

Impact of Ejection Fraction on Fluid Overload in Critically Ill Adults with Sepsis or Septic Shock

Phong T. Ly, PharmD^{1,2}, Joanna Chastain, PharmD, BCPS², Susan E. Smith, PharmD, BCPS, BCCCP¹, Jiayuan Zhang, PharmD^{1,2}, W. Anthony Hawkins, PharmD, BCCCP^{1,3}
¹University of Georgia College of Pharmacy, ²Phoebe Putney Memorial Hospital, Albany, Georgia, ³Medical College of Georgia at Augusta University,

BACKGROUND

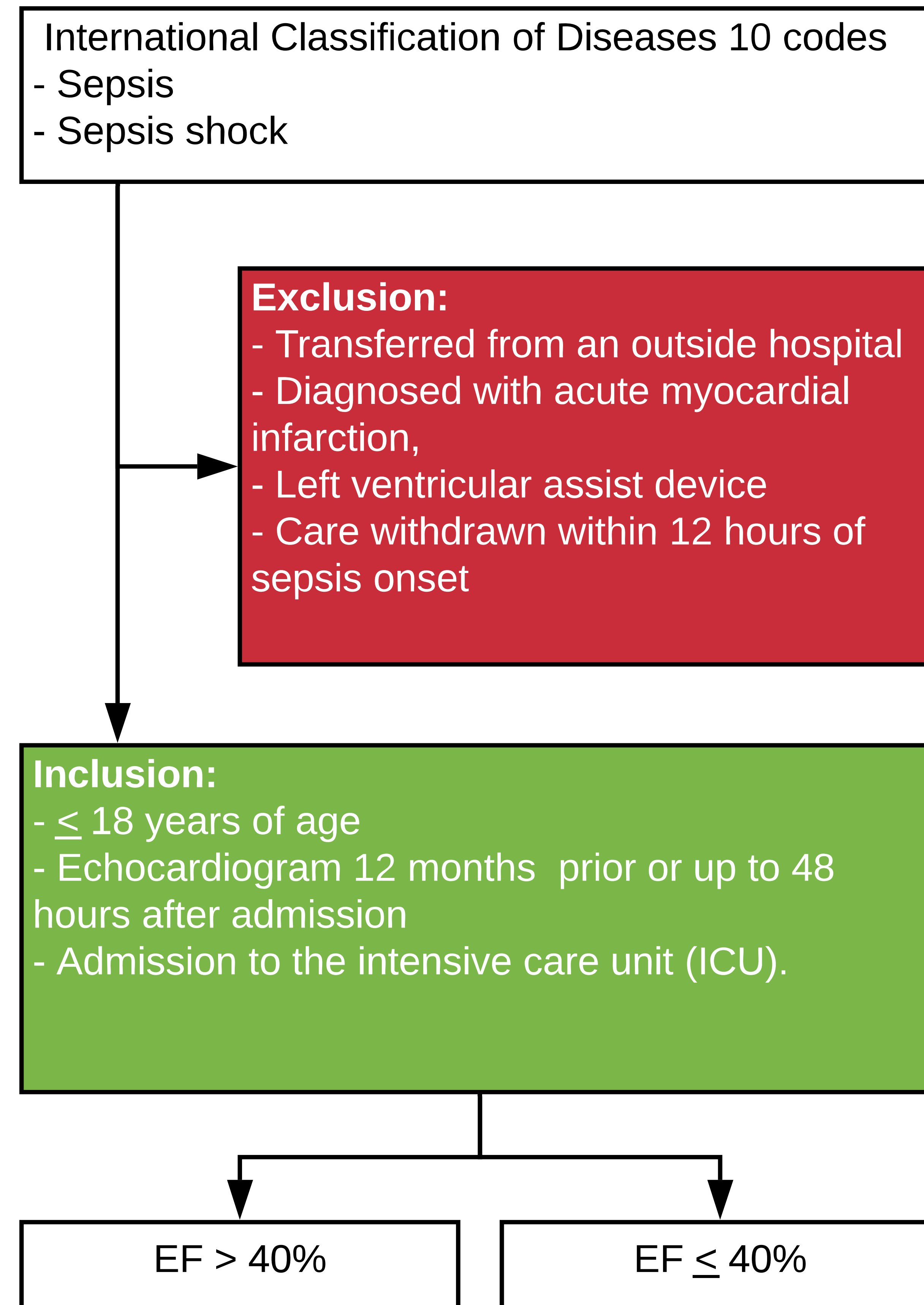
- Heart failure (HF) is a global pandemic that affects over 26 million people worldwide.¹
- Sepsis accounts for almost one quarter of deaths in people with heart failure.²
- The Surviving Sepsis Campaign recommends at least 30mL/kg crystalloid fluid bolus within 3 hours of diagnosis.³
- Chronic heart failure puts patients at risk for fluid overload due to compensatory sodium and water retention to maintain perfusion.⁴
- Patients hospitalized for heart failure who received up to 2 liters of fluids had increased rates of hospital death and intubation compared to those that only received diuretics.⁵
- Fluid overload in critically ill patients is associated with significant increase in mortality, length of hospital stay, and ventilator use.⁶

PURPOSE

Are patients with sepsis or septic shock and a reduced left ventricular ejection fraction (LVEF) more likely to develop fluid overload from initial resuscitation?

