to a deterministic sigmoidal equation that more realistically represents observed data and used likelihood maximized over several different read depths to improve accuracy over a wide range of values of viral load. Given the proportion of the genome covered at varying depths for a single sample as input data, our model estimated the Ct of that sample as the value that produces the maximum likelihood of generating the observed genome coverage data.

**Results.** The model fit on 87 SARS-CoV-2 NGS Assay training samples produced a good fit to the 22 validation samples, with a coefficient of correlation (r2) of ~0.8. The accuracy of the model was high (mean absolute % error of ~10%, meaning our model is able to predict the Ct value of each sample within a margin of ±10% on average). Because of the nature of the commonly used ARTIC protocol, we found that all quantitative signals in this data were lost during PCR amplification and the model is not applicable for quantification of samples captured this way. The ability to model quantification is a major advantage of the SARS-CoV-2 NGS assay protocol.

The likelihood-based model to estimate SARS-CoV-2 viral titer

**Left.** Observed genome coverage (y-axis) plotted against Ct value (x-axis). The best-fitting logistic curve is demonstrated with a red line with shaded areas above and below representing the fitted error profile. RIGHT: Model-estimated Ct values (y-axis) compared to laboratory Ct values (x-axis) with grey bars representing estimated confidence intervals. The 1:1 diagonal is shown as a dotted line.

**Conclusion.** To our knowledge, this is the first model to incorporate sequence data mapped across the genome of a pathogen to quantify the level of that pathogen in a clinical specimen. This has implications in ID diagnostics, research, and metagenomics.

**Disclosures.** Heather L. Wells, MPH, Biotia, Inc. (Consultant) Joseph Barrows, MS, Biotia (Employee) Cara Couto-Rodriguez, MS, Biotia (Employee) Xavier O. Jirau Serrano, B.S., Biotia (Employee) Maryline Dedic, PhD, Biotia (Employee) Karen Wessel, PhD, Labor Zotic/Klimas (Employee) Christopher Mason, PhD, Biotia (Board Member, Advisor or Review Panel Member, Shareholder) Nium B. O'Hara, PhD, Biotia (Board Member, Employee, Shareholder)

356. The Role of Procalcitonin in Antimicrobial Stewardship Among Cancer Patients Admitted with COVID-19
Hiba Dagher, MD; Anne-Marie Chaffari, MD; Ray Y. Hachem, MD; Ying Jiang, MS; Alexandre Malek, MD; Natalie J Dailey Garnes, MD, MPH; Jowan Borjan, PhD; Victor Mularoni, MD; Issam I. Raad, MD, UT MD Anderson Cancer Center, Houston, TX; The University of Texas MD Anderson Cancer Center, Houston, TX; UT MD Anderson Cancer Center, Houston, TX; UT MD Anderson Cancer Center, Houston, TX

**Session:** P.15. COVID-19 Diagnostics

**Background.** Procalcitonin (PCT) has been used to guide antimicrobial therapy in bacterial infections. With the wide spread use of empiric use of antibiotics in cancer patients admitted with COVID-19 disease, we aimed to evaluate the role of PCT in decreasing the duration of empiric antimicrobial therapy among cancer patients admitted with COVID-19.

**Methods.** We conducted a retrospective study of cancer patients admitted to MD Anderson Cancer Center who had a PCT test done within 72 hours of admission following their COVID-19 diagnosis between March 1, 2020 and June 6, 2021. Patients were divided into 2 groups of PCT < 0.25 ng/mL and PCT >=0.25 ng/mL. We assessed pertinent cultures including blood and respiratory, as well as antibiotic use and duration of empiric antimicrobial therapy.

**Results.** We identified 544 patients with a median age of 62 years (range, 14-93). There were 312 (57%) patients that had at least one culture obtained from a sterile or infected site within 7 days following admission. None of the patients who had PCT< 0.25 had a positive culture whereas 41/111 (37%) patients with PCT >= 0.25 had at least one positive culture [P = 0.0001]. Among the 373 patients who had a PCT < 0.25 vs. 129 (35%) patients received more than 72 hours of IV antibiotics compared to 87/171 (51%) among patients with PCT >=0.25 [P = 0.0003].

