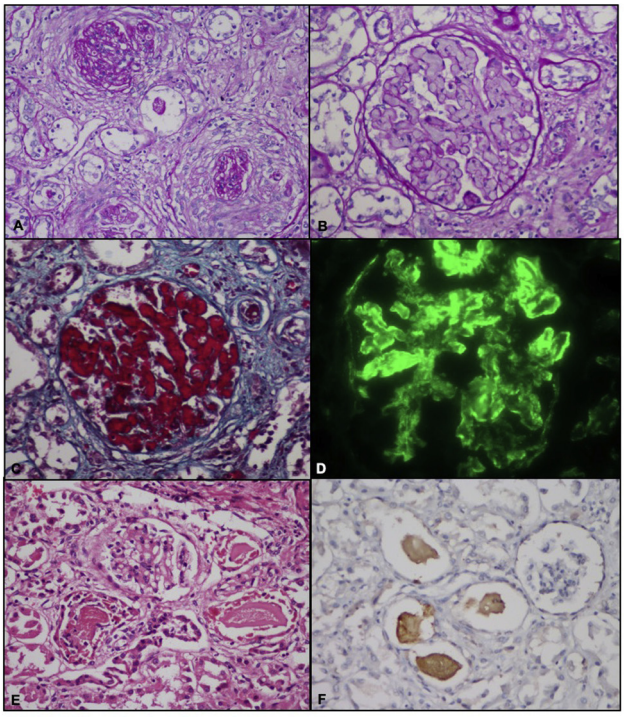

Representative section from kidney of case 1 showing glomerulus with circumferential cellular crescents (A, 200x, PAS stain) and mesangiolysis depicted as paralyzed glomeruli (B, 400x, PAS stain and C, 400x, MSB stain). The immunofluorescence highlighted membranous 3+ staining for IgG(D, 400x, Immunofluorescence). The representative section of case 3 showing brick red cast in the tubules, eliciting inflammation(E, 200x; H&E). The casts are positive for myoglobin on immunohistochemistry(F, 200x, IHC).

Conclusions: Medical autopsies give us an opportunity to examine the whole organ in detail which is equivalent to many medical biopsies. Our observations confirm that COVID-19 patients had an acute tubular injury in all, which was due to thrombotic microangiopathy and myoglobin casts in two patients each and mucormycosis in one. These were possibly unrelated to SARS-CoV-2 as tissue PCR and IHC was negative for SARS-CoV-2 virus.

No conflict of interest

POS-032

CLINICAL OUTCOMES OF HEMOPERFUSION USING HA330 FILTER AMONG PATIENTS WITH SEVERE AND CRITICAL COVID-19 AT THE UNIVERSITY OF SANTO TOMAS HOSPITAL: A ONE-YEAR RETROSPECTIVE STUDY

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Introduction: Coronavirus disease-2019 (COVID-19) became a global pandemic in March 12, 2020. Currently, there is no definitive treatment for the disease. Severe and critically ill COVID-19 patients are admitted due to respiratory illness and failure leading to multiple-organ dysfunction syndrome. Cytokine release syndrome (CRS) is prevalent among these patients. Hemoperfusion is a form of extracorporeal therapy that effectively removes the inflammatory cytokines that lead to lung damage. This study was conducted to determine the clinical outcomes of patients diagnosed with Severe and Critical COVID-19 who underwent hemoperfusion at the University and Santo Tomas Hospital.
Methods: This retrospective study included 135 severe and critical COVID-19 patients who underwent hemoperfusion using an HA330 cartridge. Demographic, clinical data, and outcomes were described. APACHE II score, Hemoglobin, platelet count, leukocytes, neutrophils, lymphocytes, serum creatinine, inflammatory markers such as serum ferritin, hs-CRP, IL-6, LDH, procalcitonin, D-dimer, PaO2/FiO2 (PF) ratio were compared pre and post hemoperfusion (HP) among those survivors and non-survivors. The effects of the timing of hemoperfusion on different clinical parameters and outcomes were described.
Results: The most common cause of death is respiratory (20%). There were 98 patients (73%) who survived. Mortality rates were elevated among chronic kidney disease and cancer patients. APACHE II score was lower post hemoperfusion compared to baseline levels among survivors.