METHODS

PATIENT POPULATION



DEFINITIONS

Fluid overload

- 10% or more increase from baseline (weight prior to resuscitation).⁶

Shock survival

- Patient who were discharged before day 28 were assumed to be alive on day 28.

Ventilation free survival

- Patient who were discharged without mechanical ventilation were assumed to be vent free through day 28.

DATA TO BE COLLECTED

Demographic:

- Age, Gender, Weight at ICU admission & discharge, Height, PMH: Obesity (BMI>30), CKD, ESRD, HTN, DM, HF, COPD, Asthma, Liver disease

Home medications:

- Loop diuretics

ECHO:

- Type, EF, Diastolic dysfunction

Others:

- SOFA Score (initial)
- Source of infection
- Time to Antibiotics

STATISTICAL ANALYSIS

Continuous data:

- Shapiro-Wilkes to assess for normality
- Independent student t-test or Wilcoxon rank sum for analysis

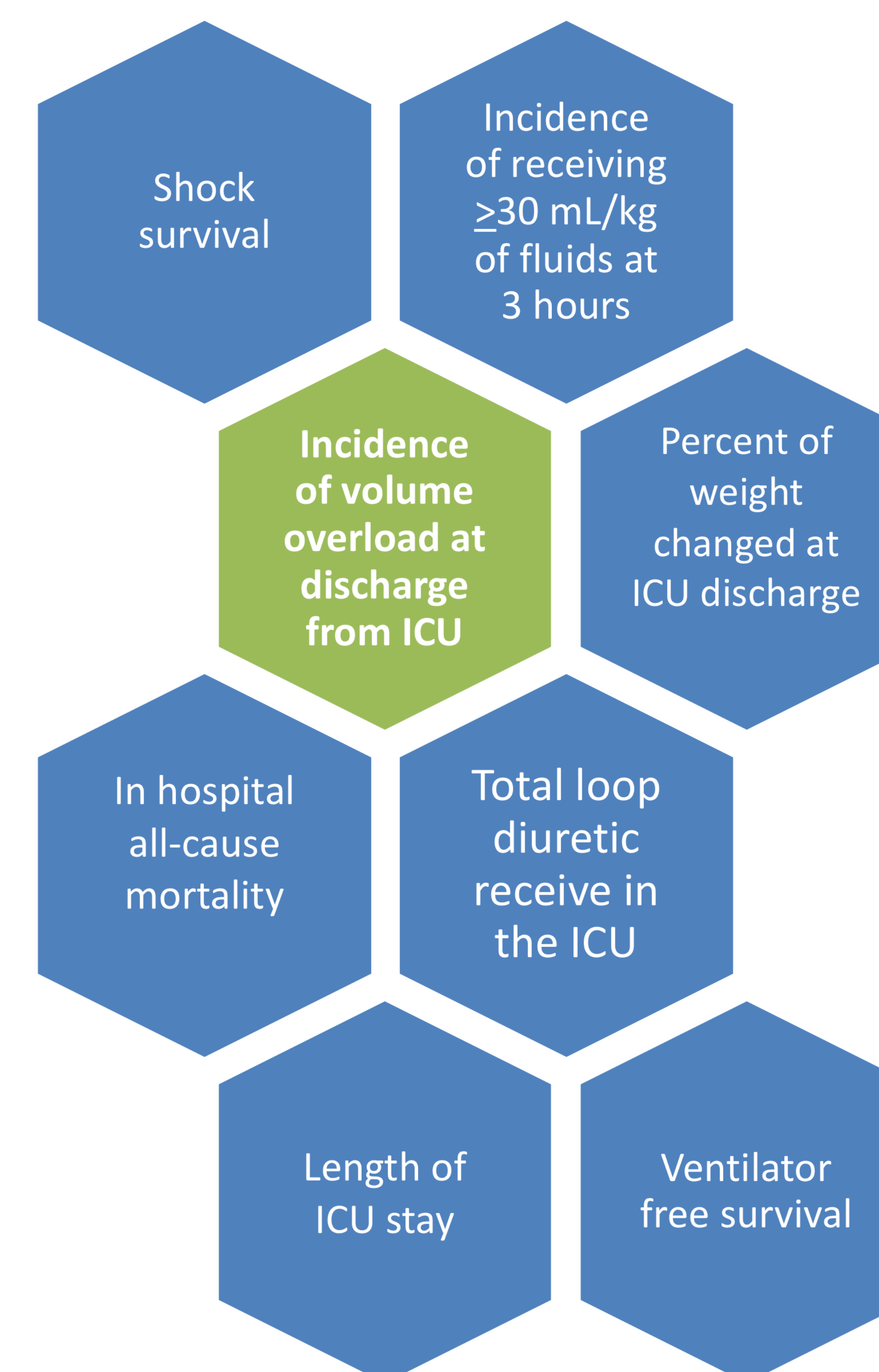
Categorical data:

- Chi square test or Fishers Exact

Sample size:

- 35% of the normal EF group expected to have FO⁷ at ICU discharge
- 394 in each group needed to detect a 20% absolute difference with an α of 0.05 and power of 80%

OUTCOMES



REFERENCES

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