

ECMO TO THE RESCUE

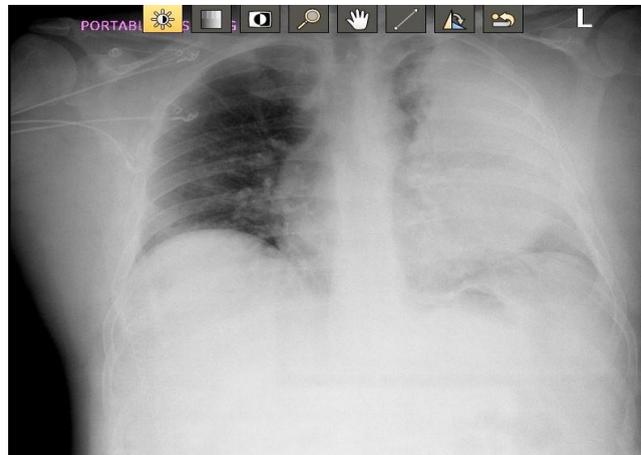
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Introduction

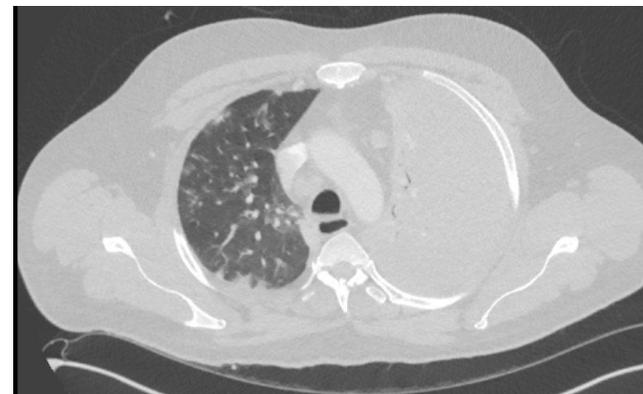
- Legionella pneumonia is an atypical organism causing one to ten percent of community acquired pneumonias.
- It typically causes Legionnaire's disease in older adults, smokers and people with a weakened immune system.
- Suggestive clinical features include hyponatremia and failure to respond to B-lactam therapy. Early diagnosis and treatment of Legionnaires disease has shown to decrease mortality.

Case Description

- A 39-year-old male smoker with a past medical history of Crohns on infliximab presented with dyspnea, fever, and productive cough for 2 days.
- In the ED, patient was febrile, tachycardic, tachypneic and hypoxic, with bilateral rhonchi.
- Labs on presentation showed leukocytosis, hyponatremia with sodium 118 mEq/L, and a high anion gap acidosis likely due to lactic acidosis. Arterial blood gas showed pH 7.2, pCO2 49 mmHg and pO2 55 mmHg on an FiO2 of 100 percent.
- Chest x-ray reported bilateral infiltrates with a large left lung opacity.
- The patient was placed on high flow nasal cannula and was subsequently intubated. Patient was started on Ceftriaxone and Azithromycin. His Murray score was 3. Due to persistent hypoxia on maximum ventilator settings a decision was made to transfer the patient to a tertiary care center for ECMO.



- His legionella antigen was positive. Subsequently, vancomycin and levofloxacin were added, and the patient was placed on ECMO for a total of 28 days, after which he was successfully weaned off.
- He was transitioned to mechanical ventilation after which he self-extubated himself, following which patient received dexamethasone and was eventually titrated off supplemental oxygen.



Discussion

ECMO is indicated in patients with acute hypoxic respiratory failure in patients with ARDS based on the PaO2/FiO2 ratio, who are refractory to conventional mechanical ventilation. Based on the CESAR trial, it is recommended to transfer adult patients with severe but potentially reversible respiratory failure, whose Murray score is greater than 3 or who have a pH of less than 7.2 on conventional management, to a center where ECMO-based management is available. Based on the EOLIA trial, ECMO should be considered early and not as a rescue therapy in patients with reversible causes of respiratory failure. Our patient was transferred out very early during his course of illness to a tertiary care center that had the availability of ECMO and had a good outcome.

Conclusion

It is essential for internists and intensivists working at medical centers without ECMO, to identify candidates with reversible causes of respiratory failure who are not maintaining adequate oxygenation on maximum ventilator settings and transfer them to centers where ECMO based management is available.

References

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- Combes A, et al. Extracorporeal membrane oxygenation for severe acute respiratory distress syndrome. *N Engl J Med* 2018; 378: 1965–1975.