Comparison of Survival Indicators Between Myocardial Infarction Patients and Septic Patients Who Received Veno-Arterial Extracorporeal Membrane Oxygenation

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Comparison of Survival Indicators Between Myocardial Infarction Patients and Septic Patients Who Received Veno-Arterial Extracorporeal Membrane Oxygenation Treatment

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BACKGROUND
• A myocardial infarction (MI), also known as a heart attack, occurs when blood flow to the heart is stopped due to a blockage in a coronary artery.
• Sepsis is a potentially fatal complication of the body’s inflammatory immune response to an infection – the inflammation can damage organ systems, causing them to fail.
• Veno-arterial extracorporeal membrane oxygenation treatment is a form of partial cardiopulmonary bypass that can be used for support of cardiac function in MI and septic patients.

OBJECTIVE
• This study sought to determine survival indicators for VA-ECMO-treated MI and septic patients at the Lehigh Valley Health Network from 2013–2018.

METHODS

- Creation of Microsoft Excel database to collect and organize patient demographic and outcome information
- Retrospective chart review of all VA-ECMO patients with either MI or Sepsis from 2013–2018 at Lehigh Valley Health Network
- Analysis of 34 MI and 20 septic patients for a correlational study between indicators and survival

OUTCOMES

RESULTS

- Septic patients who exhibited any of the following demonstrated a higher mortality rate:
  • elevated lactate levels
  • elevated prothrombin time (PT)
  • elevated activated partial thromboplastin time (APTT)
- MI patients who exhibited any of the following demonstrated a higher mortality rate:
  • lower pH levels
  • administration of extracorporeal cardiopulmonary resuscitation (ECPR)

CONCLUSION

- PT served as a reliable indicator for determining outcomes in both septic and MI patients.
- Lactate levels and APTT served as indicators only in septic patients.
- pH levels and the need for resuscitation were indicative of survival only in MI patients.
- Future studies could look to investigate how these determined survival indicators compare to survival indicators in larger patient groups.

REFERENCES