Preemptive APRV in Severely Injured Trauma Patients: A Prospective, Randomized Trial

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Introduction


- Strategies to reduce the incidence of ARDS should have significant impact on outcomes

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- Traditionally, APRV has been used as a rescue mode in patients with ARDS


Hypothesis

- We hypothesize that preemptive use of APRV in severely injured trauma patients reduces mortality, the incidence of ARDS, the number of ventilator days, and the number of ICU days.

Methods

- Study Type: Prospective, Randomized
- Inclusion Criteria:
  - ISS>16
  - Chest AIS>2
  - Having received 2L of crystalloid/colloid prior to enrollment
- Exclusion Criteria
  - Known or suspected pregnancy
  - Prisoners
  - Evidence of intracranial hypertension
  - History of COPD
  - Any condition requiring paralytics or deep sedation preventing spontaneous breathing

Methods

- Primary Outcome
  - 28 day mortality
- Secondary Outcomes
  - Development of ARDS as described by the Berlin Criteria
  - Number of ventilator days
  - Number of ICU days
  - Number of hospital days
  - Incidence and duration of renal failure as defined by the KDIGO guidelines
  - Incidence and duration of cardiovascular failure as determined by quantity and duration of vasopressors and inotropes
Statistical Analysis

- Primary outcome will be examined by Fisher’s exact test

- Secondary outcomes with binary outcome variables will be examined by Fisher’s exact test
  - ARDS and acute renal failure

- Secondary outcomes with continuous outcome variables will be examined with t test
  - Ventilator days, ICU days, and hospital days

- Stata will be used in all statistical analysis

Progress/Needs

- IRB approved at the University of Iowa, currently enrolling

- Needs for participating centers

Goals/Timelines

- Data collection complete by June 2018

- Analysis completed by October 2018

- Goal: EAST Submission 2019
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