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EVIDENCE-BASED MANAGEMENT OF ACUTE GASTROENTERITIS IN CHILDREN WITH ORAL REHYDRATION THERAPY

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Abstract
This article summarizes practical, guideline-consistent pathways for assessing dehydration, selecting ORS regimens, using adjuncts such as antiemetics, and avoiding low-value or harmful therapies. It highlights dosing strategies, monitoring targets, and safety-net advice for families, with special consideration for infants, high-risk children, and settings where follow-up may be unreliable. The goal is a clinic-ready approach that reduces unnecessary IV use, shortens illness impact, and prevents complications while supporting caregivers through clear instructions and reassurance.

Keywords: Acute gastroenteritis; children; oral rehydration therapy; reduced-osmolarity ORS; dehydration; vomiting.

INTRODUCTION

Acute gastroenteritis in children is usually self-limited, but dehydration can develop rapidly because young children have higher fluid turnover, limited reserves, and dependence on caregivers for intake. What makes gastroenteritis deceptively dangerous is not the pathogen itself in most cases, but the mismatch between fluid losses and replacement. This is precisely why oral rehydration therapy is one of the most impactful pediatric interventions ever developed: it directly targets the physiology of dehydration rather than chasing symptoms with unnecessary drugs. Global and regional guidelines consistently identify ORT with reduced-osmolarity ORS as first-line treatment for mild to moderate dehydration, emphasizing that most children can be managed safely outside the hospital when assessment and follow-up are appropriate. [1], [2] In practice, however, ORT is underused, while IV fluids, antibiotics, anti-diarrheals, and “special” diets are overused—often because vomiting looks dramatic, parents expect rapid interventions, and clinicians face time pressure. An evidence-based approach reframes the encounter around three priorities: classify dehydration severity accurately, rehydrate with the safest effective route (preferably oral), and maintain nutrition early to support recovery. [3]

MATERIALS AND METHODS

The clinical pathway begins with risk stratification and dehydration assessment, because treatment intensity should match severity and complication risk. Most guidelines recommend combining history (fluid intake, urine output, frequency of vomiting/diarrhea) with physical findings (general appearance, thirst, mucous membranes, capillary refill, tears, skin turgor) to estimate dehydration as none/minimal, some/mild-to-moderate, or severe. [1], [3] Severe dehydration or shock signs—lethargy, weak pulses, prolonged capillary refill, hypotension, markedly sunken eyes, or inability to drink—require urgent IV resuscitation and evaluation for complications. For the majority with "some dehydration," ORT is preferred and is highly effective when delivered in a structured way, even when vomiting is present. The rationale is physiologic and robust: sodium–glucose co-transport remains intact in the small intestine, so an ORS with appropriate glucose and sodium composition drives water absorption and corrects extracellular volume deficits. Reduced-osmolarity ORS is favored because it decreases stool output and vomiting compared with higher-osmolarity formulations while maintaining safety. [1], [5]

RESULTS AND DISCUSSION

Once severity is classified, ORT should be prescribed like a medication, with a dose, a schedule, and clear targets. For children with mild to moderate dehydration, many guideline pathways recommend approximately 50–100 mL/kg of ORS over 3–4 hours, delivered in small frequent sips, with adjustments based on clinical response. [1], [4] When vomiting is active, the technique matters more than the total volume: start with 5 mL every 1–2 minutes (or even smaller amounts), then gradually increase as tolerated. This "micro-sip" method reduces gastric distension and triggers fewer emesis episodes while still achieving net absorption over time. ORT is not a single event; it is a process of steadily getting ahead of losses. During ORT, clinicians and caregivers should monitor simple endpoints: improved alertness, decreased thirst, moist mucous membranes, normalization of capillary refill, and resumption of urine output. [1] If children refuse ORS because of taste, chilled ORS, spoon feeding, or using a syringe can help, but replacing ORS with soft drinks, juice, or sports drinks is not equivalent and may worsen diarrhea because of inappropriate carbohydrate and electrolyte composition. [3] In settings with trained staff, nasogastric ORS is an effective alternative when oral intake is limited but the gut is functioning, often avoiding IV placement and its risks. [2]

