

# On-Demand Clinical News

## Management of Clostridium Difficile in the Hospice Patient

Tracey Gordon, PharmD

CDI (*Clostridium difficile* infection) is the most common cause of infectious diarrhea in hospitalized patients in North America and Europe and is the causative organism of antibiotic-associated colitis. Even though there have been no studies of the treatment of *Clostridium difficile* in the hospice patient, risk factors, most treatment modalities, and prevention techniques remain the same. This summary includes recommendations from the American Journal of Gastroenterology, Society of HealthCare Epidemiology of American, and the Infectious Disease Society of America.

### General Risk factors include:

- Antibiotic usage (within the last 3-months)
  - Frequently associated antibiotics include: Fluoroquinolones, Clindamycin, Cephalosporins (broad spectrum) and Penicillin; Macrolides and Bactrim only occasionally cause C Diff
- Advanced Age (>64 years): 10-fold higher risk
- Female Gender
- Hospital Stay: previous 2-months and length of stay determines risk
- Long-Term Care Facilities
- Diabetes Mellitus
- Renal Failure or Hepatic Failure
- Obesity
- Malnutrition: low albumin or muscle wasting
- Immunosuppression: Cancer, Chemo, Organ Transplant, etc.
- Gastrointestinal Issues: IBS, bowel preps, tube feedings
- Acid-Suppressants: Proton-pump inhibitors (PPIs) and H-2 Blockers

So, as you can observe, a majority of our patients have most these general risk factors for development of *Clostridium difficile*. What can we do to lower the risk of CDI in our patients?

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## Upcoming Lunch and Learn Presentations

### July

#### **“Do you Mean Ketamine? An Older Medication Gaining New Popularity in Hospice”**

Presenter: Kristin Speer,  
PharmD, BCPS, CMTM, RPh

Tuesday, July 12, 2016 at 3:00pm ET;  
Wednesday, July 13, 2016 at 12:00pm ET

### August

#### **“ALS Management in the Hospice Patient”**

Presenter: Joelle Potts, PharmD, CGP  
Tuesday, August 9, 2016 at 3:00pm ET;  
Wednesday, August 10, 2016 at  
12:00pm ET

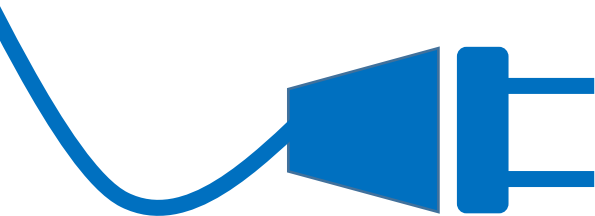
RSVP by contacting Suzanne Stewart, Lunch and Learn Coordinator, at:  
1-800-662-0586 ext. 3303 or  
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(<https://phc.procarerx.com/resource/edutools/l-l>).





**Modifiable Risk Factors:**

1. Discontinue antibiotics or change to one with lower risk of CDI development
2. Taper off and discontinue PPIs or H2-blockers if no definitive diagnosis of PUD or GERD
3. Decrease rate or discontinue tube feedings
4. Discontinue any chemotherapy or immunosuppressing agents

The Journal of Palliative Medicine looked at all the studies between January 1, 2001 to June 30, 2011 regarding antibiotic usage in hospice patients and symptom improvement. They concluded out of the 8 studies that met criteria looking at antibiotic therapy for treatment of bacteremia, URI improvement, site specific, fever resolution and UTI's, that the benefits with improvements of symptoms and QOL were only observed in treatment of UTIs. In addition, the CDC estimates that half of antibiotic prescriptions in the outpatient setting may be unnecessary or inappropriate. Therefore, before initiating an antibiotic for any infection, consider risks, and treat patient symptoms in alignment with their goals of hospice therapy.

When selecting therapy for treatment of CDI, one must consider the severity, cost of treatment and presence on the preferred drug list (PDL). The severity class dictates the suggested therapy for eradication of infection.

