To evaluate the incidence of infusion-related reactions and electrolyte abnormalities in neurocritical care patients treated with continuous intravenous infusion of 3% sodium chloride solution via a peripheral catheter” Jones et al (2016).

Abstract:

BACKGROUND: Numerous drug information resources recommend that continuous intravenous 3% sodium chloride solution be administered via a central catheter.

OBJECTIVES: To evaluate the incidence of infusion-related reactions and electrolyte abnormalities in neurocritical care patients treated with continuous intravenous infusion of 3% sodium chloride solution via a peripheral catheter.

METHODS: Data on patients treated with continuous intravenous infusion of 3% sodium chloride solution at 2 academic medical centers were evaluated retrospectively to determine the administration site. Electronic notes on catheter status were reviewed to determine the occurrence of infusion-related reactions. Prespecified thresholds were used to assess electrolyte abnormalities.
How safe is a continuous peripheral infusion of 3% sodium chloride solution?

RESULTS: Of 213 patients who had peripheral continuous intravenous infusions of 3% sodium chloride solution, 15 (7%) had infusion-related reactions. Administration was changed to a central catheter in 56 patients (26.3%), but only 5 changes were due to an infusion-related reaction. Most (157 patients, 73.7%) received their entire treatment peripherally, for a median duration of 44 hours, 3 minutes. The most common electrolyte abnormalities were hyperchloremia in 49.3% and hypokalemia in 46.9% of patients.

CONCLUSION: Current recommendations that a central catheter is required for continuous intravenous infusion of 3% sodium chloride solution should be reevaluated. Only a few patients who had peripheral infusions had infusion-related reactions. Electrolyte abnormalities occurred frequently with peripheral infusion, but the clinical importance of the abnormalities remains unclear.

Reference:


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