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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) occurs when blood flow to the heart is obstructed, resulting in damage to the heart muscle.

• Sepsis is characterized by multiple organ system damage or failure caused by the body’s inflammatory immune response to an infection.

• Veno-arterial extracorporeal membrane oxygenation (VA-ECMO) treatment is derived from cardiopulmonary bypass used in surgery to provide long term support of circulatory 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

Retrospective chart review of all VA-ECMO patients with either MI or Sepsis from 2013-2018 at the Lehigh Valley Health Network

Analysis of 34 MI and 20 septic patients for a correlational study between indicators and survival using descriptive statistics

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
  – elevated PT levels
  – administration of extracorporeal cardiopulmonary resuscitation (ECPR)

CONCLUSION

• PT appeared to be a reasonable indicator for determining outcomes in both septic and MI patients

• Lactate levels and APTT served as indicators only in septic patients in this study

• pH levels and the need for resuscitation were indicative of survival only in MI patients in this study

• Future studies could look to investigate how these determined survival indicators compare to survival indicators in larger patient groups

REFERENCES

