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Background. Obesity is linked to increased risk of complications and is reported to be the most common underlying condition for severely ill SARS-CoV-2 infected individuals. Therefore, we aim further to explore the clinical outcomes of obese children with COVID-19.

Methods. Data were from the Pediatric COVID-19 Case Registry, which includes as of 21 years of age diagnosed with COVID-19 at 170 institutions across the United States. A total of 778 COVID-19 positive non-immunocompromised hospitalized patients aged 24 months or older were included. Patients were assigned as obese or non-obese based on BMI as reported from medical records referenced to CDC BMI by gender and age classification (https://www.cdc.gov/growth-charts/clinical_charts.htm).

Results. Patients meeting inclusion criteria included 56% not obese and 44% obese. Compared to matched US population, obese children and adolescents appeared in this database at a rate of 2.3 times their frequency in the population. Obese patients were more likely to be Hispanic and older, symptomatic, have abnormal radiological findings, and require oxygen and ICU admission. Mortality, in this analysis, was similar across the groups.

Demographic and clinical characteristics. NS. Not significant *within seven days of COVID diagnosis: mild: no need for supplemental oxygen; moderate: need for supplemental oxygen and severe: need for mechanical ventilation.

Conclusion. The incidence of obesity in hospitalized COVID children is higher than that of the general population (34% vs. 19%), highlighting obesity as an important risk factor for hospitalization associated with SARS-CoV-2 infected. Therefore, obese children and adolescents with COVID should be prioritized for COVID immunization and managed aggressively, given their significant COVID morbidity.

Disclosures. All Authors: No reported disclosures

316. Use of (1-3)-β-D-Glucan Assay for Diagnosis of Candidemia in Patients Hospitalized with SARS-CoV-2 Infection

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Background. Candidemia is a rare but serious complication of SARS-CoV-2 hospitalization. Combining non-culture and culture-based diagnostics allows earlier identification of candidemia. Given higher reported incidence during COVID-19 surges, we investigated the use of (1-3)-β-D-glucan (BDG) assay at our institution in those hospitalized with high mortality. The majority received steroids, had obesity and had a prolonged ICU stay, of which 37 (55%) had CAPA, 24 (36%) had Invasive Candidiasis (IC), 3 Cryptococcosis and 3 pulmonary Mucormycosis. The median age was 57.5 (IQR 48-68) and 46 (69%) were male. Thirty-six (54%) had obesity and 20 (30%) type 2 diabetes. Sixty-two received COVID-19 directed therapy: 48/67 (72%) steroids, 4/67 (6%) tocilizumab and 8/67 (12%) were included in clinical trials. Among 24 patients with IC, 13 (54%) were fluconazole-resistant C. parapsilosis, 11 (46%) C. albicans and 2 C. glabrata. Twenty-two received antifungal treatment, 20 with echinocandins and 2 fluconazole. Among 37 CAPA, 8 (22%) were probable and 29 (78%) possible. Serum galactomannan was positive in 8 (22%), 33 respiratory cultures grew Aspergillus (31 tracheal aspirates and 2 bronchovascular lavage). Aspergillus fumigatus was the most frequent isolate in 18/33 (55%). Chest CT showed ground glass opacities in 21 (57%). Most received voriconazole (26/37, 70%). The median time from ICU admission to IFI was 9.5 (IQR 3-14) days. The median ICU and hospital stay length were 30 days (IQR 16-41) and 40 days (IQR 23-49), respectively. In-hospital mortality was 48%. The incidence rate of IC was higher early in the pandemic, due to Infection Control breaches, while higher CAPA incidence may have occurred later due to ventilation system gaps (Figure 1).

Conclusion. We found 9% incidence of IFIs in critically-ill COVID-19 patients with high mortality. The majority received steroids, had obesity and had a prolonged hospital stay. Most had possible CAPA. An outbreak of fluconazole-resistant C. parapsilosis was found.

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318. Description of Patients Readmitted within 30 Days from COVID-19 Hospitalization

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Background. Invasive fungal infections (IFI) are emergent complications in SARS-CoV-2 infection. We aimed to describe the epidemiology, characteristics and outcome of IFI during the pandemic.

