

Pharmacy NewsCapsule

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Clostridium difficile Infections in LTC Residents

By Molly Turbin Pharm D Candidate

C. difficile is a highly infectious strain of bacteria that is a common cause of acute diarrheal illness in nursing homes residents, as well as outbreaks of C. difficile -associated diarrhea (CDAD). The risk factors for infection with C. difficile in nursing homes include antibiotic use, especially the use of broad spectrum penicillin-like antibiotics such as the cephalosporins and TMP-Sulfa. Major avenues of C. difficile transmission are poor handwashing practices by healthcare personnel, and contaminants in the facility environment, such as contaminated toilet seats or telephones.

A diagnosis of CDAD could be indicated with the occurrence of at least three episodes of loose, watery, or unformed stools in one day, for two or more days, in conjunction with the use of an antibiotic or antineoplastic medication in the past four to six weeks. Several lab tests are available to confirm presence of C. difficile.

All residents with CDAD should be given adequate fluids to both re-hydrate and replenish lost electrolytes. A diet, including fiber and a probiotic to stimulate the growth of beneficial bacteria in the colon, should be considered. Antidiarrheals and opiates should be avoided; and the precipitating antibiotic should be discontinued, if possible. Some patients will improve after these actions have been taken. However, patients who have fever, more severe diarrhea, signs of systemic toxicity, or those who do not improve within a few days should be started on an antibiotic regimen to treat the C. difficile infection. Oral metronidazole, 250mg four times daily, or 500mg, three times daily for 10 to 14 days, is the treatment of choice. If the resident does not tolerate this treatment or remains symptomatic, vancomycin 250mg, four times daily for seven to ten days, is recommended. If the resident is unable to take oral medication, intravenous metronidazole is generally preferred. For residents with a creatinine clearance < 10mL/min, reduce the normal metronidazole dose by 50% and administer at the regular intervals. Re-infection can occur in up to 20% of cases, generally caused by spores contaminating the environment. Initial recurrence should be retreated with metronidazole.

It is not uncommon for an elderly resident to carry the bacteria yet remain asymptomatic. These patients do not need to be treated with an antibiotic.

Facilities can prevent the spread of *C. difficile* to other residents or staff by implementing a number of steps, including the following:

- Healthcare providers should always wear gloves and wash hands after assisting an infected resident. Efficacy of alcohol-based gels alone, or with gloves, has not been established since many of these products are not sporicidal.
- Patients with *C. difficile* should be placed in private rooms, especially if they have fecal incontinence.
- Chlorine-containing or other sporicidal disinfectants should be used when cleaning the environment.

Reference: Simor A, Bradley S, Strausbaugh L, Crossley K, Nicolle L, SHEA Long-Term-Care Committee. *Clostridium difficile* in long-term-care facilities for the elderly. *Infect Control Hosp Epidemiol.* 2002;23:696-703.

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New Drugs

Brand Name	Generic Name	Use
Amitiza	lubiprostone	A chloride channel activator for treatment of chronic idiopathic constipation.
Anthelios SX	ecamsule/avobenzone/octocrylene	New OTC sunscreen to protect against UVB and UVA rays. Ecamsule marketed in Europe and Canada as Mexoryl SX.
Dacogen	decitabine	An antineoplastic for treatment of myelodysplastic syndromes.
Elaprase	idursulfase	An enzyme for treatment of Hunter Syndrome (MPS II).
Lucentis	ranibizumab	A vascular endothelial growth factor inhibitor for treatment of "wet" age-related macular degeneration.
Myozyme	alglucosidase alfa	Enzyme for muscle development/function in patients with Pompe disease.
Noxafil	posaconazole	An oral antifungal for prophylaxis of <i>Aspergillus</i> and <i>Candida</i> in severely immunocompromised patients.
Ranexa	ranolazine	An oral antianginal/anti-ischemic agent for treatment of chronic angina.
RotaTeq	rotavirus vaccine	A live, oral vaccine to prevent rotavirus gastroenteritis in infants.
Vivaglobin	immune globulin	Subcutaneous formulation for patients with primary immune deficiency.

Consultant Corner By Doug Englebert, R.Ph.

What are the correct dosage adjustments and monitoring requirements for the use of Allopurinol in the treatment of gout in elderly patients?

