Evaluation of albumin 5% prescribing patterns in adult hospitalized patients

Robyn Feldman, Pharm.D., Nicole Tadros, Pharm.D., Heidi Clarke, Pharm.D., BCCCP, Erika Dittmar, Pharm.D., BCPS,
Baptist Hospital of Miami, Department of Pharmacy; Miami, FL

BACKGROUND

- Fluid resuscitation plays an integral role in the management of patients with intravascular volume depletion by improving cardiac output and organ perfusion[1]
- The debate surrounding the use of crystalloid versus colloid fluids remains a source of controversy due to limited and conflicting evidence[2]
- Emerging data, however, favors the use of crystalloids over colloids in addition to having cost benefits[3]
- Current protocols at some hospitals within the Baptist Health South Florida (BHSF) health-system allow for albumin 5% only for the following indications:
  - Plasmapheresis, dosing indicated by BHSF Plasmapheresis Protocol
  - Postoperative volume resuscitation after cardiac surgery only if > 3 L crystalloid has been administered in 24-hour period without adequate hemodynamic response

OBJECTIVES

- The purpose of this study is to assess the prescribing practices of albumin throughout BHSF health-system prior to implementing criteria for use across the system

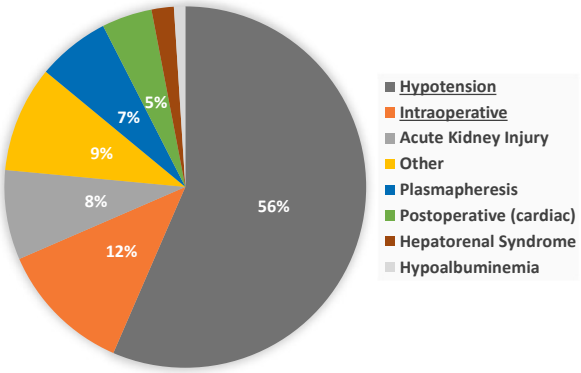
METHODS

- **Study Design:** Multi-center retrospective chart review of the patients who received albumin 5% in 2019
- **Sample Size:** To achieve a sample representative of hospitals within the BHSF health-system, sample sizes were calculated based on usage and total bed count to obtain a total of 200 patients
- **Inclusion Criteria:** Individuals ≥ 18 years old who were admitted in a BHSF hospital and received albumin 5% for any indication in 2019
- **Exclusion Criteria:** Individuals who received albumin 5% in an outpatient facility of BHSF
- **Primary Outcomes:**
  - Albumin 5% Prescribing Patterns
    - Indications
    - Ordering Specialty
    - Concomitant Medications
    - Dosage
    - Number of Doses

RESULTS

Baseline Demographics	N=200
Hospital Site	
Baptist Hospital, n	128
Doctors Hospital, n	4
Homestead Hospital, n	12
South Miami Hospital, n	42
West Kendall Baptist Hospital, n	14
Average Weight, kg	72.29
Past Medical History	
CHF, n (%)	39 (20)
ESRD/CKD, n (%)	30 (15)
Patient Characteristics:	
ICU, n (%)	50 (25)
All Surgery, n (%)	72 (36)
Cardiac Surgery, n (%)	32 (16)
Concurrent Diuretic Use, n (%)	29 (15)
Use During Rapid Response, n (%)	21 (11)

Albumin 5% Indications

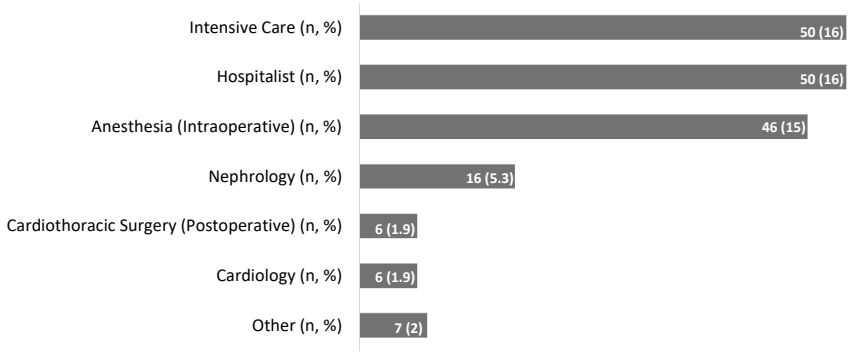


Dosing	
Number of Total Doses, n	304
Average Number of Doses per Patient, n	1.5
Number of Doses Given During Rapid Response, n (%)	26 (9)
Number of Patients with Repeated Doses, n (%)	80 (40)

Prior Crystalloid Resuscitation		
	Past 4 hours	**Past 12 hours**
Indication: Hypotension, %	37	42
Indication: Intraoperative, %	71	75
All Other Indications, %	54	60

Cardiac Surgery
0 out of 9 postoperative patients received ≥ 3 liters of crystalloid in the previous 24-hour period

Albumin 5% Prescribing Specialty



CONCLUSION

- Hypotension was the most common indication for albumin 5% prescribing.
- About 42% of hypotensive patients received crystalloids in the 12 hours preceding albumin 5% administration.
- The top 3 ordering specialties were intensive care, hospitalist, and anesthesiology.
- Per proposed criteria, 7% of patients received albumin 5% appropriately for plasmapheresis and 0% of patients received albumin 5% appropriately post-cardiac surgery.

LIMITATIONS

- Potential for selection bias
  - Retrospective study design
  - Sample not representative of entire health-system
- Sole reliance on documentation in electronic health records
  - Inability to accurately assess for the presence of symptoms or identify indication
  - Inability to identify reason for selected fluid during surgery
  - Difficult to determine intraoperative blood pressure readings

DISCUSSION

- This study illustrates an opportunity to improve fluid resuscitation in the management of hypotension and post-cardiac surgery.
- Data from this study will guide future efforts to standardize a protocol across the BHSF health-system and drive more appropriate albumin use.

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DISCLOSURES

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