**Conclusion.** These results confirm the correlation between a PCT level greater than 0.25 and a document bacterial infection. Furthermore, procalcitonin could be useful in enhancing antimicrobial stewardship in cancer patients with COVID-19 by reducing the duration of antimicrobial therapy beyond the initial empiric 72 hours until PCT results become available.

**Disclosures.** Natalie J Dailey Garnes, MD, MPH. AlloVir (Other Financial or Material Support, collaborator on research protocol)

357. A Comparison of Chest CT Findings in Cancer and Non-Cancer Patients with COVID-19
Alexandre Malek, MD; Hiba Dagher, MD; Ray Y. Hachem, MD; Ying Jiang, MS; Anne-Marie Chaffari, MD; Issam I. Raad, MD; UT MD Anderson Cancer Center, Houston, TX; UT MD Anderson Cancer Center, Houston, TX; UT MD Anderson Cancer Center, Houston, TX

**Session:** P.15. COVID-19 Diagnostics

**Background.** The purpose of this study was to compare chest computed tomography (CT) scan findings in cancer versus non-cancer patients with COVID-19 infection. We sought to assess the correlation between radiologic patterns of COVID-19 pneumonia, clinical course, and outcomes.

**Conclusion.** We performed a retrospective study of COVID-19 positive cancer and non-cancer pts who had chest CT scans at the time of diagnosis, at our hospital and 16 other centers in Asia, Australia, Europe, North America and South America, between March, 2020 and November, 2020. Patients’ age, underlying diseases, symptoms, laboratory studies, and radiologic findings consisting of bilateral ground glass opacities (GGOs), multifocal organizing pneumonia (MOP) were collected in association with clinical outcomes.

**Results.** We identified 426 pts with cancer and 622 non-cancer pts. Thereafter, cancer pts were analyzed into 3 distinct groups and similar to non-cancer pts: GGOs group (n=224, 54%), GGOs+MOP group (n=61, 14.6%), and a third group of neither GGOs or MOP (n=131, 31.4%) in cancer pts, and in non-cancer pts: GGOs group (n=387, 62.8%), GGOs + MOP group (n=100, 16.2%), and a third group of neither GGOs or MOP (n=129, 21%). The median patients’ age was 54 in non-cancer pts vs 62 in cancer pts (p< 0.001) and there were more males in the non-cancer group 75% vs 47% (p<0.001). Cough was more prevalent in non-cancer pts, 7% vs 57% (p< 0.001) and similar to fever (73% vs 57%, p< 0.001). Neutropenia < 0.5 kJ/mL and lymphopenia < 1 kJ/mL were more frequent in cancer pts (p<0.001). In cancer pts, there was no statistically significant difference between the 3 groups (hospital admission, mechanical ventilation, readmission within 30 days, mortality), except pts who required non-invasive (NI) ventilation were more frequent in the GGOs group, 55% (p<0.005). In non-cancer, pts with GGOs + MOP have higher hospital admission, ICU transfer, NI- and mechanical ventilation compared to the 2 other groups (p<0.001). While readmission to hospital or mortality rate within 30 days were similar between the 3 groups.

**Conclusion.** This study reveals that non-cancer pts tended to have more radiologic findings on chest CT scan compared to cancer pts at the time of COVID-19 diagnosis and were associated with more worsomie COVID-19-related clinical outcomes.

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

358. Early Cardiac Marker of Mortality in COVID-19
Douglas Salgueso, MD; Juliana Ferri-Guerra, MD; Angel Porras, MD; Marissa Donatelle, MD; Everett Rogers, DO; Lee Seiffer, MD; Ruben Poruradomskiy, MD; Francisco Ujesta, MD; Ayoda Olayiwola, MD; Claudio Tida, MD; Mount Sinai Medical Center, Miami, Florida

**Session:** P.15. COVID-19 Diagnostics

**Background.** Epidermal adipose tissue (EAT) is a highly inflammatory depot of fat, with high concentrations of IL-6 and macrophages, which can directly reach the myo-pericardium via the vasa vasorum or paracrine pathways. TNF-a and IL-6 diminish cardiac inotropic function, making EAT inflammation a potential cause of cardiac dysfunction.

