**BACKGROUND**

- Fluid overload is treated with loop diuretics in patients with heart failure and in patients with acute kidney injury.
- There are sparse data regarding use of very high dose continuous loop diuretic infusions. In some studies, very high doses were only used in outlying patients (maximum 260 mg/hour).
- The use of very high dose furosemide continuous infusions at Thomas Jefferson University Hospital is a rare practice. These infusions range in dose from 40-240 mg/hour, with no limitation on the duration.
- The purpose of this study is to examine the efficacy and safety of very high dose furosemide continuous infusions.

**METHODS**

- This hospital institutional review board approved retrospective cohort study included adult patients 21-88 years old who were hospitalized at Thomas Jefferson University Hospital between April 2013 and January 2019.

  **Administered a continuous furosemide infusion at a dose of 240 mg/hr**

  Excluded: expired or started RRT* within the first 24 hours of infusion initiation

  Included: evaluated at 24 and 48 hours prior to and at 3, 6, 12, 24, and 48 hour intervals post-infusion

  *RRT = renal replacement therapy

- Descriptive statistics were calculated as mean ± SD and were compared by using paired sample t-tests

**Efficacy Results**

- The range of infusion doses was 40 mg to 240 mg/hr, with a mean of 98 (±44) mg/hr
- Total furosemide doses were higher after infusion initiation (p < 0.001)
- The range of infusion duration was 5 hours to 161 hours, with a mean of 43 (±36) hours
- Body weight decreased from 24 hours to 24 hours (p = 0.023)
- There was no difference in thiazide diuretic administration (p = 0.419)

**Safety Results**

- **Primary Endpoint**
  - Change in 24-hour UO
- **Secondary Endpoint**
  - Change in 24-hour body weight
  - Total furosemide doses
  - Number of thiazide diuretics

**Safety endpoints:**
- Acute kidney injury
- Hypotension
- Electrolyte abnormalities
- Ototoxicity

**DISCUSSION**

- These data show that very high dose furosemide continuous infusions at doses of 40-240 mg/hr for durations of up to 272 hours are both efficacious and safe.
- Prospective, multi-center randomized controlled trials should be done to further confirm the findings in this study.

**CONCLUSION**

Very high dose furosemide continuous infusions provide a significant increase in diuresis without worsening renal function, disturbing electrolytes, or increasing the risk of ototoxicity.

**REFERENCES**


**DISCLOSURE PANEL**

The authors have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation.