Diet and Nutrition Care Manual

Dehydration

Introduction

Incidence of dehydration in nursing homes has been estimated to be as high as 35%. Among nursing home residents hospitalized with dehydration and infection, the mortality rate is as high as 50%. Total body weight is made up of a large percentage of water: approximately 60% (1). Approximately two thirds of total body water is intracellular and one third is extracellular (1). Percentage of body water decreases significantly with aging.

Dehydration can have serious consequences for an older adult: decreased functional ability, predisposition to falls and infections, fluid and electrolyte imbalances, disorientation, and even death. Because some older adults have diagnoses that cause disorientation, it is important to look for all symptoms of dehydration, not just disorientation. The ultimate goal of care is to prevent dehydration from occurring by identifying potential risk factors, developing a preventative care plan and providing sufficient fluid to maintain proper hydration and health

Federal nursing home regulation F327 (hydration) dictates that, “The facility must provide each individual with sufficient fluid intake to prevent dehydration” and "sufficient fluid" means the amount of fluid needed to prevent dehydration (output of fluids far exceeds fluid intake) and maintain health. The amount needed is specific for each individual, and fluctuates as the person's condition fluctuates (e.g., increase fluids for fever or diarrhea) (2).

Practitioners should follow the standard process of identification, assessment, treatment and monitoring when addressing dehydration. Assessment should focus on identifying risk factors that may contribute to the development of dehydration, and clinical factors that may be present. Care plans should be developed based on the assessment and the risk factors identified; and goals should be measurable. Interventions should be individualized, aggressive, and revised as often as needed based on the individual’s responses, outcomes and needs. Staff should be instructed on the care plan interventions to assure that the care plan is followed for each individual and that individuals actually receive the recommended amount of fluid each day. Identify favorite beverages, offer them frequently, and encourage fluid intake as often as needed.

Risk Factors for Dehydration Include (3):

- Coma/decreased sensorium
- Fluid loss and increased fluid needs - Fluid loss exceeds the amount of fluids a person ingests (e.g., loss from vomiting, fever, diarrhea, uncontrolled diabetes).
- Fluid restriction secondary to renal dialysis.
- Functional impairments that make it difficult to drink, reach fluids, or communicate fluid needs (e.g. aphagia, dysphagia).
- Refusal of fluids.
- MDS 3.0 triggered Care Area Assessment (CAA) for dehydration (see chart next page).

Fluid and Electrolyte Volume Deficit Disorders

There are 3 types of fluid and electrolyte volume deficit disorders:

1. Hypertonic dehydration is a water deficit (water loss is greater than sodium loss): may be due to fever, elevated temperature, air fluidized beds, dry oxygen, diuretics, laxatives, cardiac glycosides, inadequate access to fluids (dependence, dementia, reduced consciousness).
2. Isotonic dehydration (equal amounts of body water and sodium lost): may be due to GI fluid losses (diarrhea, vomiting, excess ostomy output).
3. Hypotonic dehydration (sodium loss exceeds water loss): may be due to diuretics and low sodium diet, glucocorticoid deficiency, hypothyroidism, syndrome of inappropriate antidiuretic hormone secretion (SIADH) (4).

Laboratory Assessment for Dehydration

Lab Value	Indication of Dehydration		
	Hypertonic	Isotonic	Hypotonic
Serum osmolality	>Normal	WNL	<Normal
Serum Sodium	>Normal	WNL	<Normal
Hemoglobin/ hematocrit	>Normal	>Normal	>Normal
Serum albumin	>Normal	>Normal	>Normal
Blood urea nitrogen (BUN)	>Normal	>Normal	>Normal

Litchford, 2011. Used with permission (4).