**Methods.** A retrospective cohort study assessing EAT Thickness and Density from CT scans, without contrast, from adult patients during index admission for COVID-19 infection at Mount Sinai Medical Center from March 2020 to January 2021. A total of 1,644 patients were screened, of which 148 patients were included. Follow-up completed until death or discharge. The descriptive analysis was applied to the general population, parametric test of normality for comparisons between groups. Kaplan survival analysis was conducted after survival distribution was confirmed significant. It was followed by the assumption of normality by Q-Q Plot, prior to performing a multiple regression analysis in the vulnerable group using a K-Matrix input for confounders. A log-rank test was conducted to determine differences in the survival distributions for the different ranges of EAT thickness.

**Results.** A total of 148 Participants were assigned to two groups based on epi-cardiac adipose tissue in order to classify them as increased or decreased risk of cardiac dysfunction. Participants with EAT >5 mm, χ2(1) =6.953, p = 0.008. There were more males in the non-cancer group 57% vs 47% (p=0.001). Cough was more prevalent in cancer pts vs non-cancer pts (p< 0.001) and there was a third group of neither GGOs or MOP (n=129, 21%). The median patients’ age was 54 in non-cancer pts vs 62 in cancer pts (p< 0.001) and there were more males in the non-cancer group 75% vs 47% (p<0.001). Cough was more prevalent in non-cancer pts, 7% vs 57% (p< 0.001) and similar to fever (73% vs 57%, p< 0.001). Neutropenia < 0.5 kJ/mL and lymphopenia < 1 kJ/mL were more frequent in cancer pts (p<0.001). In cancer pts, there was no statistically significant difference between the 3 groups (hospital admission, mechanical ventilation, readmission within 30 days, mortality), except pts who required non-invasive (NI) ventilation were more frequent in the GGOs group, 55% (p<0.005). In non-cancer, pts with GGOs + MOP have higher hospital admission, ICU transfer, NI- and mechanical ventilation compared to the 2 other groups (p<0.001). While readmission to hospital or mortality rate within 30 days were similar between the 3 groups.

**Conclusion.** This study reveals that non-cancer pts tended to have more radiologic findings on chest CT scan compared to cancer pts at the time of COVID-19 diagnosis and were associated with more worsomie COVID-19-related clinical outcomes.

**Disclosures.** All Authors: No reported disclosures
Branchburg, NJ) at Truman Medical Center from April 13, 2020 to December 31, 2021. Demographics, comorbidities, symptoms, laboratory data, radiographic data, clinical course and COVID-19 related complications were recorded and analyzed.

Results. During the study period, 85,267 SARS-CoV-2 RT-PCR tests were performed and 253 (0.3%) presumptive positive results were reported for 243 patients. Symptom information were available for 178 patients and 70% of them were symptomatic at the time of testing. Only 2 patients were admitted for COVID-19 pneumonia with the presumptive positive results. Both of them had low oxygen requirement during hospitalization and were discharged with stable conditions.

Conclusion. Symptomatic COVID-19 patients who presented with presumptive positive results by Xpert Xpress SARS-CoV-2 or Cobas SARS-CoV-2 had generally mild disease and rarely required hospitalization for COVID-19.

