Lactate Trends in Veno-Arterial Extracorporeal Membrane Oxygenation Patients Presenting with Sepsis

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BACKGROUND
- Sepsis is the result of a massive immune response due to infection within the blood
- Lactate levels in septic patients are elevated as a result of organ failure and anaerobic metabolism
- Veno-Arterial Extracorporeal Membrane Oxygenation (VA-ECMO) can be used to treat septic patients by providing cardiopulmonary support

OBJECTIVE
- This study aims to analyze the relationship between lactate levels of VA-ECMO-treated septic patients and survival at discharge.

METHODS
- Retrospective chart review of all VA-ECMO patients with sepsis from 2013-2018 at the Lehigh Valley Health Network
- Data collection of patient demographic information, related variables, and outcomes
- Analysis and correlational studies between lactate levels and patient survival

RESULTS
- Of the 20 sepsis patients who underwent ECMO treatment, 30% of the patients survived
  - The average lactate level of patients who survived was 4.18 mmol/L
  - The average lactate level of patients who did not survive was 8.94 mmol/L
- In patients who survived, lactate levels trended down and stabilized within the first four days of ECMO treatment while lactate levels of the patients who did not survive did not return to within the normal range

CONCLUSION
- Recorded lactate levels before and within the first 4 days ECMO treatment help to determine trends in patient survival
- On average, lactate levels well above the normal range resulted in a higher mortality rate
- Future studies should look to determine if there is a lactate level threshold over which survival is rare

REFERENCES