

Abstract

Background: Acute gastroenteritis (AGE) is one of the main causes of hospitalization and electrolyte imbalance in infants. Undiagnosed electrolyte imbalance, especially dysnatremia, can be lethal.

Methods: The records of hospitalized infants aged 1-12 months with community-acquired AGE between January 2017 and March 2021 were retrospectively reviewed. The incidence of early dysnatremia was assessed, and factors associated with early dysnatremia were analyzed by multivariable logistic regression. Subsequent serum sodium levels at 4-24 hours after IV fluid treatments, which were categorized into 3 groups: D5-NS, D5-1/2NS, and D5-1/5NS-1/3NS were determined in the subgroup of infants with early isonatremia

Results: In total, 347 infants with a median age of 8.0 (5.0, 10.0) months were included. The incidence of early dysnatremia was 14.4% (hyponatremia 12.4% and hypernatremia 2.0%). Multivariable logistic regression analysis showed that severe dehydration ($p=0.048$) was associated with early dysnatremia. Among 70 infants with early isonatremia, the median serum sodium change was highest in the D-5NS group, with changes of +3 (0.5, 5), +1 (-2, 2) and -2.5 (-4, 2.3) mmol/L in infants who received D5-NS, D-1/2NS, and D5-1/3-1/5NS, respectively ($p=0.003$). There were 4 of 39 infants (10.3%) developed hyponatremia while receiving D5-1/2NS. None of those who received D5-NS developed subsequent dysnatremia.

Conclusions: Early dysnatremia is common in infants with AGE. We suggest that serum electrolyte should be monitored in severely dehydrated infants, and our study shows that isotonic solution is safe for treatment in infants with AGE.

Keywords: dysnatremia, hyponatremia, hypernatremia, acute gastroenteritis, acute diarrhea, infants

