

وبینار تشخیص و درمان عفونت های گوارشی شایع کودکان

پنجشنبه ۱۵ مرداد ماه ۱۴۰۵

”به صورت مجازی“

دارای ۳ امتیاز بازآموزی شناسه بازآموزی: ۲۵۶۶۳۲

لینک شرکت در برنامه:

.....

ثبت نام در این وبینار از طریق سامانه آموزش مداوم کشوری به آدرس ircme.ir می باشد.



خانم دکتر فریا شیروانی (فوق تخصص عفونی کودکان)

اپیدمیولوژی - اتیولوژی و طبقه بندی بالینی



آقای دکتر پیمان روحانی (فوق تخصص گوارش و کبد کودکان)

تظاهرات بالینی - ارزیابی میزان کم آبی - مایع درمانی



آقای دکتر سیدمحمدرضا بلورسا (فوق تخصص عفونی کودکان)

تشخیص اتیولوژی و یافته های آزمایشگاهی



آقای دکتر علی اکبر رهبری منش (فوق تخصص عفونی کودکان)

جایگاه مصرف آنتی بیوتیک و پروبیوتیک و دیگر محصولات دارویی در درمان گاستروآنتریت و دیسانتری



آقای دکتر حسین معصومی اصل (فوق تخصص عفونی کودکان)

راه های پیشگیری و نقش واکسن (روناویروس و ...) در کنترل گاستروآنتریت

ساعت

۹

الی

۱۲

گروه های هدف: متخصصین و فوق تخصص های کودکان و نوزادان، پزشکان عمومی، علوم تغذیه و داروسازی



Diarrhea: Clinical Manifestations and Management

Pejman Rohani MD

Associate Professor

Head of Pediatric Gastroenterology and Hepatology

Research Center

ESPGHAN Member

PIBD SIG of ESPGHAN

CF and Pancreatic SIG of ESPGHAN

PSC SIG of ESPGHAN

Pediatric Center of Excellence, Children's Medical Center



CLINICAL MANIFESTATION OF ACUTE GASTROENTERITIS

The signs that best predict dehydration are prolonged capillary refill time >2 seconds, abnormal skin turgor, hyperpnea (deep, rapid breathing suggesting acidosis), dry mucous membranes, absent tears, and general appearance (including activity level and thirst). As the number of signs increases, so does the likelihood of dehydration.

Tachycardia, altered level of consciousness, and cold extremities with or without hypotension suggest severe dehydration.

Viral Diarrhea

Symptoms of rotavirus AGE usually begin with vomiting followed by frequent passage of watery, nonbloody stools associated with fever in about half the cases. The diarrhea lacks fecal leukocytes, but stools from 20% of cases contain mucus. Recovery with complete resolution of symptoms generally occurs within 7 days. Although disaccharide malabsorption is found in 10–20% of episodes, it is rarely clinically significant.

Diarrheal illnesses caused by enteric adenovirus infections tend to be more prolonged than rotavirus (7-10 days)

Bacterial Diarrhea

Although there is considerable overlap, high fever $>40^{\circ}\text{C}$, overt fecal blood, abdominal pain, no vomiting before diarrhea onset, and high stool frequency (>10 per day) are more common with bacterial pathogens

Although high fever and overt fecal blood are often absent in bacterial enteritis, when present, there is a high probability of a bacterial etiology.

C. difficile toxin is associated with several clinical syndromes. The most common is mild to moderate watery diarrhea, low-grade fever, and mild abdominal pain. Occasionally, the illness will progress to full-blown pseudomembranous colitis characterized by diarrhea, abdominal cramps, and fever.

What Are the Indications for a Medical Visit?

A telephone triage can be appropriate in the management of uncomplicated AGE.

Infants and toddlers with AGE should be referred for medical evaluation if any of the following are present:

- Age <2 months

- Severe underlying disease (eg, diabetes and renal failure)

- Persistent vomiting

- High-output diarrhea with elevated stool volumes (>8 episodes/day)

- Family-reported signs of severe dehydration

What Are the Indications for Hospitalization?