Disclosures. All Authors: No reported disclosures

360. Evaluation of Cycle Threshold Values in Patients with Symptomatic COVID-19 Infection

Danielle Dixon, DO1; Julieta Madrid-Morales, MD2; Jose Cadena-Zuluaga, MD3; Christopher R. Frei, PharmD, FCCP, BCPS4; 1University of Texas Health, San Antonio, San Antonio, Texas; 2University of Texas Health Science Center at San Antonio, Texas, USA; San Antonio, Texas; 3University of Texas health and science center San Antonio, Audie L. Murphy VA Medical Center, San Antonio, Texas; 4University of Texas at Austin College of Pharmacy/UT Health San Antonio, San Antonio, Texas

Session: P-15. COVID-19 Diagnostics

Background. One of the tests used to identify COVID-19 infections is the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) reverse transcriptase quantitative polymerase chain reaction (RT-qPCR) test. There is a measure known as the cycle threshold (Ct) value, which provides an indirect measurement of viral load. It has been proposed that the Ct value could help with clinical decisions regarding duration of isolation. We hypothesize that Ct values will correlate with symptom duration in a population of veterans with COVID-19 infection.

Methods. We reviewed the records of patients presenting to the emergency department (ED) or admitted to Audie L. Murphy VA Medical Center in San Antonio, Texas with positive SARS-CoV-2 PCR tests. We looked at patients who received multiple SARS-CoV-2 RT-qPCR tests. We compared date of onset of symptoms and cycle threshold values from their initial test to another test ordered after 7, 10, and 20 days from symptom onset. We recorded the Ct value for the N2 and E genes. Patients were classified into mild, severe and critical based on Center for Disease Control and Prevention (CDC) criteria. A Ct value of >30 as threshold for transmissible disease was used based on previously published studies.

Results. We identified 49 patients with more than two SARS-CoV-2 RT-qPCR tests. Patients with mild disease with tests less than or equal to ten days from symptom onset (n=10) had a mean Ct value 23.2 (±5.6) and 26.0 (±3.8) for the E and N2 genes. Patients with mild disease with tests greater than ten days from symptom onset (n=4) had mean Ct values of 26.0 (±6.5) and 27.8 (±6.8). When we stratified the patient population by disease severity, patients with severe and critical disease with tests less than ten days from symptom onset (n=24) had mean Ct values of 20.1 (±7.3) and 23.4 (±7.5). Patients with severe and critical disease greater than twenty days (n=8) had Ct values of 29.0 (±5.1) and 31.1 (±5.4).

Conclusion. We found that Ct values increased with longer symptom duration. We currently use the CDC criteria to discontinue isolation at ten days for mild disease and twenty days for severe and critical disease. The findings of this study suggest that our current practice for duration of isolation correlates with increasing Ct values near or above the threshold for transmissible disease.

Disclosures. All Authors: No reported disclosures

361. Aseptic Meningitis Associated to SARS Cov2 Infection and MIS-C: Pediatric Presentation of COVID-19

Mónica J. Ogliuqui Quintero, MD1; SERGIO RENE BONILLA PELLEGRINI, MD2; RODOLFO N. JIMÉNEZ, PhD3; Maria Ciliañi Casillas Casillas, MD4; 1Hospital Infantil de México Federico Gómez, Ciudad de México, Mexico City, Mexico; 2Hospital Infantil de México, Ciudad de México, Distrito Federal, Mexico; 3Hospital Español, Miguel Hidalgo, Distrito Federal, Mexico

Session: P-15. COVID-19 Diagnostics

Background. Novel SARS-CoV2 may target the central nervous system and several neurologic disease have been reported in patients with Coronavirus disease (COVID-19). Mucocutaneous and inflammatory symptoms are important in pediatric population associated to immune dysregulation. There are few reports of clinical manifestations in children and less frequently the isolation and affection of Central Nervous System.

Methods. A previously healthy four months female infant with familiar contact to SARS-CoV2 four weeks ago. Start with fever of 104°F, vomiting, maculopapular rash on the anterior thorax and upper extremities involving the palms and soles associated with edema. On physical examination, irritable, bulging anterior fontanelle, non-purulent bilateral conjunctival injection, chillsitis and rash was confirmed.

Results. Laboratory findings: thrombocytopenia, elevated D-Dimer, fibrinogen, PCR, CRP, ferritin and ESR with hypoalbuminemia. MIS-C is integrated with cutaneous, gastrointestinal and neurological affections. Empirically ceftriaxone, vancomycin and acyclovir are started due to suspicion of meningococcalis. RT-PCR