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

Background. An increasing number of observational studies have reported the persistence of symptoms following recovery from acute COVID-19 disease. The long-term consequences of COVID-19 are not fully understood and there is no clear consensus on the definition of post-acute sequelae of SARS-CoV-2 infection (PASC). The reported prevalence of PASC widely varies from 10% up to 87%. The purpose of this study is to assess PASC in cancer patients following acute COVID-19 recovery.

Methods. We assessed cancer patients at MD Anderson Cancer Center who were diagnosed with COVID-19 disease between March 1, 2020 and Sept 1, 2020. Using patient questionnaires and medical chart reviews we followed these patients from March 2020 till May 2021. Patient questionnaires were sent out remotely daily for 14 days after COVID-19 diagnosis then weekly for 3 months, and then monthly thereafter. Chart reviews were conducted for each patient hospital re-admission and emergency department visit. These admissions were classified as either COVID-19 related or non-related. The persistence or emergence of new COVID19-related symptoms were captured at each COVID-19 related admission.

Results. We included 312 cancer patients with a median age of 57 years (18-86). The majority of patients had solid tumors (75%). Of the 312 patients, 188 (60%) reported long COVID-19 symptoms with a median duration of 7 months and up to 14 months after COVID-19 diagnosis. The most common symptoms reported included fatigue (82%), sleep disturbances (78%), myalgias (67%) and gastrointestinal symptoms (61%), followed by headache, altered smell or taste, dyspnea (47%) and cough (46%). A higher number of females reported a persistence of symptoms compared to males (63% vs 37%; p=0.036). Cancer type, neutropenia, lymphocytopenia, and hospital admission during acute COVID-19 disease were comparable in both groups and did not seem to contribute to a higher number of long-COVID-19 patients in our study group.

Conclusion. Long-COVID occurs in 60% of cancer patients and may persist up to 14 months after acute illness. The most common symptoms are fatigue, sleep disturbance, myalgia and gastro-intestinal symptoms.

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301. Detection of Pneumococcal Pneumonia During SARS-CoV-2 Infection

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Background. *Streptococcus pneumoniae* (pneumococcus) is a common colonizer of the upper respiratory tract and can progress to cause invasive and mucosal disease. Additionally, infection with pneumococcus can complicate respiratory viral infections (influenza, respiratory syncytial virus, etc.) by exacerbating the initial disease. Limited data exist describing the potential relationship of SARS-CoV-2 infection with pneumococcus and the role of co-infection in influencing COVID-19 severity.

Methods. Inpatients and healthcare workers testing positive for SARS-CoV-2 during March-August 2020 were tested for pneumococcus through culture-enrichment of saliva followed by RT-qPCR (to identify carriage) and for inpatients only, serotype-specific urine antigen detection (UAD) assays (to identify pneumococcal pneumonia). A multinomial multivariate regression model was used to examine the relationship between pneumococcal detection and COVID-19 severity.

Results. Among the 126 subjects who tested positive for SARS-CoV-2, the median age was 62 years; 54.9% of subjects were male; 88.89% were inpatients; 23.5% had an ICU stay; and 13.5% died. Pneumococcus was detected in 17 subjects (13.5%) by any method, including 5 subjects (4.0%) by RT-qPCR and 12 subjects (13.6%) by UAD. Little to no bacterial growth was observed on 21/235 culture plates. Detection by UAD was associated with both moderate and severe COVID-19 disease while RT-qPCR detection in saliva was not associated with severity. None of the 12 individuals who were UAD-positive died.

Conclusion. Pneumococcal pneumonia (as determined by UAD) continues to occur during the ongoing pandemic and may be associated with more serious COVID-19 outcomes. Detection of pneumococcal carriage may be masked by high levels of antibiotic use. Future studies should better characterize the relationship between pneumococcus and SARS-CoV-2 across all disease severity levels.