Shock

- Severe dehydration (>9% of body weight)

- Neurological abnormalities (lethargy, seizures, etc)

- Intractable or bilious vomiting

- Failure of oral rehydration

- Suspected surgical condition

- Conditions for a safe follow-up and home management are not met

Does the child have diarrhea?	
<i>If yes, ask:</i>	<i>Look and feel:</i>
• For how long?	Look at the child's general condition.
• Is there blood in the stool?	Is the child:
	Lethargic or unconscious?
	Restless and irritable?
	Look for sunken eyes.
	Offer the child fluid. Is the child:
	Not able to drink or drinking poorly?
	Drinking eagerly, thirsty?
	Pinch the skin of the abdomen.
	Does it go back:
	Very slowly (longer than 2 seconds)?
	Slowly?

Classify diarrhea

For dehydration

Two of the following signs: • Lethargic or unconscious • Sunken eyes • Not able to drink or drinking poorly • Skin pinch goes back very slowly.	Severe dehydration	- If child has no other severe classification: - Give fluid for severe dehydration (Plan C). OR <i>If child also has another severe classification: - Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother to continue breastfeeding.</i> - If child is two years or older and there is cholera in your area, give antibiotic for cholera.
Two of the following signs: • Restless irritable • Sunken eyes • Drinks eagerly, thirsty • Skin pinch goes back slowly.	Some dehydration	- Give fluid and food for some dehydration (Plan B). <i>If child also has a severe classification: - Refer URGENTLY to hospital with mother giving frequent sips of ORS on the way. Advise the mother to continue breastfeeding.</i> - Advise mother when to return immediately. - Follow-up in 2 days if not improving.
Not enough signs to classify as some or severe dehydration	No dehydration	- Give fluid and food to treat diarrhea at home (Plan A). - Advise mother when to return immediately. - Follow-up in 2 days if not improving.

And if diarrhea 14 days or more

• Dehydration present	Severe persistent diarrhea	- Treat dehydration before referral unless the child has another severe classification. - Refer to hospital.
• No dehydration	Persistent diarrhea	- Advise the mother on feeding a child who has PERSISTENT DIARRHEA. - Give multivitamin, mineral supplement for two weeks - Advise mother when to return immediately - Follow-up in 5 days.

And if blood in stool

• Blood in the stool	Dysentery	<i>Treat for 5 days with an oral antibiotic recommended for Shigella.</i> - Advise mother when to return immediately - Follow-up in 5 days.
----------------------	------------------	---

CDS for children (total score from 0 to 8)

Characteristics	0	1	2
General appearance	Normal	Thirsty, restless or lethargic but irritable when touched	Drowsy, limp, cold or sweaty ± comatose
Eyes	Normal	Slightly sunken	Extremely sunken
Mucous membranes (tongue)	Moist	Sticky	Dry
Tears	Tears	Decreased tears	Absent tears

A score of 0 represents no dehydration; a score of 1 to 4, some dehydration; and a score of 5 to 8 moderate/severe dehydration. CDS = clinical dehydration scale.

Modified Vesikari score

Points	0	1	2	3
Diarrhea duration, h	0	1–96	97–120	≥121
Maximum number of diarrheal stools per 24-h period (in the course of the disease)	0	1–3	4–5	≥6
Vomiting duration, h	0	1–24	25–48	≥49
Maximum number of episodes per 24-h period (in the course of the disease)	0	1	2–4	≥5
Maximum recorded fever, °C	<37.0	37.1–38.4	38.5–38.9	≥39.0
Future health care visit	0	—	Primary care	Emergency department
Treatment	None	IV rehydration	Hospitalization	—

The classic Vesikari scale is a 20-point score and a more simple score consists of 7 variables to differentiate whose scores range between 0–8, 9–10, and >11, which correspond to mild, moderate, and severe illness, respectively.

