Category :**Brain: Head trauma**

A119 - ***Safety of 5% sodium chloride bolus administration via peripheral venous access in neurocritical care patients***

AL Brask ; TS Lam ; JT Jancik
Hennepin County Medical Center, Clinical Pharmacy, Minneapolis, United States

Introduction:

Hypertonic saline (HTS) is effective at lowering intracranial pressure in patients with acute brain injury [1]. When administered via peripheral venous access, HTS may result in extravasation, pain, and tissue injury [2]. Institutions may restrict 5% HTS administration to central vascular access. The aim of this study was to evaluate the safety of administration of 5% sodium chloride (NaCl) bolus via peripheral venous access.

Methods:

This single center, retrospective study evaluated adult neurocritical care patients who received 5% NaCl over 20 minutes via peripheral venous access between January 2015 and February 2019. The primary outcome was occurrence of infusion-related complications such as extravasation, phlebitis, or soft tissue injury. The secondary outcome was the incidence of hyperchloremia (serum chloride >110 mEq/L) or hypernatremia (serum sodium >160 mEq/L).

Results:

Of 514 peripheral administrations of 5% NaCl, 7 (1.4%) were associated with infusion-related complications. Among these, 6 cases resulted in extravasation requiring intervention, and 1 case resulted in a skin tear requiring intervention. None of the complications required surgical intervention. Five of the cases were documented as such that alternative causes of the patients' symptoms could not be ruled out. Electrolyte abnormalities occurred with 181 (35.2%) administrations, all of which involved hyperchloremia. Among these, hypernatremia also occurred with 5 (2.8%) administrations.

Conclusion:

Peripheral venous administration of 5% NaCl bolus appears safe, as demonstrated by a low incidence of infusion-related complications in the study population.

References:

1. Cooper DJ et al. JAMA 291(11):1350-1357, 2004.
2. Jones GM et al. American Journal of Critical Care 26(1):37-42, 2016.