

A comparison of the efficacy of laxatives versus sodium polystyrene sulfonate for the treatment of hyperkalaemia in hospitalised patients: A post-hoc analysis

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Abstract

Introduction: Hyperkalaemia is a common electrolyte disorder in hospitalised patients and is associated with life-threatening complications. Sodium polystyrene sulfonate (SPS) is frequently used to increase gastrointestinal losses. There is limited data comparing the efficacy of SPS to laxatives alone in reducing serum potassium in hospitalised patients.

Methods: We performed a retrospective cohort study of adult hospitalised patients with hyperkalaemia ($[K^+] \geq 5.5$ mmol/L) treated with either laxatives alone (L), SPS alone (S), or laxatives plus SPS (LS) from 1 January 2019 to 31 December 2019. Patients undergoing dialysis were excluded. We compared the efficacy of lowering $[K^+]$ among these three groups over the first 24 hours and 2–7 days. Multilinear regression was performed to identify predictors of absolute $[K^+]$ reduction within these timeframes and 30-day survival analysis was performed.

Results: A total of 134 patients were included, with 30% receiving laxatives alone, 53% SPS alone, and 17% laxatives plus SPS. There were no differences in age, sex, or comorbidities among the groups; however, all patients in the LS group had kidney dysfunction ($P < 0.001$). Baseline $[K^+]$ was highest in the LS group (6.0 mmol/L (L) vs. 6.4 mmol/L (S) vs. 7.2 mmol/L (LS), $P = 0.003$). There were no differences in $[K^+]$ at 24 hours ($P = 0.146$) or 2–7 days ($P = 0.610$); however, the absolute reduction in $[K^+]$ at 2–7 days was greater in the LS group (-0.9 mmol/L (L) vs. -1.36 mmol/L (S) vs. -1.75 mmol/L (LS), $P = 0.039$). On multilinear regression, the LS group was associated with a greater absolute reduction in $[K^+]$ at 2–7 days. There were no differences in 30-day survival ($P = 0.099$).

Conclusion: In hospitalised patients with hyperkalaemia, the combination of laxatives plus SPS was more effective in reducing $[K^+]$ at 2–7 days, though there was no difference in 30-day survival.