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

Background. Most individuals diagnosed with mild to moderate COVID-19 are no longer infectious after day 10 of symptom onset and those with severe or critical illness from COVID are typically not infection after day 20 of symptom onset. Recovered persons can continue to test positive for SARS-CoV-2 by PCR via detection of non-viable RNA in nasopharyngeal specimens for up to three months (or longer) after illness onset. It is also known that severely immunocompromised patients may produce replication-competent virus greater than 20 days from symptom onset and may require, per CDC recommendations, “additional testing and consultation with infectious diseases specialists and infection control experts”. We aim to discuss four case studies of severely immunocompromised patients who exhibited signs of persistent COVID-19 infection of COVID and how we managed transmission-based precautions in our hospital through sequencing and evaluation of cycle thresholds (CT) values and subgenomic RNA detection.

Methods. Residual nasopharyngeal (NP) samples were collected on patients exhibiting persistent COVID like symptoms. These samples underwent N gene and N gene subgenomic RNA (sgRNA) real-time reverse transcription polymerase chain reaction (RT-PCR) testing.

Results. Analysis of longitudinal SARS-CoV-2 sequence data demonstrated within patient virus evolution, including mutations in the receptor binding domain and sgRNA real-time reverse transcription polymerase chain reaction.

Four case studies of severely immunocompromised patients who exhibited signs of persistent COVID like symptoms were reported. All patients were initially diagnosed with COVID-19 pneumonia admitted from May to July 2020 to Harbor-UCLA Medical Center. 126 patients were evaluated. 64 received dexamethasone and 62 did not. To quantify the effect of dexamethasone on diabetic vs. non-diabetic patients, we documented the requirement by each patient group (diabetic with and without dexamethasone, non-diabetic on dexamethasone) for additional insulin per day vs non-diabetic patients not receiving dexamethasone (0.3 doses per day). We performed a pre/post retrospective study of patients with severe COVID-19 pneumonia admitted from May to July 2020 to Harbor-UCLA Medical Center. 126 patients were evaluated. 64 received dexamethasone and 62 did not. To quantify the effect of dexamethasone on diabetic vs. non-diabetic patients, we documented the requirement by each patient group (diabetic with and without dexamethasone, non-diabetic with and without dexamethasone).

Objective. The study aimed to describe the clinical characteristics, management, and outcomes related to hyperglycemia, before and after dexamethasone therapy was initiated by the inability to assess steroid-induced hyperglycemia or the impact of hyperglycemia on hospital resources.

Analysis of longitudinal SARS-CoV-2 sequence data demonstrated within patient virus evolution, including mutations in the receptor binding domain and sgRNA real-time reverse transcription polymerase chain reaction.

Results. Among the 230 admitted patients who required IMV, we identified 49 (21.3%) cases of CAPA, 46 probable CAPA and 3 proven CAPA. Nineteen (38%) of those died in the hospital. The mean age was 64.5 ± 12.6 years and 11 were female. Proven CAPA was diagnosed with culture in three cases (one A. niger, one A. terreus and one A. fumigatus). Probable CAPA was diagnosed by a positive serum GP in 27 (55.1%) patients and by a positive bronchoalveolar lavage (BAL) GP in 29 (59.2%) cases. Seven patients had both serum and BAL positive GP. Forty-six (93.9%) patients received corticosteroids, and 22 (49.9%) were treated with tocolizumab before CAPA diagnosis. All but one received isavuconazole as CAPA treatment. We detected 35 (71.4%) patients who had a bacterial co-infection. Eighteen of those died (51.4%) compared to only one dead in the subgroup without co-infections (7.1%). The mean time from hospital admission to CAPA diagnosis was 6.2 days (SD 7.1) among those who survived compared to 13.2 (SD 6.3) days in those who died p< 0.01.

Conclusion. CAPA had a lower prevalence than previously reported in other series. However, it appears to be linked to high mortality when it occurs with other bacterial coinfections and when it is diagnosed late from admission.

Disclosures. All Authors: No reported disclosures

280. Burden of Hyperglycemia in Patients Receiving Dexamethasone for Severe COVID-19
Kirk B. Fetters, MD1; Stephen Judge, MD1; Timothy Hatlen, MD1; Eric Daar, MD2; 1Harbor-UCLA Medical Center, Torrance, California

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

Background. Previous studies demonstrated the adverse impact corticosteroids can have on blood glucose homeostasis in both diabetics and non-diabetics. This raises concern for corticosteroid use in severe COVID-19 where the population is enriched for those at highest risk of severe disease, such as diabetics and patients with obesity. Previous studies of dexamethasone in COVID-19 were limited by the inability to assess steroid-induced hyperglycemia or the impact of hyperglycemia on hospital resources.

Objective. The study aimed to describe the clinical characteristics, management, and outcomes related to hyperglycemia, before and after dexamethasone therapy was used as the standard of care in patients with severe COVID-19.

Methods. We performed a pre/post retrospective study of patients with severe COVID-19 pneumonia admitted from May to July 2020 to Harbor-UCLA Medical Center. 126 patients were evaluated. 64 received dexamethasone and 62 did not. To quantify the effect of dexamethasone on diabetic vs. non-diabetic patients, we documented the average blood glucose and frequency of correctional insulin doses required by each patient group (diabetic with and without dexamethasone, non-diabetic with and without dexamethasone).

Results. While dexamethasone was associated with higher median blood glucose values, the frequency of correctional insulin doses required by non-diabetic patients receiving dexamethasone remained low at 0.3 doses per day.