To evaluate the effectiveness and safety of rule-of-thumb potassium replacement in critically ill patients with mild and moderate hypokalemia” Hammond et al (2019).

Abstract:

BACKGROUND: Rules of thumb for potassium replacement are used in intensive care units despite minimal empirical validation.

OBJECTIVE: To evaluate the effectiveness and safety of rule-of-thumb potassium replacement in critically ill patients with mild and moderate hypokalemia.

METHODS: A retrospective, observational study was done of patients with mild (potassium, 3-3.9 mEq/L) and moderate (potassium, 2-2.9 mEq/L) hypokalemia admitted to a medical intensive care unit who received potassium replacement. Expected and actual frequencies of replacement that achieved target potassium concentrations (≥ 4 mEq/L) were compared by using a χ2 test. Logistic regression analysis was used to assess whether rule-of-thumb administration affected the probability of target attainment within 24 hours of replacement.

RESULTS: Serum potassium concentrations were checked within 24 hours after potassium replacement on 354 of 577 days (61.4%) when replacement was provided. Concentrations were within target range in 82 instances (23.2%). Of 62 episodes of replacement expected to achieve the target according to the rule-of-thumb estimation, 22 did (35%). Rule-of-thumb
administration was associated with greater likelihood of target attainment (odds ratio, 2.12; 95% CI, 1.18-3.85; P = .01). This difference in likelihood remained significant after adjustment for covariates (odds ratio, 2.18; 95% CI, 1.04-4.56; P = .04).

CONCLUSION: In critically ill patients given potassium replacement without regard to a formal protocol, the target serum potassium concentration was achieved more often than expected according to the rule-of-thumb estimation but less than one-third of the time.

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