MDS 3.0 Indicators of Dehydration/Fluid Maintenance Include (3)**:**

Symptoms	Abnormal Laboratory Values	Cognitive, Communication and Mental Status	Diseases/Conditions *	Oral intake
• Dizziness on sitting or standing • Confusion or change in mental status • Lethargy • Recent decrease in urine volume or more concentrated urine than usual • Decreased skin turgor, dry mucous membranes • Newly present constipation, fecal impaction • Fever • Functional decline • Increased risk for falls • Fluid and electrolyte disturbance	• Hemoglobin • Hematocrit • Potassium chloride • Sodium • Albumin • Blood urea nitrogen • Urine specific gravity	• Depression or anxiety • Behavioral disturbance that interferes with intake • Recent change in mental status • Alzheimer's or other dementia that interferes with eating due to short attention span, resisting assistance, slow eating/drinking, etc. • Difficulty making self-understood • Difficulty understanding others	• Infection • Fever • Diabetes • Congestive heart failure • Swallow problems • Renal disease • Weight loss • New CVA • Unstable acute or chronic condition • Nausea or vomiting • Diarrhea • Excessive sweating • Recent surgery • Recent decline in activities of daily living, including body control or hand control problems, inability to sit up, etc. • Parkinson's or other neurological disease that requires unusually long time to eat • Abdominal pain, with or without diarrhea, nausea, or vomiting • Newly taking a diuretic or recent increase in diuretic dose • Takes excessive doses of a laxative • Hot weather (increases risk for elderly in absence of increased fluid intake)	• Recent change in oral intake • Skips meals or consumes less than 25% of meals • Fluid restriction • Newly prescribed diet • Decreased perception of thirst • Limited fluid-drinking opportunities • Fluid intake limited to try to control incontinence • Dependence on staff for fluid intake • Excessive output compared to fluid intake

*****That predispose to limitation in maintaining normal fluid balance

Hydration/Fluid Needs

Assure that each individual receives sufficient amounts of fluids based on individual need to prevent dehydration and maintain health. Fluid needs calculations are generally based on the following estimates:

Condition	Fluid Requirement	Alternate Method
No Renal or Cardiac Distress	30 mL/kg body weight	1 mL/kcal consumed
With Renal or Cardiac Distress	25 mL/kg body weight	Or as determined by physician
Dehydration	35 mL/kg body weight	When rehydrated, 30 mL/kg

Note: All individuals should receive a minimum of 1500 mL fluids per day unless otherwise indicated by the physician.

Individuals with dysphagia will need the appropriate fluid consistency (as recommended by the speech language pathologist) for all liquids (i.e. soup broths, oral nutritional supplements, etc.). For individuals on enteral feedings, orders should include an adequate amount of free water, and feedings should be administered as ordered. Also see *Appendix* under *Nutrient Needs Calculations* for additional information.

Sources of Water

Water comes from numerous sources including fluids, foods and a small amount that is produced by oxidation of food. Even foods like beef, chicken, and fish contain small amounts of fluid (5).

- Fluids may include water, milk, coffee, tea, juice, milkshakes, Popsicles®, soda pop, ice cream, sherbet, fruit ices, gelatin, broths, soups, puddings, custards and any food that is fluid at room temperature.
- All individuals should have a water pitcher at the bedside (excluding those with fluid restrictions). People who have orders for thickened liquids should receive fluids thickened to the consistency ordered (6).

If fluids by mouth are not tolerated, an IV or tube feeding may be initiated. Adequate fluids should be provided through the IV or tube. The registered dietitian nutritionist (RDN) should assess IV or tube feeding and flush recommendations, and monitor and reevaluate as needed. Free water present in enteral feedings is indicated on the product label and/or in product information provided by the manufacturer. In general, higher calorie products have lower water content. See *Chapter 10: Nutrition Support* for more information.

Solutions to Prevent/Treat Dehydration (5,6)

1. Monitor for risk factors and symptoms.
2. If risk of dehydration is identified, monitor intake/output (I&Os) as per facility protocol.
3. Educate individual residents/patients, families and staff on the need to encourage fluids:
   - Provide access to fluids at all times (excluding those on fluid restrictions). This can include a water pitcher and cup at the bedside, a water bottle on the wheelchair, a travel mug, or offering beverages every few hours.
   - Encourage nursing assistants to offer and encourage fluids each time they turn individuals on turning schedules. TAPS stands for: Turn, Align, Position, Sips (offer sips of fluid).
   - Offer additional fluids during medication pass (4 to 8 ounces).
4. Provide assistance to drink as needed:
   - Offer fluid with every contact.
   - Provide assistance to drink fluids with and in between meals.
5. Set up a hydration station: Self-serve juice/beverage machine in common area.
6. Be sure those on thickened liquids receive adequate fluids as they may be at greater risk for dehydration.
7. Offer a variety of fluids: Any food that is fluid at room temperature is considered a fluid; carbonated beverages, coffees, teas, gelatin, ice cream, fruit ices, juice, milk, milkshakes, sherbet, soup or broth, water.

References

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6. Dorner B, *Dysphagia Diet Solutions.* Naples, FL: Becky Dorner & Associates Inc.; 2008.