Methods. Between March 2020 and April 2021, patients admitted to the Intensive Care Unit (ICU) in a COVID-19 center in Mexico City who developed IFI were included. COVID-19 associated pulmonary aspergillosis (CAPA) was defined according to the EORTC/ECMM/ISHAM criteria. Demographic and clinical data were obtained from the electronic medical record. Descriptive analysis was made. The study was approved by the Institutional Review Board.

Results. Sixty-seven (67/743, 9%) patients with COVID-19 developed IFI during ICU stay, of which 37 (55%) had CAPA, 24 (36%) had Invasive Candidiasis (IC), 3 Cryptococcosis and 3 pulmonary Mucormycosis. The median age was 57.5 (IQR 48-68) and 46 (69%) were male. Thirty-six (54%) had obesity and 20 (30%) type 2 diabetes. Sixty-two received COVID-19 directed therapy: 48/67 (72%) steroids, 4/67 (6%) tocilizumab and 8/67 (12%) were included in clinical trials. Among 24 patients with IC, 13 (54%) were fluconazole-resistant C. parapsilosis, 11 (46%) C. albicans and 2 C. glabrata. Twenty-two received antifungal treatment, 20 with echinocandins and 2 fluconazole. Among 37 CAPA, 8 (22%) were probable and 29 (78%) possible. Serum galactomannan was positive in 8 (22%), 33 respiratory cultures grew Aspergillus (31 tracheal aspirates and 2 bronchovascular lavage). Aspergillus fumigatus was the most frequent isolate in 18/33 (55%). Chest CT showed ground glass opacities in 21 (57%). Most received voriconazole (26/37, 70%). The median time from ICU admission to IFI was 9.5 (IQR 3-14) days. The median ICU and hospital stay length were 30 days (IQR 16-41) and 40 days (IQR 23-49), respectively. In-hospital mortality was 48%. The incidence rate of IC was higher early in the pandemic, due to Infection Control breaches, while higher CAPA incidence may have occurred later due to ventilation system gaps (Figure 1).

Conclusion. There was substantial use of BDG to diagnose candidemia at the peak of the COVID-19 pandemic. Blood cultures were often drawn at time of suspected candidemia but not routinely. When cultures and BDG were drawn together, BDG had a high NPV but low PPV. High NPV of BDG likely contributed to discontinuation of empirical antifungals. The candidemic COVID-19 patients had high mortality, so further investigation of algorithms for the timely diagnosis of candidemia are needed to optimize use of antifungals while improving mortality rates.

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Background. Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) has led to increased hospitalizations and utilization of critical care services. There are few studies describing co-morbidities and demographics associated with patients re-admitted within 30 days of discharge. The purpose of this study is to describe this patient population.

Methods. This was a single-center, retrospective study at The Ohio State University Wexner Medical Center to identify patients who were admitted secondary to SARS-CoV-2 and required readmission within 30 days due to complications that might be associated with COVID-19. Adults admitted between 3/15/2020 and 11/15/2020 were included in this study. Baseline demographics including age, gender and race in addition to select comorbidities were identified.

Results. 250 patients were identified who were readmitted for various reasons. Readmitted patients had a median age of 55 years, 44% were male, and 41.2% were Black/African American. 62.4% of the population was obese (BMI ≥ 30 kg/m²) with 21.6% with a BMI ≥ 40 kg/m². The top three co-morbidities seen included Diabetes Mellitus (DM) (32.2%), Hypertension (48.3%) and Hypertension (51.7%).

Table: Descriptive characteristics of patients readmitted within 30 days of discharge.

| Age | Gender | Frequency | Percentage |
|-----|--------|-----------|------------|
| Median | 53 |
| Male | 110 | 44% |
| Female | 140 | 46% |
| Race | | |
| White | 120 | 48% |
| African American | 103 | 41.3% |
| Asian | 9 | 3.6% |
| Hispanic | 18 | 7.2% |
| Others | 9 | 3.6% |
| BMI | | |
| < 25 | 46 | 18.4% |
| 25 - < 30 | 48 | 19.2% |
| 30 - < 40 | 102 | 40.8% |
| > 40 | 54 | 21.6% |

Conclusion. Though this study lacked a comparator group, it is clear that patients readmitted with all cause etiologies were disproportionally Black/African-American and obese, with a high prevalence of DM, hypertension, and obesity. We recommend close monitoring of patients in these groups to reduce COVID19 readmissions. This is the first step in identifying which patients may be more likely to develop complications and required readmission, the next step is to compare these patients to those that were not readmitted to develop a risk model for readmission.

