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# Clinical Approach to Diarrhea in Long Term Care Hospitals

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# 1. Clinical Approach to Diarrhea in Long Term Care Hospitals

Diarrhea is common in long term care hospitals but at many times get underdiagnosed. Symptomatic treatment of diarrhea is sometimes effective but tends to relapse after treatment is seized and also side effects are seen. The root cause of diarrhea must be evaluated in order to treat diarrhea effectively and efficiently. Here are some commonly encountered causes of diarrhea in long term care hospitals and how to approach.

### 2. Constipation

Constipation is probably the number one cause of diarrhea and is the most underdiagnosed condition. In these cases, diarrhea can be referred to as 'tip of an iceberg'. With decreased production of intestinal mucus and hypoactive bowel movements, fecal materials gather surrounding the intestinal wall and form a 'feces lumen'. Once this is formed, the solid material of feces gets added to the feces lumen and only liquid portion of feces are excreted. Evaluation of such conditions require abdomen x-rays. When lumen formation and fecal material clumps are found, treatment of diarrhea should follow that of constipation.

## 3. Clostridium Difficile

In many cases of diarrhea in hospital settings especially after or while on antibiotic use, Clostridium difficile infection should always be suspected. Tests for Clostridium difficile include PCR test, toxin AB test and culture. Treatment is started when suspected or when test results are positive. Metronidazole po medications are first line of choice whereas in drug resistant forms vancomycin po medications

are also used. Supportive medications such as dioctahedral smectite is often used but loperamide should be used with caution since it can promote retention of bacteria in the intestine.

### 4. SIBO (Small Interstinal Bacterial Overgrowth)

In cases where Clostridium difficile has not been confirmed but diarrhea and bloating exists especially at the small bowel, SIBO should be suspected. SIBO requires relatively longer period of antibiotic use compared to clostridium difficile and many times require change in diet. Commonly used antibiotics are rifaximin or metronidazole. After a course of antibiotics, soluble fiber contents in medicine forms such as alginic acid is used to help maintain healthy microbiota.

# 5. Bile Acid Malabsorption/ Decreased Bile Production/ Increased Gastric Acid Production

Bile acid malabsorption is commonly seen in the elderly and is hard to suspect. Easiest way to find out is to examine the color of the stool, if feces have green color it is suspected. It also presents with constant pain. Medications such as cholestyramine, UDCA, milk thitle extract can be used and additionally, alginic acid helps keep steady state.

Decreased bile production is hard to suspect. Mostly it presents with sour smell in stool. The sour smell is due to lack of neutralization of gastric acid by bile acid. Evaluation of liver enzymes may be necessary as this could also be symptoms of GB stones. Treatments with milk thitle extract, alginic acid can be helpful and additionally, adding lecithin to diet should be considered.

Increased gastric acid production is similar to decreased bile production. Only difference is in management in that PPI is added.



Figure 1: Colon feces lumen formation: Patient reported of having diarrhea and abdomen x-ray showed formation of feces lumen and feces clump.

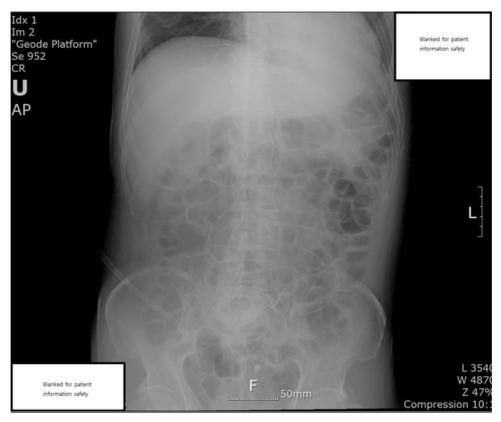


Figure 2: Small intestinal bacterial overgrowth: Note the gaseous distension at small intestine.

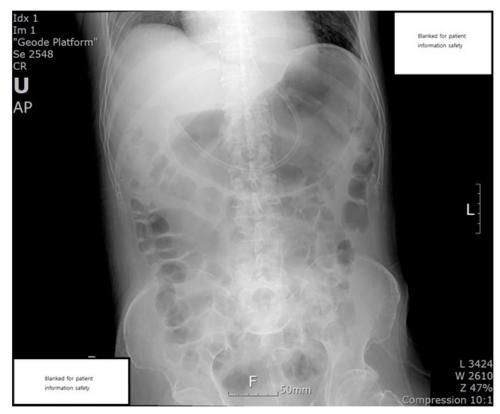


Figure 3: Levin tube induced stomach air. Chronic bloating was relived after setting Levin tube at 50cm and air relief 2 hours after meal.

#### 6. Irritable Bowel Syndrome

Since polypharmacy is common in the elderly, and at many times it is hard to keep track of every medication taken. These factors all contribute to development of irritable bowel syndrome. It presents with abdominal pain and increased frequency of diarrhea rather than amount. Firstly, detailed examination of medications is necessary including dietary supplements. For medical treatment, Scopolamine shows promise in these circumstances but also should be used with caution due to anticholinergic property of the medication. Alginic acid helps with regular bowel movement.

#### 7. Gaseous Distension

Gaseous distension is commonly encountered. Causes of gaseous distension include excessive gas formation due to dysbiosis and excessive air consumed (Mostly through Levin tubes). Antibiotics to improve gut microbiota should be considered first line but, gas itself has to be released as well. Medications such as digestive enzymes and simethicone shows effect. Procedures such as rectal tube insertion for 12 hours to 18 hours should also be considered. Also in patients with Levin tube feeding, stomach air relief by opening Levin tube and massaging stomach after 1 or 2 hours of meal should be considered. In certain circumstances setting levin tube at 50 or 60cm rather than 70cm could be helpful. Chronic diarrhea has variety of causes and thus follow different treatment strategies. Elderly is not an old adult, evaluation and treatment should not follow the same strategy of an adult. It is important to set up a unique plan for each individual.