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302. Using Antiphospholipid Antibody Presence as an Additional Biomarker to Identify COVID-19 Positive Patients with High Risk for Thrombosis

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

Background. Patients who are hospitalized with Coronavirus 2019 (COVID-19) are known to have increased risk for thrombosis. Several mechanisms have been proposed for increased thrombogenesis, including antiphospholipid antibodies (APLs). We sought to better understand the relationship between a commonly used marker of thrombosis, D-dimer, and antiphospholipid antibodies in relation to thrombosis in COVID-19.

Methods. This was a single-center prospective cohort study. Participants were adults admitted to the hospital with COVID-19 between March and December of 2020. Included patients required a positive COVID-19 nasopharyngeal nucleic acid amplification testing (NAAT), coagulation studies, and regular assessment of D-dimer levels. Patients who were excluded were pregnant adults, use of oral anticoagulants prior to admission, and absence of a positive COVID-19 nasopharyngeal NAAT. We tested 52 patients for antiphospholipid antibodies (APLs), including lupus anticoagulant (LA), anti-beta-2 glycoprotein antibodies (B2GP), and anti-cardiolipin antibodies (aCL). The endpoint for analysis was hospital discharge or development of a confirmed thrombosis.

Results. Twenty-nine of fifty-two patients (55.7%) with COVID-19 had non-negative APLs. Of these patients, twenty-seven (93.1%) had non-negative aCLs, the majority of which were IgM antibodies. There was a total of 7 thrombotic events in our cohort. The sensitivity of D-dimer alone was 85% and the sensitivity of APLs alone was 71%. In patients with an intermediate D-dimer level (i.e., greater than 2 milligrams per liter (mg/L) but less than 5 mg/L), the addition of non-negative APLs increased the sensitivity of D-dimer to 100%. In patients with a high D-dimer (i.e., greater than 5), the combined sensitivity of D-dimer and APLs was 60%. Out of the 7 thrombotic events in our cohort, two patients had negative APLs, however both patients had a D-dimer of greater than 5 mg/L.

Conclusion. The use of APLs can assist in risk-stratifying patients in an intermediate-risk D-dimer group to consider prophylactic anticoagulation if APLs are negative and to consider therapeutic anticoagulation if APLs are non-negative. In the high-risk group (i.e., a D-dimer greater than 5 mg/dL), a therapeutic anticoagulation approach may be more appropriate.

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303. Evaluation of Antimicrobial Utilization and the Incidence of Bacterial Pneumonia Co-infection in Non-ICU COVID-19 Patients at an Urban Academic Medical Center

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

Background. The management of COVID-19 poses diagnostic challenges with regard to concomitant bacterial pneumonia. This may result in unnecessary antibiotic therapy. This analysis described the experience of an urban academic medical center's management of non-ICU patients diagnosed with COVID-19 during the initial months of the pandemic and assessed the rate of concomitant bacterial pneumonia in this population.

Methods. This retrospective analysis evaluated patients 18 years and older admitted to Thomas Jefferson University Hospital (TJUH) between March 1, 2020 and July 31, 2020 who had a positive COVID-19 test, were symptomatic, and received at least one dose of antibiotics. Antibiotic therapy was considered appropriate if there was objective evidence of bacterial pneumonia. Per the TJUH COVID-19 guidelines, objective diagnostic criteria assessed included the following: MRSA nasopharyngeal swab, urine *Legionella pneumophilia* or *Streptococcus pneumoniae* antigen test, respiratory pathogen panel, and sputum culture. If patients did not have evidence of bacterial pneumonia, the threshold for appropriate discontinuation of antibiotics was 48 hours.

Results. 50 patients were included in the final analysis. Upon admission, 7 (14%) patients had clear chest radiographs, and 9 (25%) of the 36 patients with a procalcitonin drawn had a level $\geq$ 0.25, indicating a potential bacterial infection. 15 (30%) patients were known to be COVID-19 positive prior to being administered antibiotics. Additionally, 22 (44%) patients had an infectious diseases service consult during their admission. 25 (50%) patients were continued on antibiotics > 48 hours. The mean duration of antibiotic therapy in the entire population was 3.4 days (82 hours). The