

Things We Do for No Resin

Jessica Haraga MD¹, Nancy Ho MD², Rob Rope MD³

¹Oregon Health & Science University, Department of Internal Medicine, Portland, OR

²Division of Gastroenterology and Hepatology, Portland VA Medical Center, Portland, OR

³Division of Nephrology and Hypertension, Oregon Health & Science University, Portland, OR

Introduction

Sodium polystyrene sulfonate (SPS; Kayexalate) is a commonly used ion-exchange resin that works primarily in the colon to treat hyperkalemia. It was approved for use in 1958 before it was required to prove drug efficacy and safety. There are also no studies to support its efficacy in the acute setting. Since then, there have been multiple reports of adverse GI complications, including intestinal necrosis and even death, especially when used in combination with sorbitol.

Case Presentation

CC: 70 year old Asian man presented with asymptomatic hyperkalemia to 6 mEq/dL

PMH:

ESRD on HD, extensive cardiovascular disease, remote h/o colon cancer s/p sigmoid resection

ED Course:

- No EKG changes
- Calcium gluconate 2 g
- Regular insulin 10 units + 50ml of 50% glucose solution (D50)
- Furosemide 80 mg IV
- Kayexalate 15 g PO
- Urgent dialysis

Hospital Course:

Day 1: severe sepsis with acute onset RLQ abdominal pain, no bloody diarrhea, abdominal exam with focal tenderness but no peritoneal signs → started on broad spectrum IV antibiotics

CT Abdomen & Pelvis

Findings: circumferential wall thickening of the cecum and ascending colon with associated mild inflammation and pneumatosis in the cecal wall



Kayexalate has a **limited role** in the acute treatment of hyperkalemia, especially if hemodialysis is available, and may cause **intestinal necrosis** in patients with renal failure.

Discussion

Chronic administration of Kayexalate may help prevent hyperkalemia in ESRD patients; however has limited benefit in the acute setting. Kayexalate has a slow onset of action and limited effect on lowering potassium levels.

ESRD patients are at high risk of complications, such as intestinal necrosis, ischemic colitis, perforation and death.

Newer cation exchange resins, such as patiromer or sodium zirconium cyclosilicate, are better options for potassium elimination in this population.

References

Harel Z, Harel S, Shah PS, Wald R, Perl J, Bell CM. Gastrointestinal adverse events with sodium polystyrene sulfonate (Kayexalate) use: a systematic review. Am J Med. 2013;126(3):264.e9-24.

Sterns RH, Rojas M, Bernstein P, Chennupati S. Ion-exchange resins for the treatment of hyperkalemia: are they safe and effective?. J Am Soc Nephrol. 2010;21(5):733-5.

Putchu N, Allon M. Management of hyperkalemia in dialysis patients. Semin Dial. 2007;20(5):431-9.