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Extracorporeal membrane oxygenation for systemic lupus erythematosus (SLE) with severe ARDS

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Background: Extracorporeal membrane oxygenation (ECMO) has evolved as a treatment option for patients having reversible severe respiratory failure who are deteriorating on conventional ventilation.^{1,2} We describe our experience with a patient who received ECMO for refractory hypoxemic respiratory failure due to community-acquired pneumonia associated with systemic lupus erythematosus (SLE). **Methods:** This is a retrospective case report for which approval for presentation has been obtained from the administration of the department and can be submitted upon request. Our patient was an 18-year-old female with a long history of SLE with nephritis who was recently started on immunosuppression, admitted with azotemia, fluid overload, and respiratory failure, and initially improved with fluid removal.³ Her respiratory status later worsened with saturations in the low 80s despite 100% FiO₂ and a positive end-expiratory pressure (PEEP) of 14 cm H₂O. She had a trial of prone positioning together with PEEP optimization, but her condition continued to deteriorate.⁴ The patient was evaluated for rescue ECMO therapy as a life-saving measure.⁵ Both femoral veins were cannulated, and when ECMO started, there was immediate improvement in oxygenation. The ventilator was soon switched to the pressure control setting (PEEP 10 cm H₂O/inspiratory pressure 10 cm H₂O/rate 10 cycles/min) with 40% FiO₂. The patient's hospital stay was complicated by lupus-induced thrombocytopenia, resulting in our decision to run heparin-free ECMO. She was decannulated after 25 days of ECMO without receiving any systemic anticoagulation. **Results:** The patient improved and was decannulated, extubated, and discharged from hospital, with no residual lung comorbidity. **Conclusions:** ECMO without any systemic anticoagulation is an acceptable therapy when there is

profound respiratory failure secondary to infection in an immunosuppressed patient.⁵ Most of the literature reviews have already shown the good application of ECMO in SLE-induced diffuse alveolar hemorrhage.⁶ Our case report presents a promising application of rescue ECMO therapy in a lupus-induced immunosuppressed patient with pneumonia,

acute respiratory distress syndrome,⁷ and thrombocytopenia.

Keywords: ECMO, systemic lupus erythematosus, thrombocytopenia, no systemic anticoagulation

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