Disclosures. Carlos Malvestutto, M.D., Lilly (Scientific Research Study Investigator) Regeneron Inc. (Scientific Research Study Investigator) ViIV Healthcare (Advisor or Review Panel member) Mohammad Mahdee Sobhanie, M.D., Regeneron (Scientific Research Study Investigator) Regeneron (Scientific Research Study Investigator, Was a sub-investigator for Regeneron 2066 and 2069).

319. Presenpin as a Prognostic Biomarker for Mortality in COVID-19 Patients vs Community-Authenticated Pneumonia (CAP) Patients

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Background. Lower respiratory tract infections such as community-acquired pneumonia (CAP) and coronavirus disease 2019 (COVID-19) are the main current causes of mortality worldwide. Several scores and biomarkers have been proposed to identify patients at risk of dying, with unclear results. Presenpin is a glycoprotein expressed on the surface of the membrane of monocytes and macrophages and its utility has been proven in sepsis as a predictor of severity and treatment response. However, it is unknown the utility of this biomarker as a mortality predictor among COVID-19 and CAP patients. Thus, the aim of this study was to determine the utility of serum presenpin to identify patients at risk of dying due to COVID-19 and CAP.

Methods. A prospective observational study was conducted at Clínica Universidad de La Sabana, Colombia. We included 240 patients who required hospital admission due to CAP or COVID-19. Plasma samples were collected within 24 hours of admission. The presenpin concentration was quantified using the PATHFAST system. Afterwards, a two-tailed test was used to compare mortality rates among patients and their presenpin plasma concentration. Lastly, the ROC was calculated to determine presenpin sensitivity as a mortality predictor.

Results. A total of 88 patients with CAP and 152 patients with COVID-19 were included in the study. The median (with IQR) in Presenpin plasma concentration was higher in all patients who died (920 [573 - 2340]) vs 573 [307.5 - 1052.5]). p-value = 0.0001). Furthermore, comparing to the study group, the median concentration of presenpin was higher in patients deceased by COVID-19 than those who survived. (1358 [642.8 - 2976.8] vs 570 [335.2 - 1007.5], p-value = 0.0001). In addition, the area under the curve (AUC) ROC of presenpin to predict risk of mortality was 0.769. DeLong's test comparing ROC curves in COVID-19 and CAP patients had a p-value=0.073.

Conclusion. Plasma concentrations of presenpin plasma were higher among COVID-19 patients who died. Moreover, serum concentration of presenpin was not useful to identify CAP patients at risk of dying. However, practical use of Presenpin as a prognostic biomarker of severity is yet to be assessed as further studies are needed.

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320. Differentiating Dengue from COVID-19: A Diagnostic Challenge in the Tropical Regions of the Americas

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Background. The differentiation between dengue and coronavirus disease 2019 (COVID-19) diagnoses is a challenge in tropical regions due to the similarity of symptoms and limited access to specific diagnostic tests for each disease. The objective of this study was to describe the initial symptoms and laboratory test values of patients who presented to the emergency department with dengue or COVID-19. A cross-sectional study was performed in a single center in Cali, Colombia.

Methods. The inclusion criteria were patients with a diagnosis of dengue or COVID-19 who were older than 14 years of age. All patients experienced fever or other symptoms for fewer than ten days. Linear regression was performed to evaluate the differences in the neutrophil-lymphocyte ratio (NLR) between patients diagnosed with COVID-19 and dengue and was adjusted for sex and age group (≤31 and >31 years).

Results. A total of 93 patients were included: 70 with dengue and 23 with COVID-19. Dengue patients were younger than COVID-19 patients. There were significant differences in the neutrophil-lymphocyte ratio (NLR) between patients diagnosed with COVID-19 and dengue and was adjusted for sex and age group (≤31 and >31 years). The sample size was calculated to test the hypothesis that the median NLR in COVID-19 patients is higher than that in dengue patients. A p-value < 0.05 was considered statistically significant for all analyses.

Conclusion. In conclusion, during the first week of symptoms, absolute neutrophil count, NLR, and abnormal alanine transaminase (ALT) (p<0.01). The NLR was significantly higher in COVID-19 patients than in dengue patients (p<0.01).

Table 1. Demographics, clinical and laboratory characteristics in COVID-19 and dengue patients

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