American Society for Apheresis

View Abstract

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TITLE: *SKIPPING A STEP: IMPLEMENTING PLASMA EXCHANGE EARLY TO AVOID AGGRESSIVE IMMUNOSUPRESSION DURING SEVERE COVID-19 INFECTION IN A PATIENT WITH SYSTEMIC LUPUS ERYTHEMATOSUS COMPLICATED BY DIFFUSE ALVEOLAR HEMORRHAGE*

AUTHORS (FIRST NAME INITIAL LAST NAME): N. Tabish[1, 2], K. Annen[2, 1], S. Stephens[2], N. Draper[1, 2], L. Helander[2, 1], C. Hayes[2], E. Schwartz[2], B. McClendon[2]

INSTITUTIONS (ALL): 1. Pathology/ Blood Banking and Transfusion Medicine, University of Colorado, Aurora, CO, United States.
2. Apheresis, Transfusion Medicine and Blood Banking, Childrens Hospital of Colorado, Aurora, CO, United States.

PRESENTATION TYPE: Oral or Poster

CURRENT CATEGORY: Therapeutic Plasma Exchange

ABSTRACT BODY:

Purpose: *We report a case of using Therapeutic Plasma Exchange (TPE) to avoid additional immunosuppression for a patient with COVID-19 pneumonia and systemic lupus erythematosus (SLE) with diffuse alveolar hemorrhage (DAH).*

Methods : *METHODS/ CASE: A 17-year-old female with a history of poorly controlled systemic lupus erythematosus (SLE) diagnosed in 2020 was admitted with COVID-19 infection and acute respiratory failure. The patient had started experiencing upper respiratory infection symptoms one day earlier, which had worsened overnight. Her SLE manifestations included glomerular disease, arthritis, cytopenias, and hypocomplementemia, which was managed with prednisone and mycophenolate mofetil. Upon admission, she was hypoxemic and febrile with hemoptysis and dizziness while standing. She was started on a non-rebreather oxygen mask and quickly escalated to non-invasive positive pressure ventilation (NIPPV). Radiography was consistent with DAH. She was started on pulse dose steroids and transferred to the Pediatric Intensive Care*

Unit (PICU) for ongoing care. She was diagnosed with DAH with worsening respiratory failure and a marked decline in hemoglobin despite multiple transfusions. There was no laboratory evidence of hemolysis. Immunosuppression was determined to be inadequate based on hypocomplementemia and elevated Anti DS-DNA values. The primary team was concerned about increasing immunosuppression to control her SLE in the setting of COVID-19 infection. TPE was requested and started on the second day of admission. A 1.5 plasma volume (PV) exchange with 100% FFP replacement was planned for the first procedure and 1.0 PV for each subsequent procedure, for a total of 5.

Results : *17y F with a history of SLE with nephritis in hypoxemic respiratory failure in the setting of DAH and COVID-19 infection requiring intubation (2 days/ 48 hours); TPE x5 and pulse dose steroids, mycophenolate, hydroxychloroquine were utilized along with Remdesivir (antiviral therapy). Her symptoms improved, and she was discharged after ten days of admission.*

Conclusion : *It has been reported that individuals taking mycophenolate mofetil and glucocorticoids are at an increased risk for severe COVID-19 outcomes, including hospitalization, intensive care unit (ICU) admission, and mortality. TPE has been demonstrated to decrease pro-inflammatory cytokines in many diseases, including in SLE. TPE is a promising therapy for SLE and COVID-19-associated cytokine release syndrome. It is important to note that using immunosuppressive agents in COVID-19 patients is still an area of active research, and more studies are needed to determine the most effective treatment strategies.*

DEGREE:

Nabil Tabish : MD

Kyle Annen : Other

Suzan Stephens : RN

Nicole Draper : MD

Louise Helander : MD

Chelsea Hayes : MD

Eileen Schwartz : RN

Brittany McClendon : RN

DEGREE IF OTHER:

Nabil Tabish : MS

Kyle Annen : DO

PRIMARY AUTHOR?:

Nabil Tabish : Selected

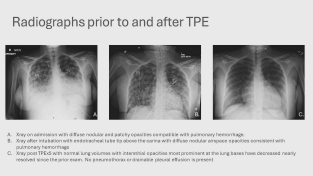
ASFA Membership (Abstract Submission): Yes, I am an ASFA member

ASFA Oral Presentation Awards (ASFA Members and Non-Members): Apply

ASFA Junior Investigator Abstract Award or ASFA Allied Health Abstract Award (ASFA Members Only):

ASFA Junior Investigator Abstract Award

(No Table Selected)



A. Xray at admission

B. Xray at intubation

C. Xray upon completion of TPE