

## Chemotherapy-Induced Diarrhea

### Case Study

L.M. is a 61-year-old man who presented to his oncologist with complaints of uncontrollable diarrhea with associated fever and progressive weakness for one week. These symptoms started a day after he received his fourth cycle of 5-fluorouracil (5-FU) and leucovorin, the chemotherapy regimen that he was receiving to treat his colon cancer.

L.M. reported for work a day after receiving 5-FU and started having bouts of watery diarrhea every one to two hours that prompted him to end his workday around noon. The diarrhea persisted for the next two days and was refractory to loperamide and diphenoxylate. His wife asked him to see his oncologist after noticing that he was getting progressively weaker with accompanying loss of appetite and abdominal cramping. L.M. denied nausea or vomiting but reported an approximately 10 lb weight loss in the past month. He denied having fevers, chills, or sweats at home, but his oral temperature was 101.3°F on presentation.

The patient's medical and surgical history included a right upper lobectomy three years prior to this episode for poorly differentiated non-small cell lung cancer and a right hemicolectomy two years prior for a moderately differentiated adenocarcinoma of the ascending colon. L.M.'s medical history was significant for gastrointestinal reflux disorder and hyperlipidemia treated with rabeprazole sodium and simvastatin. Social history included a history of alcohol (quit 14 years ago) and current tobacco use (25 pack per year smoking history).

Review of systems revealed poor appetite, lethargy, fatigue, and weight loss. L.M. reported dry skin, taste alterations (salty), and a history of oral thrush. Other pertinent findings included dyspnea on exertion and occasional upper respiratory infections (four to five times per year).

On physical examination, L.M. appeared ill and frail but was in no acute distress. He was alert and oriented to name, place, and time; communicated effectively; and had an appropriate affect. His skin was dry and cool to touch with fair turgor. Mucous membranes were moist and pink. Oral examination revealed thrush with no erythema or signs of inflammation of the glands or tonsils. No lymphadenopathies were appreciated. Bilat-

eral bronchovesicular breath sounds that cleared with coughing were auscultated, and cardiac examination was unremarkable. The abdomen was flat and soft but tender to palpation; no rebound tenderness, guarding, or apparent organomegaly or mass was found on palpation. External rectal examination showed erythema around the anus without skin breakdown.

His vital signs were temperature 101.3°F, blood pressure 92/50 mmHg, pulse 60 beats per minute, and respirations 18 breaths per minute. His blood chemistries were sodium 134 mEq/l, potassium 3.2 mEq/l, chloride 102 mEq/l, carbon dioxide 26 mEq/l, blood urea nitrogen 14 mg, creatinine 0.9 mg, glucose 171 mg, magnesium 2.3 mEq/l, phosphorus 1.6 mg, and calcium 7.7 mg.

Blood counts revealed a white blood cell count of 2.7 (neutrophils 22, bands 25), hemoglobin 10.6 g, hematocrit 30.6%, and platelets 193,000 mm<sup>3</sup>. Stool cultures for *C. difficile* toxin and ova and parasites were negative. L.M.'s inpatient medication profile included fluconazole 200 mg daily, metronidazole 500 mg IV every eight hours, octreotide acetate 500 mcg subcutaneously every eight hours, levofloxacin 500 mg IV daily, docusate sodium 100 mg daily, famotidine 20 mg IV every 12 hours, hydromorphone 1 mg every three hours as needed, diphenoxylate 2.5 mg every two hours as needed, and prochlorperazine 5–10 mg IV every four hours as needed.

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### Clinical Problem Solving

Responding to this clinical interview by Associate Editor Nancy Jo Bush, RN, MN, MA, AOCN®, is Marlon Garzo Saria, RN, MSN, OCN®, an oncology clinical nurse specialist at the University of California, San Diego.

**When did chemotherapy-induced diarrhea (CID) become a focus of clinical assessment and treatment for nurses?**

Acute diarrhea, although not commonly encountered in the general population of patients with cancer, is a symptom that can

cause severe distress, negatively affect quality of life, and be life threatening. However, it was not recognized as such until the mid-1990s, when several oncology nurses met to discuss the care of a patient with CID. This gathering led to the formation of the Working Group on Cancer-Related Diarrhea during the 1995 Oncology Nursing Society Congress in Anaheim, CA (Rutledge & Engkeling, 1998). Then, an expert multidisciplinary panel of physicians, nurses, and pharmacists developed recommendations for the treatment of CID in 1998 (Wadler et al., 1998), and these standards remain the most widely referenced in current literature and practice.

**Diarrhea is a side effect of many cancer treatments. What population of patients is most at risk for CID?**

In the case study, a 61-year-old man with colon cancer presented with acute diarrhea and fever. The accompanying elevation in body temperature sets this case apart from the typical presentation of diarrhea in patients with colon cancer.

CID is a significant cause of morbidity and mortality in a subgroup of patients with cancer and may be more devastating to adults with cancer as they advance in age. Some of the most common sequelae associated with CID, such as electrolyte imbalances, malnutrition, and dehydration (Hogan, 1998), may not be as well tolerated by older adults when compared to their younger counterparts. Because most malignancies occur in older adults, the case study points out this population's inherent clinical risk of developing CID.

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