After 4 sessions of hemoperfusion, hemoglobin and platelet counts were lower among non-survivors. WBC levels were increased for all patients. Neutrophils increased compared to baseline among those who expired. Lymphocytes were decreased compared to baseline among non-survivors. There is no significant change in creatinine levels compared to baseline.

Post HP ferritin, LDH, and D-dimer were elevated among non-survivors. Among survivors, hs-CRP and procalcitonin were lower compared to baseline. Post HP ferritin and D-dimer increased among survivors. IL-6 levels showed no significant difference post-HP from baseline but we reported higher levels among non-survivors versus survivors. PF ratio was higher post hemoperfusion among patients who survived compared to those who died.

The effect of timing of hemoperfusion was divided into 14 days versus more than 14 days of illness. The APACHE II score for those who underwent hemoperfusion within 14 days showed a lower score. There was no significant difference in the baseline levels of hematologic counts, inflammatory markers, and PF ratio among those who underwent hemoperfusion beyond 14 days. For those who underwent hemoperfusion within 14 days, hemoglobin, hs-CRP, IL-6, and procalcitonin were lower compared to baseline while neutrophils, ferritin, d-dimer, and PF ration had increased levels. Most patients who underwent hemoperfusion within 14 days of illness required high flow O2 supplementation than an invasive mechanical ventilator.
Conclusions: Hemoperfusion results in lower APACHE II score, hemoglobin, HsCRP, and procalcitonin levels. There was no significant difference from baseline clinical parameters among those who underwent hemoperfusion beyond 14 days of illness. Those who underwent hemoperfusion within 14 days of illness required less invasive mechanical O2 support.

No conflict of interest

POS-033

EFFECT OF HEMOPERFUSION ON THE CLINICAL OUTCOME OF SEVERE AND CRITICAL COVID-19 PATIENTS ADMITTED AT THE UNIVERSITY OF SANTO TOMAS HOSPITAL: AN ANALYTICAL COHORT STUDY

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Introduction: Severe sepsis is a life-threatening end organ dysfunction resulting from dysregulated host response to infection and poses a significant burden to healthcare systems worldwide. Since the advent of CoVID-19, cytokine release syndrome has also been attributed to clinical deterioration presenting as acute respiratory distress syndrome and acute kidney injury of infected individuals. Objective: To determine the clinical outcome of Severe and Critical COVID-19 patients who underwent hemoperfusion compared with patients who did not undergo hemoperfusion.
Methods: This study entailed a retrospective cohort analysis of patients aged $\geq$ 18 and $<$ 90 years old admitted at University of Santo Tomas Hospital who were diagnosed with Severe or Critical COVID-19. Subjects were grouped between those who underwent hemoperfusion (HP group) using HA 330 cartridge and those who did not undergo the procedure (non-HP). Demographic and clinical data collected for both groups included age, sex, comorbidities present, time to initiation of hemoperfusion, total hemoperfusion time, use of other medications specifically: immunomodulator and anti-viral drugs, antibiotics and steroid, length of hospital stay and in-hospital mortality. Mean arterial pressure, cardiac rate, oxygen saturation, arterial blood gas, complete blood count, oxygen requirement, inotropic score, serum creatinine, urine output, LDH, ferritin, HsCRP, Interleukin-6 values and Acute Physiology and Chronic Health Evaluation II (APACHE II) score were compared from baseline and after 4 sessions of hemoperfusion for the HP group. The clinical outcomes: length of hospital stay, in-hospital mortality and time to off high flow nasal cannula (HFNC) between two groups were also compared.
Results: A total of 98 cases were included, 49 subjects underwent hemoperfusion using HA 330 and 49 patients did not undergo hemoperfusion. Demographic data is similar between both groups. Baseline