Outcome Evaluation of High Dose Ascorbic Acid Infusion in Adult Burn Patients

ORLANDO HEALTH® Warden Burn Center

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Background

High dose ascorbic acid (HDAA) infusion for acute burn resuscitation is controversial due to conflicting evidence surrounding the risks and benefits. Some literature suggests that HDAA can reduce resuscitation volumes, while other evidence suggests an increased risk of acute kidney injury (AKI). Operational concerns further complicate its use due to osmotic diuresis and interference with point-of-care blood glucose monitors. The purpose of this study is to describe the outcomes of HDAA for acute burn resuscitation from patients at a single burn center.

Results

*Results reported as mean

Population (n=24)	
Age, years	47.6
BMI	25.8
Male, n (%)	18 (75)
TBSA, %	49.1
Inhalation Injury, n (%)	8 (33.3)
Baseline SCr, mg/dL	1.01
Concomitant Trauma, n (%)	2 (8.3)

BMI = Body Mass Index
TBSA = Total Burn Surface Area
SCr = Serum Creatinine

Outcomes	
RRT, n (%)	4 (16.7)
24hr fluid total, mL/kg/TBSA	6.08
24hr UOP, mL/kg/hr	1.65
ACS, n (%)	12 (50)
Exploratory Laparotomy, n (%)	4 (16.7)
Mechanical Ventilation, days	14.2
Mortality, n (%)	13 (54.2)

RRT = Renal Replacement Therapy
UOP = Urine Output
ACS = Abdominal Compartment Syndrome

Methods

Retrospective chart review of adult burn patients admitted 2016 – 2018

Inclusion Criteria
- HDAA infusion for acute burn resuscitation ≥16 hours

Exclusion Criteria
- Pre-existing hemodialysis-dependent chronic kidney disease
- Expired/withdrew care within 48 hours of admission

Primary Outcome
- Incidence of renal replacement therapy within 7 days of admission

Secondary Outcomes
- 24 hour resuscitation volume
- Incidence of ACS and exploratory laparotomy
- Duration of mechanical ventilation
- Mortality

Conclusions

- No association between HDAA and the need for renal replacement therapy
- HDAA confounded fluid titration leading to increased risk of ACS
- High mortality rate
- No longer utilized for burn resuscitation at this center

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