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Standard Treatment Workflow (STW) for the Management of

ACUTE DIARRHEA

ICD-10-R19.7

DIARRHEA IS
- >3 loose or watery stools/ day
- Acute Diarrhea <14 days
- Persistent diarrhea >14 days
- Dysentery – blood in stools

ASK FOR
- Duration
- Blood in stool
- Vomiting, fever, cough, recent measles, HIV status (if known)
- Immunization status and pre illness feeding practices
- Fluids/ food/ drugs and other remedies taken during illness

EXAMINATION
- General condition of child
- Nutritional status (weight /weight for height / MUAC)
- Classify malnutrition if any
- Signs of dehydration & classify dehydration

SKIN PINCH TEST
- Locate the area on the child's abdomen halfway between the umbilicus and the side of the abdomen.
- Use thumb and first finger to pinch and not finger tips.
- The fold of the skin should be in a line up and down the child's body.
- Firmly pick up all layers of the skin and tissue under them.
- Pinch the skin for one second and then release it. Look to see if the skin pinch goes back:
  - Very slowly (longer than 2 seconds)
  - Slowly (skin stays up even for a brief instant)
  - Immediately (normal)

REFER TO HOSPITAL
- Severe malnutrition/ HIV
- Severe dehydration
- Hypernatremic (Na >145mmol/L) / hyponatremic dehydration (Na <135 mmol/L)
- Dysentery with age <1 yr/ measles in past 6 weeks/ dehydration/ sick
- Dysentery with no improvement on antibiotics
- Persistent diarrhea with dehydration
- Persistent diarrhea with serious systemic infection such as pneumonia, sepsis, infants <4 months of age, or when there is no improvement with treatment over 5 days

MANAGEMENT

CLASSIFY DEHYDRATION

Not enough signs to classify some or severe dehydration

2 of following:
a) Restless , irritable
b) Sunken eyes
c) Drinks eagerly, thirsty
d) Skin pinch - goes back very slowly

2 of following:
a) Lethargy / unconscious
b) Sunken eyes
c) Not able to drink/ drinking poorly
d) Skin pinch - goes back slowly

NO DEHYDRATION: PLAN A

- **Fluids**
  - **Give extra fluids** (as much as child will take) until diarrhea stops.
  - **Use WHO ORS** after each loose stool (in addition to usual fluid intake)
    - Upto 2 yrs → 50 -100 ml
    - 2 yrs or more → 100 -200ml
  - **On ORS packet check whether** 200ml or 1 litre of clean water is needed
  - Frequent small sips with spoon or cup.
  - **If child vomits**, wait 10 minutes then continue slowly.
  - **Homemade fluids**- salted rice water, salted yogurt drink, vegetable or chicken soup with salt and clean water, unsweetened fresh fruit juice and coconut water
  - **Unsuitable fluids -** carbonated beverages, commercial fruit juice, sweetened tea & coffee, other medicinal teas / infusions.
- **Zinc supplement** (Zinc sulphate/ carbonate / acetate)
  - 2-6 months → 10mg/day x 2weeks
  - >6 months → 20mg/day x 2weeks
- **Counsel Mother/ Attender**
  - **Feeding advise**
    - Infants on breast feed, to continue more frequent breast feeding than usual.
    - Those not on breast feed to continue their usual milk feed/ formula at least once in 3 hours.
    - Give age appropriate foods to >6 months old based on their pre illness feeding pattern

- **Danger signs (return immediately)**
  - Passing many watery stools
  - Repeated vomitings / very thirsty
  - Eating / drinking poorly
  - Develops fever / blood in stools

- **Follow up in 5 days if no improvement**

SOME DEHYDRATION: PLAN B

- Manage in clinic /daycare facility with recommended amount of ORS (75ml /kg) over 4hour period
- If weight is not known

AGE	< 4 months	4 -11 months	12 -23 months	2 – 4 years	5-14 years	15 years or older
WEIGHT	<5kg	5 – 7.9 kg	8 - 10.9 kg	11 – 15.9 kg	16 – 29.9 kg	30 kg or more
IN mL	200 - 400	400 - 600	600 - 800	800 - 1200	1200 - 2200	2200 - 4000

- After 4 hours reassess the child, classify dehydration and select appropriate plan (A /B/C)
- Give extra fluids, zinc supplement, feeding advise and counseling regarding danger signs* as in plan A
- Follow up in 5 days if no improvement

PATIENT EDUCATION
- Danger signs*
- Hygiene practices
- Hand washing , proper disposal of excreta
- Safe drinking water
- Appropriate feeding practices
- Vaccination as per IAP guidelines

