

Clinical Practice Guideline for the Treatment of Pediatric Acute Gastroenteritis in the Outpatient Setting

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ABSTRACT

Acute gastroenteritis (AGE) is a common illness in childhood that usually can be treated in the outpatient setting. Inaccurate assessment or delayed treatment of AGE can lead to an increased risk for invasive interventions. A literature search was conducted using PubMed, CINAHL Plus, the Cochrane Library, and Embase. Results of the query were refined to narrow the focus of relevant studies for the provider caring for dehydrated children in the outpatient setting. Use of clinical dehydration scales to assess the level of dehydration and

early initiation of oral rehydration therapy promote optimal patient outcomes. Oral rehydration therapy remains the best means of rehydrating, and ondansetron is a safe and effective adjunct to help children with persistent vomiting. The purpose of this practice guideline is to identify best practices for AGE in children older than 6 months with symptoms for less than 7 days who are being cared for in the outpatient setting. *J Pediatr Health Care.* (2016) ■, ■-■.

KEY WORDS

Pediatric, acute gastroenteritis, clinical practice guideline, outpatient treatment

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Acute gastroenteritis (AGE) is one of the most common childhood illnesses in the United States, accounting for more than 1.7 million outpatient visits each year (Freedman, Thull-Freedman, Rumantir, Atenafu, & Stephens, 2013). Up to 16% of emergency department (ED) visits are attributed to AGE, defined as three or more episodes of diarrhea and/or vomiting and possibly accompanied by other symptoms including fever, nausea, or abdominal pain that results from gastrointestinal inflammation (Fox, Richards, Jenkins, & Powell, 2012). The primary treatment goals for children with viral AGE are rehydration and prevention of complications due to dehydration from fluid loss from ongoing diarrhea and/or vomiting (Farthing et al., 2013).

Nationally recognized recommendations for AGE are oral rehydration therapy (ORT) as the primary treatment while avoiding unnecessary laboratory tests, diagnostic imaging, and medications (Centers for Disease Control and Prevention [CDC], 2003; Cincinnati

Children's Hospital Medical Center, 2011). Most children have only mild or moderate dehydration associated with AGE, and the success rate of ORT as a treatment method is approximately 96% (Nir, Nadir, Schechter, & Kline-Kremer, 2013). Despite recommendations that pediatric patients with mild to moderate dehydration receive ORT as the mainstay of treatment, many providers unnecessarily order laboratory tests, diagnostic imaging, and intravenous fluids that do not provide prognostic value or shorten the self-limited illness (Kharbanda et al., 2013). The purpose of this clinical practice guideline is to describe current evaluation and management of pediatric patients with AGE in the outpatient setting.

SEARCH METHODS

Searches were conducted on PubMed, CINAHL, Embase, and the Cochrane Library.

Search Terms

- (pediatric OR child*) AND (acute gastroenteritis OR diarrhea) AND (dehydration OR rehydr* OR oral rehydr*)

Filters

- Humans
- English
- NOT (appendicitis OR appendec*[Title])
- Date range 2006- present

ETIOLOGY AND PATHOPHYSIOLOGY

Children younger than 5 years are disproportionately affected by AGE, experiencing one to five episodes of gastroenteritis per year (Farthing et al., 2013). Enteritis pathogens enter the body through the fecal-oral route and infect enterocytes, leading to damage of the intestinal epithelium, which causes transudation of fluid into the intestinal lumen. Clinical manifestations of AGE depend on both the organism and host. Viruses account for 75% to 90% of AGE cases, but bacteria or parasitic infections may be the cause, especially in vulnerable populations (Churgay & Aftab, 2012). Rotavirus represented the most common viral pathogen; however, with widespread use of the rotavirus vaccine beginning in 2006, a substantial decrease in disease prevalence, morbidity, and health care utilization and costs has been appreciated (Leshem et al., 2014). In general, viral AGE infections are usually self-limited, but severe cases may lead to dehydration that requires further intervention to avoid fluid and electrolyte derangement.

Pathogens

- Viral (noninflammatory): Most commonly Norwalk and Rotavirus; also Caliciviruses (Norovirus and Sapovirus), Astrovirus, Enteric adenovirus

- Parasitic (noninflammatory): *Isospora belli*, *Cryptosporidium*, *Giardia lamblia*
- Bacterial (inflammatory): *Campylobacter jejuni*, *Clostridium difficile*, *Escherichia coli* (including O157:H7), *Salmonella*, *Shigella*, *Yersinia enterocolitica*

Population

This clinical guideline is intended for children older than 6 months with symptoms of AGE for fewer than 7 days. In infants with AGE who are younger than 6 months, fluid and electrolyte balance should be evaluated and other possible causes of the symptoms should be considered. In children with vomiting alone, alternative diagnoses should be considered, particularly in the presence of bloody or bilious emesis, severe abdominal pain, or a toxic appearance. Routine AGE care may not be appropriate for patients with significant comorbidities, immunodeficiency, or chronic illness. If an electrolyte or metabolic imbalance is discovered or suspected as a result of abnormal physical examination findings, then routine care should not be followed. Patients with a toxic appearance, concern for severe systemic illness (sepsis), and severe dehydration should be stabilized and transferred to the inpatient setting for additional care.

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Risk Factors

According to the Cincinnati Children's Hospital Medical Center (2011), risk factors include the following:

- Age < 24 months
- Day care attendance or exposure to sick contacts
- Recent travel to a foreign country
- Immunocompromised status
- Low socioeconomic status

EVALUATION

History

- Diarrhea: Onset, frequency, volume of stool output, appearance of stool, presence of blood, tenesmus
- Vomit: Onset, frequency, bilious or nonbilious, presence of blood
- Abdominal pain: Onset, location, duration, migration, cramping, continuous or intermittent, appetite
- Accompanying symptoms: nausea, fever, headache, myalgias

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