

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

Pediatric Emergency Medicine Practice Acute Gastroenteritis — An Update

Singh A, Fleurat M. July 2010; Volume 7, Number 7

Gastroenteritis refers to inflammation of the lining of both the stomach and small intestines. The majority of cases are infectious, with viral organisms predominating; however, bacterial and parasitic infections can be a specific concern in the appropriate patient. This article will help the reader to cite the most common etiologies for pediatric diarrheal illness in the emergency department, identify historical and examination findings that predict the degree of pediatric dehydration, describe the rationale for the use of oral rehydration therapy in mild and moderately dehydrated children, and describe the risks and benefits for medication use in the treatment of acute gastroenteritis. For a more detailed and systematic look at acute gastroenteritis in the pediatric patient, see the full text article at www.ebmedicine.net.

Key Points

Comments

<p>The 3 most useful signs in determining $\geq 5\%$ dehydration are prolonged capillary refill, abnormal skin turgor, and abnormal respiratory pattern.⁸¹</p>	<p>Prehospital care for the pediatric patient with acute gastroenteritis should focus on assessing the level of dehydration and initiation of fluid replacement to correct significant dehydration. Although contemporary pediatric dehydration scales are believed to give a more accurate reflection of the level of dehydration, these scales are far too complex to be of use in the prehospital setting. Prolonged capillary refill, abnormal skin turgor, and abnormal respiratory pattern should be taught to paramedics and assessed in children who are believed to be hypovolemic.</p>
<p>Most children are not significantly dehydrated and do not require routine laboratory testing or IV hydration.</p>	<p>The utility of laboratory testing in estimating hydration status has been evaluated in multiple studies, with researchers testing about a dozen or so variables to aid in this task. In general, these studies conclude that no single laboratory value has adequate discriminatory power to distinguish clinically-significant dehydration and that the role of these tests is therefore limited.^{28,32,81,96,97}</p>
<p>Oral rehydration solutions are cost-effective ways to treat mild to moderate dehydration.</p>	<p>For mild to moderate dehydration, administer 50 to 100 mL/kg of oral rehydration solution (ORS) over 2 to 4 hours to replace the fluid deficit, with additional ORS to replace ongoing losses. Use a teaspoon or dropper or nasogastric tube if necessary. In cases of severe dehydration, immediate IV rehydration with normal saline or Lactated Ringer's Solution should be administered at 20 mL/kg until vital signs and mental status return to normal. With frail or malnourished infants, 10 mL/kg should be administered as they may be unable to increase cardiac output in response to rehydration, and rehydration status should be reassessed frequently.</p>
<p>Serotonin-receptor blockers (eg ondansetron) can be used in the emergency department to alleviate nausea and vomiting, improve oral hydration, and cut-down on hospital admissions.</p>	<p>Ondansetron is a selective serotonin 5-HT₃ receptor-blocking agent that previously was indicated for post-chemotherapy and post-surgical nausea and vomiting and has a very good side effect profile. One meta-analysis of 11 articles by Decamp et al published in 2008 reviewed antiemetics in the pediatric population, and the ondansetron studies were the most recently published and achieved the highest quality ratings. Overall, ondansetron compared to placebo reduced hospital admissions (number needed to treat [NNT] 14), reduced the need for intravenous fluid administration (NNT 5), and resulted in cessation of vomiting while in the emergency department.¹²¹</p>
<p>Following rehydration, an age-appropriate, unrestricted diet should begin as soon as possible. Partial dilution of formula, restriction of lactose, and use of the BRAT diet are not necessary.</p>	<p>There has been much confusion and folklore about optimal foods for children with gastroenteritis. Children who are not dehydrated should continue to eat a regular diet, and infants who are breastfeeding should continue to do so unless you are told otherwise by your pediatrician. Most children with diarrhea tolerate full-strength cow's milk products. It is not necessary to dilute or avoid milk products. Recommended foods include a combination of complex carbohydrates (rice, wheat, potatoes, bread), lean meats, yogurt, fruits, and vegetables. High fat foods are more difficult to digest and should be avoided. It is not necessary to restrict a child's diet to clear liquids or the BRAT diet (bananas, rice, applesauce, toast) as these diets are poor in nutritional content.</p>

See reverse side for reference citations.

REFERENCES

These references are excerpted from the original manuscript. For additional references and information on this topic, see the full text article at ebmedicine.net.

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