After initial rehydration, the pathway shifts to maintenance and replacement of ongoing losses. The principle is straightforward: continue age-appropriate fluids and diet, and add ORS to match stool and vomit losses. A practical outpatient rule commonly used is ~10 mL/kg ORS for each loose stool (or a similar weight-based approach), plus extra for vomiting episodes, while encouraging normal drinking patterns. [3] Exclusive "clear liquid" diets or prolonged fasting are outdated; early refeeding supports mucosal recovery and prevents catabolism. [2], [4] Breastfed infants should continue breastfeeding throughout illness, with ORS used as needed for additional losses, because breast milk provides both fluid and nutrition and is generally well tolerated. [1] For formula-fed infants, routine dilution of formula is not recommended unless there are specific clinical reasons; instead, rehydrate first and then return to usual feeding as tolerated. [4] The key is caregiver guidance: families need permission to feed, not fear that feeding "makes diarrhea worse." When children resume normal intake early, the illness course is often smoother, and parents are less likely to seek unnecessary medications.

Vomiting is one of the main reasons ORT fails in real-world practice—not because ORT is ineffective, but because implementation is not protected. Evidence-based pathways increasingly support selective use of ondansetron (particularly in emergency or urgent care settings) for children with significant vomiting that prevents ORT, because reducing vomiting can increase the success of oral rehydration and reduce IV fluid use. [2] This should be framed as an ORT-enabling tool rather than a cure for gastroenteritis. Clinicians must still counsel families that diarrhea may continue and that hydration is the primary goal. Importantly, anti-diarrheal agents such as loperamide are generally not recommended in young children because of safety concerns and limited benefit in typical viral gastroenteritis; similarly, routine antibiotics are inappropriate unless there is strong suspicion of specific bacterial disease (e.g., dysentery) or special host risk factors. [2], [3] Unnecessary antibiotics not only fail to help most cases but can worsen outcomes through adverse effects and antimicrobial resistance.

Zinc supplementation is a key evidence-based adjunct in many global and resource-limited contexts, associated with reduced duration and severity of diarrhea episodes, and it is incorporated into several international diarrhea treatment frameworks. [1], [3] Where zinc is part of national protocols, typical regimens include daily supplementation for 10–14 days with age-appropriate dosing, started after initial rehydration is underway and the child can tolerate oral intake. [1] In higher-income settings, zinc use is more variable and often targeted based on nutritional risk; clinicians should align with local guidelines and availability. Another adjunct that

receives attention is probiotics, but recommendations vary by strain and evidence quality; guidelines that address probiotics generally do not recommend indiscriminate use of all products, emphasizing that effects are strain-specific and outcomes inconsistent. [2] The evidence-based stance is conservative: ORT and early feeding are the high-impact interventions; adjuncts are secondary and should not distract from hydration and monitoring.

CONCLUSION

Evidence-based management of acute gastroenteritis in children prioritizes rapid recognition and treatment of dehydration using oral rehydration therapy with reduced-osmolarity ORS, combined with early refeeding and careful identification of children who require IV fluids or urgent referral. Global and European guidelines consistently endorse ORT as first-line for mild to moderate dehydration, with weight-based dosing strategies and clinical reassessment to confirm response. Classic public health guidance further supports ongoing replacement of losses and continuation of age-appropriate nutrition rather than prolonged fasting. National guidance also emphasizes using low-osmolarity ORS and integrating ORT even when IV fluids are initiated, transitioning back to oral therapy as soon as feasible.

REFERENCES

1. World Health Organization. Diarrhoea Treatment Guidelines: including the use of low-osmolarity ORS and zinc supplementation. – Geneva: WHO.
2. Guarino A., Ashkenazi S., Gendrel D., Lo Vecchio A., Shamir R., Szajewska H. European Society for Paediatric Gastroenterology, Hepatology and Nutrition / European Society for Paediatric Infectious Diseases guidelines for the management of acute gastroenteritis in children in Europe. – 2014.
3. King C.K., Glass R., Bresee J.S., Duggan C. Managing acute gastroenteritis among children: oral rehydration, maintenance, and nutritional therapy. – MMWR Recommendations and Reports. – 2003.
4. National Institute for Health and Care Excellence. Diarrhoea and vomiting caused by gastroenteritis in under 5s: diagnosis and management (CG84). – London: NICE. – 2009 (with later surveillance updates).
5. Lifschitz C., Szajewska H. Acute gastroenteritis—updates relevant to oral rehydration solution osmolarity and supportive care. – 2023.