

Effect of Rehydration Fluids on Serum Sodium Levels in Children With Acute Diarrhea

The recently published research article in the journal [1] on the above topic addresses an important 'felt-need' of the practicing pediatricians. We wish to seek clarifications on certain issues.

In this study the children of infantile age group, particularly those between 6 to 12 months, were excluded. This age group contributes to almost half of the disease burden of rotavirus associated diarrhea [2]. Further, severe dehydration is more commonly seen with cholera than rotavirus diarrhea [3]. Thus, stool culture for *Vibrio cholera* or a rapid card kit test for rotavirus could have been beneficial and would have added value to the present study.

Authors have mentioned that patients with systemic illnesses were excluded from the study, but the nature of these systemic illnesses was not clearly elucidated. Conditions like diabetic ketoacidosis, diabetes insipidus, burnsetc can also lead to dehydration in children. Whether diarrhea in these children was accompanied by any of the above mentioned conditions was not clarified [4].

Whether the mean duration of symptoms were considered from the beginning of the illness or after admission of the patient to the hospital needs to be elaborated as majority of the children enrolled in the study had acute asymptomatic hyponatremia [1].

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AUTHORS' REPLY

I thank the authors of this correspondence for the keen interest shown in our work [1]. Infants between 6-12 months were excluded in our study by trial design. The infants with severe dehydration in this age group would have required intravenous rehydration over 6 hours as per World Health Organization plan C of dehydration management, and this would have created heterogeneity in terms of time to rehydration and the fluid calculations at time of analysis. Infants with dehydrating diarrhea are also deemed to be at higher risk for comorbid systemic illnesses like infections and dyselectrolytemia like hypernatremia, which necessitate individual fluid calculations and resultant exclusion of trial subjects.

Although, cholera leads to more severe dehydration compared to rotavirus diarrhea, the etiological agent of diarrhea does not determine the choice of fluid for the management of severe dehydration. We had hypothesized the equivalence of the two fluids i.e., Normal saline or Ringer lactate in terms of electrolyte change, irrespective of the etiology.

A thorough history and detailed clinical examination was performed in all subjects to exclude cases with known renal, metabolic and endocrine disorders. The blood sugar, serum electrolytes, renal function tests and arterial blood gas sampling was done for all subjects. None of cases enrolled had hyperglycemia, persistent metabolic acidosis/alkalosis, severe dyselectrolytemia and continued need for intravenous fluids after the correction of diarrhea potentially excluding the renal, endocrine and metabolic disorders. No child with pancreatitis or burns was included in our study.

The duration of symptoms was from the time of onset of diarrhea and not time of hospitalization. A relatively high proportion of children with hyponatremia could be explained by the secretory diarrhea like presentation due to the referral pattern of the study site.

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