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At discharge, caregivers were encouraged to replace 2 mL/kg of fluid for a vomiting episode and 10 mL/kg of fluid for a diarrhea episode. At home, children in the juice group could also drink any other preferred fluid, including sports beverages. The EMS group was instructed to drink only the solution provided or a comparable ORT. Caregivers were contacted daily by phone until the child had no symptoms for 24 hours. They were also asked to keep a daily log of vomiting and diarrhea frequency, as well as any subsequent health care visits. At least one follow-up contact occurred with 99.5% of the children.

The primary outcome was treatment failure, defined as the occurrence of any of the following within seven days of the ED visit: hospitalization, IV rehydration, further health care visits for diarrhea/vomiting in any setting, protracted symptoms (ie, ≥ 3 episodes of vomiting or diarrhea within a 24-hour period occurring > 7 days after enrollment), 3% or greater weight loss, or CDS score ≥ 5 at follow-up.

<table>
<thead>
<tr>
<th>TABLE</th>
<th><strong>Clinical Dehydration Scale</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Characteristic</td>
<td>Score: 0</td>
</tr>
<tr>
<td>General appearance</td>
<td>Normal</td>
</tr>
<tr>
<td>Eyes</td>
<td>Normal</td>
</tr>
<tr>
<td>Mucous membranes (tongue)</td>
<td>Moist</td>
</tr>
<tr>
<td>Tears</td>
<td>Present</td>
</tr>
</tbody>
</table>

Total CDS score: 0 = no dehydration; 1-4 = some dehydration; ≥ 5 = moderate/severe dehydration. Source: Goldman et al. Pediatrics. 2008.9

Treatment failure occurred in 16.7% of the juice group, compared to 25% of the EMS group (difference, 8.3 percentage points; number needed to treat [NNT], 12), consistent with noninferior effectiveness. The benefit was seen primarily in chil-
In children < 24 months, the treatment failure for juice was 23.9% and for EMS, 24.1%. In older children (those ≥ 24 months to 5 years), the treatment failure with juice was 9.8% and with EMS, 25.9% (difference, 16.2 percentage points; NNT, 6.2).

IV rehydration in the ED or within seven days of the initial visit was needed in 2.5% of the juice group and in 9% of the EMS group (difference, 6.5 percentage points; NNT, 15.4). There were no differences in hospitalization rate or in diarrhea or vomiting frequency between groups.

WHAT’S NEW
Kids drink more of what they like
This study, in a developed country, found rehydration with diluted apple juice worked just as well as ORT. In children ≥ 24 months of age, there were fewer treatment failures.

CAVEATS
Infants may not benefit; ondansetron played a role
Children in this study were only mildly dehydrated. The study did not include infants younger than 6 months of age, and the greatest benefit was seen in children ≥ 24 months of age.

Also noteworthy was that most of the children (67.4%) received an oral dose of ondansetron (0.1 mg/kg). Although ondansetron is expensive, it would be considered cost-effective if one dose prevents a hospitalization. Previous studies of oral ondansetron show it reduces vomiting (NNT, 5); lowers the rate of IV hydration in the ED (NNT, 5); and reduces the hospitalization rate from the ED (NNT, 17).10

Lastly, there are a variety of fluid replacement guidelines. In this study, fluid replacement was 2 mL/kg for a vomiting episode and 10 mL/kg for a diarrhea episode.

CHALLENGES TO IMPLEMENTATION
Given the ease of swapping diluted apple juice for ORT, there are no foreseen barriers to implementation.

REFERENCES

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