

Sodium Polystyrene Sulfonate Usage and Incidence of Bowel Necrosis

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BACKGROUND

- Sodium polystyrene sulfonate (SPS, Kayexalate) is a cation-exchange resin used for the treatment of hyperkalemia.
- A retrospective study showed an average reduction in serum potassium of 0.93 mEq/L after SPS administration.
- The incidence rate of bowel necrosis following SPS is 0.27-1.8%, and mortality rate is 36%, as seen by a retrospective study.
- Risk factors include sorbitol co-administration, recent surgery, bowel obstruction, and renal insufficiency.

OBJECTIVES

- Evaluate the incidence of bowel necrosis secondary to SPS usage.
- Identify areas of improvement in SPS prescribing in a community hospital.
- Review current prescribing patterns of SPS in the health system.

METHODS

Design

- Multicenter, retrospective medication use review
- Historical electronic health records from December 2019 were screened for inclusion
- 82 patient charts were analyzed

Inclusion Criteria

- At least 18 years of age
- Received at least 15 grams of SPS

Data Points

- Presence of bowel necrosis
- Concomitant sorbitol administration
- Serum potassium pre- and post-SPS

RESULTS

Incidence of bowel necrosis:
0/82 (0%)

Concomitant sorbitol administration: 0/82 (0%)

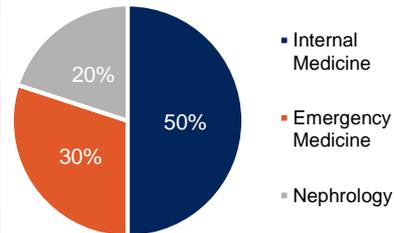
Potassium < 5 mEq/L pre-SPS: 17/82 (20.7%)

Emergent hyperkalemia pre-SPS: 3/82 (3.6%)

No follow-up labs within 24 hours of SPS:
11/82 (13%)

Average reduction in potassium: 0.73 mEq/L

Top 10 Prescribers
by Specialty



LIMITATIONS

- Retrospective review
- Small sample size
- Limited time frame may not be fully representative of hospital practice

FUTURE DIRECTIONS

- Inform emergency medicine, internal medicine, and nephrology providers of the findings of this evaluation.
- Educate providers on the identified areas of improvement.
- Evaluate SPS formulary status.

REFERENCES

- Hagan AE, et al. Sodium Polystyrene Sulfonate for the Treatment of Acute Hyperkalemia: a retrospective study. *Clin Nephrol.* 2016;85(1):38-43.
- McGowan CE, et al. Intestinal Necrosis Due to sodium polystyrene sulfonate (Kayexalate) in sorbitol. *South Med J.* 2009;102(5):493-497.

DISCLOSURES

- 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.