DEGREE OF DEHYDRATION	REHYDRATION THERAPY	REPLACEMENT OF LOSSES
Some dehydration	Infants and children: ORS, 75 mL/kg over 3-4 hr. Continue breastfeeding. After 4 hr, give food every 3-4 hr for children who normally receive solid foods.	<i>Infants and children:</i> <2 yr old: 50-100 mL ORS for each diarrheal stool or vomiting episode, up to ~500 mL/day ≥2 yr old: 100-200 mL ORS for each diarrheal stool or vomiting episode, up to ~1 L/day Replace losses as above as long as diarrhea or vomiting continues
Severe dehydration	Malnourished infants may benefit from smaller-volume, frequent boluses of 5-10 mL/kg body weight due to reduced capacity to increase cardiac output with larger volume resuscitation. Infants (<12 mo) and children (12 mo to 5 yr) without malnutrition: Give 20-30 mL/kg boluses of IV isotonic crystalloid solution (e.g., Ringer lactate or normal saline solution) over 30-60 min. Repeat boluses as necessary to restore adequate perfusion. Then give 70 mL/kg over 2.5-5 hr. (Note the slower infusion times are for infants.) If IV hydration is not possible, administer ORS 20 mL/kg/hr × 6 hours via nasogastric tube. Reassess the infant or child frequently and adjust infusion rate if needed. Give ORS as soon as the child can drink. Allow to feed (breast milk or solid food) as described for some dehydration. Adjust electrolytes and administer dextrose based on chemistry values.	<i>Infants and children:</i> <10 kg body weight (children <2 yr): 50-100 mL ORS for each diarrheal stool or vomiting episode >10 kg body weight (children ≥2 yr): 100-200 mL ORS for each diarrheal stool or vomiting episode <i>Adolescents and adults:</i> Ad libitum Replace losses as above as long as diarrhea or vomiting continue If unable to drink, either administer ORS through a nasogastric tube or give dextrose-containing IV fluids as appropriate based on chemistry values

#1electrolyte

Product Introduction

Each liter contains 100 kcal

- Dextrose: 25 g/L
- Potassium: 20 mEq/L
- Sodium: 45 mEq/L
- Chloride: 35 mEq/L
- Zinc: 7.8 mg/L
- Osmolarity: 245 mOsm/L
- Bottle volume: 500 mL ($\pm 4\%$)



The low-osmolality WHO ORS containing 75 mEq of sodium, 64 mEq of chloride, 20 mEq of potassium, and 75 mmol of glucose/L, with total osmolality of 245 mOsm/L,

Reduced osmolality ORS (50/60 mmol/L Na) should be used as first-line therapy for the management of children with AGE.

Frozen fruit-flavored ORS is better tolerated than conventional ORS.

The routine use of lactose-free feeds is presently not recommended in outpatient setting.

When there is emesis, small volumes of ORS can be given initially by a dropper, teaspoon, or syringe, beginning with as little as 5 mL at a time.

In children who are under 5 years of age, severe acute malnutrition is defined by a very low weight-for-height/weight-for-length or clinical signs of bilateral pitting oedema who present with some dehydration or severe dehydration, but who are not shocked should be rehydrated slowly, either orally or by nasogastric tube, with *half-strength* standard WHO low-osmolarity oral rehydration solution with added potassium and glucose at a rate of 5–10 mL/kg/h, for up to a maximum of 12 hours, unless the child has cholera or profuse watery diarrhoea. Children suspected of having cholera or have profuse watery diarrhoea should be given standard WHO low-osmolarity oral rehydration solution that is normally made, i.e. not further diluted.

Ingredients of Resomal

Ingredients	Mmol/l
Glucose	125 mmol/l
Sodium	45 mmol/l
Potassium	40 mmol/l
Chloride	70 mmol/l
Magnesium	3 mmol/l
Zinc	.3 mmol/l
Copper	.045mmol/l
citrate	7 mmol/l
Total osmolarity	290.345 mmol/l

Children presenting with shock secondary to AGE should receive rapid IV infusion of isotonic crystalloid solution (0.9% saline or lactated Ringer's solution).

The WHO recommends IV rehydration be completed within 3 to 6 hours depending on age.

A solution containing not $<0.45\%$ saline (at least 77 mEq/L is recommended during the first 24 hours of IV rehydration therapy to prevent hyponatremia

After the child starts to urinate and if serum electrolyte values are known, add 20 mEq/L of K chloride.

Treatment of Hypernatremia

Oral or NG rehydration with hypoosmolar ORS is an effective and safe treatment and has fewer adverse effects than IV rehydration

If the child is hypernatremic and needs IV rehydration:

Use an isotonic solution (0.9% saline) for fluid deficit replacement and maintenance. Replace the fluid deficit slowly, typically for 48 hours, with the aim of reducing, it to <0.5 mmol/L/h.

Monitor plasma sodium frequently.

When to Discharge a Child Admitted Because of Acute Gastroenteritis

Prompt discharge from hospital should be considered in children admitted for AGE when the following conditions are fulfilled

Sufficient rehydration is achieved as indicated by weight gain and/or clinical status

IV fluids are no longer required

Oral intake equals or exceeds losses

Medical follow-up is available via telephone or office visit