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ELDER CARE

A Resource for Interprofessional Providers

Diarrhea and Fecal Incontinence

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Diarrhea is usually defined as an abnormal increase in stool liquidity, increased stool frequency (> 3-5 stools per day) and stool weight of greater than 200 grams per day. Diarrheal illness is the second most common cause of death worldwide and one of the four most common infectious illnesses among elderly nursing home residents in the US. Diarrhea is considered acute when it resolves in 7-14 days. Chronic diarrhea persists for more than 3-4 weeks. Nosocomial diarrhea usually begins more than 72 hours after hospital admission and is often caused by medications (usually, medications containing sorbitol), superinfection from broad spectrum antibiotics or secondary to enteral tube feeding. If diarrhea continues longer than 2-3 days and if the illness is associated with fever, dehydration, weight loss it may become life threatening (especially in frail, elderly persons).

Mechanisms of Diarrhea - Pathophysiology

Osmotic diarrhea Secondary to ingestion of poorly absorbed solutes which leads to malabsorption. Examples are lactose intolerance and pancreatic dysfunction.

Malabsorption diarrhea due to a combination of biochemical and mechanical dysfunction. An example is patients with hypoalbuminemia, a decrease in oncotic pressure causes mucosal edema resulting in fluids not being reabsorbed.

Secretory diarrhea Secondary to bowel secreting more electrolytes and water than is reabsorbed. Often associated with neoplasms or bacterial toxins that stimulate intestinal secretion via the hormones that are produced.

Infectious diarrhea from infectious agents invading the mucosa. Often due to excessive antibiotic use, ingestion of contaminated food or contaminated enteral feedings. *C. difficile* is the most common nosocomial cause of diarrhea.

Exudative diarrhea Secondary to changes in the mucosal integrity, epithelial loss and enzyme destruction from radiation and/or chemotherapy.

Causes of Diarrhea	
Acute	Chronic
Bacterial - Salmonella, Shigella, E coli, C. difficile Campylobacter	Inflammatory Bowel disease – Ulcerative colitis, Crohn’s disease
Viral - Norovirus, Rotavirus	Functional – Irritable bowel syndrome
Parasitic – Giardia lamblia, Cryptosporidia, E histolytica	Malabsorption syndromes – Celiac sprue, Whipple’s disease
Medications – Broad spectrum antibiotics, sorbitol-containing elixir, prokinetic agents, magnesium or phosphate containing antacids, antineoplastic agents	Tumors – Zollinger-Ellison syndrome, colonic and Villous adenoma
	Surgery – Intestinal gastric bypass or resection
	Endocrine – diabetes, hyperthyroidism, Addison’s

TIPS FOR TREATING DIARRHEA AND FECAL INCONTINENCE

- Presence of fever with blood or pus in stool suggests a serious cause.
- Assess for dehydration and hemodynamic instability.
- Do not forget to perform a rectal examination.
- Do not use antidiarrheals if possibility of *C. difficile*, Salmonella or Shigella infection.
- Elderly patients may mistake fecal incontinence for diarrhea.

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Continued from front page

Evaluation of Diarrhea

History Recent travel, food contamination, source of water, duration and severity of diarrhea, abdominal pain or vomiting, frequency and timing of bowel movements, change in stool characteristics (blood, pus, mucus), loss of weight or appetite, rectal urgency or tenesmus should be noted.

Physical examination Evaluate fluid and hydration status, pay careful attention to the abdomen and perform a careful digital rectal examination to look for sphincter incompetence, anal fissures and fecal impaction.

Laboratory testing for acute diarrhea is usually not indicated. Exceptions are in patients with dehydration, fever and bloody stools. In these cases obtain a CBC, BUN and creatinine, and stool samples for fecal leukocytes, microscopy and a *C. difficile* toxin assay (if recent antibiotic use or hospitalization).

Laboratory testing for chronic diarrhea is essential. Stool should be tested for culture, fecal leukocytes, microscopy for ova and parasites and Sudan stain for fat. Check specifically for *G. lamblia* antigen, *Aeromonas* and *Microsporidia*. If Sudan stain is positive, check for fecal fat excretion. Sigmoidoscopy or colonoscopy should follow to look for inflammatory causes or tumors. Calculate the stool osmotic gap [290-2 (stool sodium + stool potassium)]. An osmotic gap <50 mEq/L indicates secretory diarrhea whereas a larger gap suggests an osmotic diarrhea. Patients with osmotic diarrhea may have carbohydrate malabsorption (diagnosed by lactase assay or dietary review) or may have covert magnesium laxative abuse (perform stool magnesium assay). Secretory diarrhea may require testing of plasma gastrin, vasoactive intestinal peptide, histamine, and urinary 5-hydroxyindole acetic acid (5-HIAA) level for an endocrine related cause. Surreptitious laxative abuse could be ruled out by a fecal laxative assay.

Treatment

1. Fluid and electrolyte correction: Parenteral fluid containing NaCl, KCl and glucose are generally required. Commercially available oral rehydration solution can be given if the diarrhea is not severe.

2. Treat underlying cause when able. Use antibiotics for *C. difficile* associated diarrhea. Prescribe steroids or 5-ASA for IBD. Advise a gluten free diet for celiac disease. Bile acid resin binding agents (cholestyramine) may help in

malabsorption diarrhea associated with enteral feeding.

3. Symptomatic treatment may be needed. Oral loperamide, codeine or diphenoxylate may decrease diarrhea. Should be avoided in sick patients with bloody diarrhea or if *C. difficile* infection or ischemic colitis is suspected.

Fecal Incontinence

About one percent of community dwelling senior citizens and 50 percent of nursing home residents have fecal incontinence. Double incontinence (urinary and fecal) is 12-fold commoner than fecal incontinence alone.

Risk factors include prior history of fecal incontinence, presence of neurologic or psychiatric disease, dementia and poor mobility. Elderly patients may mistake fecal incontinence as diarrhea.

Types of fecal incontinence are

1. Overflow incontinence seen in bed-ridden cognitively impaired patients.
2. Reservoir incontinence seen in conditions that decrease the rectal and colonic capacity as in patients with radiation proctopathy and IBD.
3. Rectosphincteric incontinence is due to structural damage to one or both anal sphincters.

Evaluation

1. History and Exam: history of medication use, rectal exam to exclude fecal impaction, neurologic exam and assessment of sphincter.
2. Flexible sigmoidoscopy or colonoscopy can help to assess colorectal mucosa for colitis or neoplasm.
3. Anorectal manometry, anal ultrasound and MRI may identify defects in the internal and external sphincters.

Treatment

1. Conservative treatment is used in patients with dementia. Habit training (regularly scheduled defecation) is effective for patients with overflow incontinence. Sphincter training exercises alone do not increase the number of continent episodes.
2. Antidiarrheals: Loperamide, codeine and diphenoxylate may reduce stool frequency and reduce fecal incontinence.
3. Biofeedback is a non-invasive outpatient modality that may help.

References and Resources

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