INVESTIGATIONS
- **Some dehydration:** **Preferable Tests-** electrolytes
- **Severe dehydration:** **Essential tests-** CBC, electrolytes **Preferable Tests-** Renal Function Tests, VBG
- **In suspected cholera cases:** **Preferable tests-** stool for hanging drop and stool culture
- **Dysentery:** (no response to antibiotic in 2 days) **Preferable test-** stool culture & stool routine for trophozoites of Ameoba
- **Persistent diarrhea:** **Preferable test-** stool routine microscopy, urine routine microscopy, urine culture , sepsis screen

WHEN CONSIDERING ALTERNATIVE DIAGNOSIS OF PERSISTENT DIARRHEA AND DYSENTRY

SEVERE DEHYDRATION: PLAN C

- Urgent referral to hospital
- Mother to continue rehydration by giving frequent sips of ORS during transport or use NG tube when possible in patients with poor drinking

NO

CAN YOU GIVE INTRAVENOUS (IV) FLUIDS IMMEDIATELY?

NO

- Start IV fluid immediately
- Ideal fluid is Ringer lactate solution / Normal saline (DNS in malnourished)

AGE	FIRST GIVE 30 ML/KG IN	THEN GIVE 70 ML/KG IN
Infant (< 12 months)	1 hour	5 hours
Older	30 minutes	2.5 hours

- If child can drink, give ORS by mouth while the drip is set up
- Assess heart rate/ respiratory rate/ BP/ CFT/ consciousness and recognize early shock
- Refer for hospitalization
- If prevalance of cholera – Doxycycline single dose 300mg or Tetracycline 12.5mg/kg 4 times a day x 3 days. For young children Erythromycin 12.5mg/kg 4 times a day x 3 days
- Associated vomitings – Ondanstetron 0.15 mg/kg/dose IV/oral in addition to rehydration therapy
- Reassess every 15-30 minutes till a strong radial pulse is present and then every hour If hydration status is not improving, give IV drip more rapidly
- After 6 hours (infants) and 3 hours (older patients) - evaluate for dehydration and choose the appropriate plan (A, B, or C) to continue treatment
- Give ORS (about 5 ml/kg/hour) as soon as the child can drink: usually after 3-4 hours (infants) or 1-2 hours (children)
- Observe for 6 hours after the child has been fully rehydrated.
- In hypernatremic and hyponatremic dehydration child appears relatively less ill / more ill respectively and needs to be referred for hospitalization

DISCHARGE CRITERIA
- Suffcient rehydration (indicated by wt gain &/or clinical status)
- IV fluids no longer needed
- Oral intake = / > losses
- Medical f/u available

PERSISTENT DIARRHEA
- Appropriate fluids to prevent or treat dehydration
- Nutrition:
  - If breastfeeding, give more frequent, longer breastfeeds, day and night.
  - Other milk: replace with increased breastfeeding, or with fermented milk products, such as yogurt, or half the milk with nutrient-rich semi-solid food.
  - For other foods, follow feeding recommendations for the child's age: give small, frequent meals (at least 6 times a day), and avoid very sweet foods or drinks.
- Zinc for 14 days
- Supplement vitamins / minerals
- Antimicrobial to treat diagnosed infection
  - A) Intestinal infection:
    - If blood in stool: Treat like dysentery
    - If stool routine suggestive of Amoebiasis: Treat for it
    - If stool suggestive of cyst/ Trophozoite of Giardia: Give Metronidazole 5mg/kg/dose x 8hrly x 5 -7 days
  - B) Treat Non intestinal such as UTI / Otitis Media
- Follow up in 5 days
- Refer to hospital (See box)

DYSENTERY
- Treat dehydration according to assessment.
- Ciprofloxacin 15mg/kg twice a day and reassess after 2 days. Improvement: 3 days of treatment
- No improvement → Cefixime 10 mg//kg/d, 2 div doses. Reassess after 2 days. If better complete 3 -5 days of treatment.
  - If stool routine positive for Ameobiasis : Metronidazole 10mg/kg/dose 8 hourly x 7 days (10 days in severe cases)
- Refer to hospital (See box)

REFERENCES

1. *IMCI (WHO) module on Diarrhea 2014.*
2. *WHO Treatment for Diarrhea - A manual for physicians and other senior health workers 2005.*
3. *WHO GLOBAL TASK FORCE ON CHOLERA CONTROL 2010.*

KEEP A HIGH THRESHOLD FOR INVASIVE PROCEDURES

This STW has been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory, and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit our web portal (**stw.icmr.org.in**) for more information.