**Cost of Antimicrobial Therapy for Eradication of CDI**

Severity	Antimicrobial	Dose	Cost per 10-day regime	On Preferred Drug List?
Mild-Moderate or Recurrent	Metronidazole 500mg tablets	500mg PO TID	\$22	Yes
Severe or Recurrent	Vancomycin 125mg capsules	125mg PO QID	\$680	No
Severe or Recurrent	Vancomycin 125mg IV compounded for PO use	125mg PO QID	\$100-400	No, requires manager approval
Recurrent	Fidaxomicin 200mg tablets	200mg PO BID	\$2800.00	No

Adjunct therapies to antimicrobials play an important role in the treatment of CDI. Other therapies include avoiding foods that may worsen diarrhea (i.e. spicy or greasy foods, caffeine, high sugar, etc.), hydration with clear liquids like water and/or herbal teas; and avoiding juices like OJ that are acidic and can irritate the gastrointestinal tract. In addition, it is recommended to avoid anti-peristaltic agents (i.e. loperamide, diphenoxylate/atropine and opium tincture) and to consider the addition of an anion-binding resin which provides bulk to the stool, may bind to the CDI toxins, and may restore normal colonic flora. Here is a chart to summarize the anion-binding resins and the estimated cost for therapy.

**Cost of Anion-Binding Resin Therapy**

Anion-Binding Resin	Dose	Cost per 15-days	Preferred Drug List?
Cholestyramine Granules Can	4g PO TID	\$15	Yes
Cholestyramine Granule Packets	4g PO TID	\$45	Yes
Colestipol Tablets	5g PO Q12H	\$45	No
Colestipol Granules	5g PO Q12H	\$70	No

Other therapies may include the addition of a probiotic. A probiotic is a live organism, which in theory combats altered gastrointestinal flora in CDI. However, extensive studies in the Cochran Reviews conclude they reduce the incidence of CDI associated diarrhea, but not the overall incidence of the infection. In addition, since probiotics are considered “dietary supplements” by the FDA, safety data are scarce. Since they are living organisms, they should be used cautiously, if at all, in individuals with significant immune suppression because of the possible risk of bacteremia or fungemia. There are cases of *S. boulardii* fungemia reported in patients with central venous catheters, and thus use in an ICU or in immunocompromised patients, they are not recommended. There are also numerous case reports of invasive lactobacillus infections in non-immunosuppressed (mostly elderly) patients. So, do not rule out risks of these products just because they are supplements and readily available to your patients.

### Specific Probiotic Recommended Products

Product	Product Ingredient/s	Recommended Dose for Abx Associated Diarrhea	Cost per day
Bio-K+	L. Acidophilus, L. Casei, L. rhamnosus 50 billion per capsule	AAD or CDiff-associated Diarrhea prevention: 2 caps PO during tx and 5-days afterward	\$4
Florastor	Saccharomyces boulardii 250mg per capsule	AAD prevention: 2 caps po BID during and continue for 3-5-days afterwards	\$4
Dannon or Yoplait Yogurt	Choose a product with the National Yogurt Association seal to assure 100 million live and active bacteria per gram	AAD prevention: 4-8 oz (100-200g) PO BID during and continue 5-days afterwards	\$2

Lastly, to avoid the spread of CDI, practice prevention measures that include, but are not limited to, hand hygiene and barrier precautions, single-use disposable equipment, and disinfection with chlorine-cleaning agents. A dedicated commode or single room for the infected patient is also suggested to prevent the transmission of CDI to other patients and/or family members. Hand sanitizers (alcohol) will not kill *C.diff* spores, and should not be used.

When admitting a new patient to hospice or when considering treating a possible infection, every patient, and case, is unique and should be treated accordingly. However, we should practice preventative measures, by limiting antibiotic usage, discontinuing tube feedings, discontinuing gastrointestinal suppressive agents, and practicing prevention hygiene measures to prevent any further discomfort or development of CDI in their last days.

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### *Positive thought for the day...*

**They may FORGET your name, but they will NEVER FORGET how you made them feel.**

-Maya Angelou

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7. Surawicz, CM, et al. Guidelines for the Diagnosis, Treatment and Prevention of Clostridium difficile Infections. *Am J Gastroenterol* 2013; 108:478-498.

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### Corrections: May/June 2016 On-Demand Clinical Newsletter

In last edition's article, "Unique Routes of Administration in Hospice Care," an error was mistakenly printed. The line in the article read, "Moistening medications with water and/or an oil-based lubricant help to east insertion." However, the line was supposed to read as follows: "Moistening medications with water and/or a water-based lubricant help to ease insertion." *Apologies from the Editor.*

ProCare HospiceCare welcomes all suggestions and comments. If you would like additional information about our services, have ideas for articles, or wish to submit a comment, email us at [resources@procarerx.com](mailto:resources@procarerx.com).

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