reported, age was a strong predictor of adverse outcomes. Variables associated with IMV and death were similar to those previously described in cancer patients with COVID-19.

296. Description of Super-infections in Hospitalized Patients with COVID-19

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Temple University COVID-19 Research Group

Session: P-14. COVID-19 Complications, Co-infections, and Clinical Outcomes

Background. The rate of bacterial and fungal super-infections (SI) in inpatients with COVID-19 is unknown. In this study, we aimed to identify and describe patients that developed secondary infections while hospitalized with COVID-19.

Methods. We performed a retrospective chart review on patients admitted to our health system between March and May 2020 with confirmed COVID-19 by nasopharyngeal PCR. We reviewed patients with positive cultures from urine, blood, sputum, and sterile sites. Patients with positive cultures had cases reviewed to determine if they represented a true infection, defined by CDC criteria. SIs were defined as infections that occurred at least 48 hours or longer after the initial positive SARS-CoV-2 test. Additional data was collected on patient demographics, COVID-related therapies, types of infections, and outcomes.

Results. 902 patients were admitted with COVID-19 during our study period. Of these, 52 patients (5.8%) developed a total of 82 SIs. Tables 1 and 2 describe patient and infection characteristics. Patients identified as having a SI were admitted for a median of 30 days; 56% had mortality, and 39% of remaining patients were readmitted within 90 days.

Table 1. Patient Characteristics

Baseline Demographics	N=52 (%)
Age (median, range)	63 (27-89)
Sex	
Male	28 (54%)
Female	24 (46%)
Ethnicity	
African American	33 (64%)
Asian/Pacific Islander	1 (2%)
Hispanic	9 (17%)
White	8 (15%)
Other	1 (2%)

Comorbidities	N=52 (%)
Hypertension	38 (73%)
Diabetes Mellitus	25 (48%)
Obesity	29 (56%)
BMI: 30-35	10 (34%)
BMI: 35.1-40	7 (24%)
BMI: >40	12 (41%)
Chronic Obstructive Pulmonary Disease/Asthma	15 (29%)
Cardiovascular Disease (coronary artery disease and/or hyperlipidemia)	20 (38%)
Obstructive Sleep Apnea	9 (17%)
Malignancy	7 (13%)
Chronic Kidney Disease	8 (15%)
Chronic Heart Failure	4 (8%)
Transplant	3 (6%)
Psychiatric Disorder	3 (6%)
Hypothyroidism	2 (4%)

COVID-related therapies	N=52 (%)	Median days (range)
Anakinra	12 (23%)	7 (1-9)
Convalescent plasma	17 (33%)	1
Gimsilumab vs placebo trial	4 (8%)	2 (1-2)
Hydroxychloroquine	13 (25%)	7 (5-10)
IVIG	23 (44%)	3 (1-13)
Remdesivir	4 (8%)	6 (5-10)
Sarilumab vs placebo trial	14 (27%)	1 (1-3)
Steroids	52 (100%)	18 (3-73)
Tocilizumab	15 (29%)	1 (1-4)
Etoposide	6 (11%)	1 (1-2)

Degree of respiratory support at time of SI	N=82 (%)
No oxygen	1 (1%)
Oxygen (Nasal cannula, high flow)	5 (6%)
Non-invasive mechanical ventilation (BIPAP, CPAP)	0
Mechanical ventilation	73 (89%)
ECMO	3 (4%)

Table 2. Super-infections

Organism	Type		
	Pneumonia N=47	Bloodstream N=30	Urinary N=6
Staphylococcus aureus	16	5	0
Coagulase-negative Staphylococcus	1	14	0
Streptococcus spp.	1	1	0
Enterococcus spp.	0	4	0
Citrobacter spp.	1	0	0
E. coli	2	0	2
Enterobacter spp.	6	1	0
Klebsiella spp.	4	2	2
Morganella spp.	1	0	0
Proteus spp.	2	1	0
Pseudomonas spp.	17	1	2
Serratia spp.	2	0	0
Stenotrophomonas spp.	1	0	0
Aspergillus spp.	3	0	0
Candida spp.	0	2	1
Other	1	0	0
Total*	58	31	7

*Some patients had more than one organism and/or infection