Journal Club Eastern Virginia Medical School

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CITATION:
Scherr: Management of Hyperkalemia with a Cation-Exchange Resin, *NEJM* 1961; 264:115-119

GUIDE	Comments
A. **Are the results of the study valid?**	No. There was no control, randomization, or standard therapy.
1. Were patients randomized?	No. Pt's were given different treatments based on provider preference, severity of hyper K and chronic v oliguric renal failure. Failure to randomize is likely to create selection bias. Also patients were with different comorbidities Acute, Chronic,
2. Was randomization concealed (Blinded)	No randomization of clinicians or patients or data assessors was noted
3. Were patients analyzed in the groups to which they were randomized?	They weren't randomized therefors no intention to treat analysis.
4. Were patients in the treatment and control groups similar with respect to known prognostic factors?	Unable to compare. Authors failed to provide basic information such as age, sex, creatinine, duration of hyperkalemia, comorbidities and so on.
5. Were patients aware of group allocation?	Not really sure. Only real difference was PO v PR which was based on the type of renal failure. Those surely knew.
6. Were clinicians aware of group allocation?	Yes. Oliguric v Chronic RF. Predisposes to bias.

7. Were outcome assessors aware of group allocation?	Yes, also predisposing to bias
8. Was follow-up complete?	Yes. Except for two people. There results are missing without any mention of them
B. What were the results?	
1. How large was the treatment effect? (difference between treatment and control group).	No control. But difference was a 0.4 decrease in K for 23 of 30 with a mean of 1.0mEq/L via oral and 0.8mEq/l by rectal route (2 went missing) **But** majority of the patients received other K lowering medications. **All:** K low diet **23:** received D20 **3:** insulin/glucose **3:** Bicarb Ineffective in two patients
2. How precise was the estimated treatment effect at a 95% confidence interval?	No CI.
C. How can I apply the results to patient care	
IV. Were the study patients similar to my patients?	After this study FDA ruled Kayexalate "effective" in a review in 1962. Yes, frequently renal failure is the cause of Hyperkalemia in our pt population. Somewhat mixed bag of patient types, sepsis, post-operative, acute and chronics. Hard to say if their and our patient populations have many similarities. Unlikely
1. Were all clinically important outcomes considered?	No, specific to ED, time interval of 4, 8, 12 hours may be helpful not 24 hours. Pt has gone to dialysis by then. There was one sentence mention of EKG changes back to baseline after Kayexalate treatment. More about arrhythmias, death, and mortality would be helpful. Did those two missing people die? Good points. Other important patient centered outcomes did patients feel better, ?

2. Are the likely treatment benefits worth the potential harms and costs?	Kayexalate is the standard of care and commonly given and requested by our admitting colleagues. Kayexalate causes cementing of the stool and can cause life threatening constipation. Probably the cathartic that has any if any effect. No truly proven benefits in this study. Good!

Clinical Bottom Line:
Kayexalate is the standard of care taught and accepted by most physicians. Give it to treat yourself and your consultants but know in the back of your mind its probably not doing a thing. (Like giving HCO3- in a non-acidotic patient ?? (another debate))

Failure to randomize and blind leads to high likelihood of bias. 50 years of practice since these two articles were published and current texts are still recommending!!!