Gout is caused by supersaturation of serum urate. Treatment focuses on lowering serum urate levels to <6 mg/dL, below the saturation point. Higher uric acid levels have been associated with flares, although they do not always result in gout. Serum urate levels should be checked at least once during the first six months of continuous use to evaluate if dose increases or reductions are required, and checked periodically thereafter. Patients with impaired renal function should receive reduced doses of allopurinol. For creatinine clearance (ClCr), between 10-20 mL/min, 200mg/day, is acceptable. If ClCr < 10mL/min, do not exceed 100mg/day and if CrCl is <3mL/min the dosing interval should be increased. The proper dosage is best determined when serum uric acid levels are monitored and used as an index.

Nursing Home Pharmacy Guidance Updates By Doug Englebert

The following is a discussion on the nursing home pharmacy guidance related to sedative hypnotics. The guidance from the Centers for Medicare and Medicare Services (CMS) is two-fold and predicated on evidence-based medicine as documented in the guidance and the guidance references.

First, CMS emphasizes that strong differential diagnosis is key; or in guidance terms, an adequate indication is important. The guidance indicates the following related to indications:

Indications: *Most cases of insomnia are associated with underlying conditions (secondary or co-morbid insomnia) such as psychiatric disorders (e.g., depression), cardiopulmonary disorders (e.g., COPD, CHF), urinary frequency, pain, obstructive sleep apnea, and restless leg syndrome. Insomnia may be further described by the duration of symptoms.*

1. *Before initiating medications to treat insomnia, other factors potentially causing insomnia should be evaluated, including, for example:*
 - *environment, such as excessive heat, noise, etc.*
 - *facility routines that may not accommodate residents' individual needs (e.g., time for sleep, awakening, toileting, medication treatments)*
 - *provision of care in a manner that disrupts sleep*
 - *caffeine or medications known to disrupt sleep*
 - *pain and discomfort*
 - *underlying conditions (secondary or comorbid insomnia) such as psychiatric disorders (e.g., depression), cardiopulmonary disorders (e.g., COPD, CHF), urinary frequency, pain, obstructive sleep apnea, and restless leg syndrome.*
2. *It is expected that interventions (such as sleep hygiene approaches, individualizing the sleep and wake times to accommodate the person's wishes and prior customary routine, and maximizing treatment of any underlying conditions) are implemented to address the causative factor(s)*

- 3. These guidelines apply to any medication that is being used to treat insomnia. Initiation of medications to induce or maintain sleep should be preceded or accompanied by other interventions to try to improve sleep. All sleep medications should be used in accordance with approved product labeling; for example, timing and frequency of administration relative to anticipated waking time.*

Second, CMS specifies that once a medication is used, monitoring for effectiveness and periodic tapering is important. The guidance indicates:

Tapering Considerations Specific to Sedatives/Hypnotics. *For as long as a resident remains on a sedative/hypnotic that is used routinely and beyond the manufacturer's recommendations for duration of use, the facility should attempt to taper the medication quarterly unless clinically contraindicated. Clinically contraindicated means:*

- The continued use is in accordance with relevant current standards of practice and the physician has documented the clinical rationale for why any attempted dose reduction would be likely to impair the resident's function or cause psychiatric instability by exacerbating an underlying medical or psychiatric disorder; or*
- The resident's target symptoms returned or worsened after the most recent attempt at tapering the dose within the facility and the physician has documented the clinical rationale for why any additional attempted dose reduction at that time would be likely to impair the resident's function or cause psychiatric instability by exacerbating an underlying medical or psychiatric disorder.*

What does this all mean for the nursing home surveyor? As a surveyor, the goal is to investigate whether a resident's needs are being met and that harm is not occurring, is minimized, and/or prevented. Sedative/Hypnotics like all medications can be very helpful, but may also be harmful. Therefore, sedative hypnotics need to be used and managed with care.

Surveyors need to ascertain if the facility staff had determined that there was adequate indication for use, if it was being used in the right dose for the appropriate time frame, and if the medication was actually working without causing harm. To determine this, surveyors need to assess if the facility staff have considered whether the usage is appropriate as indicated in the guidance. The same is true for the dosage, duration and monitoring. One common problem has been the determination by facility staff to continue use of the medication without attempting to taper the drug. The guidance has changed in this area, so an example is provided below to help illustrate the change.

Ambien 5 mg has been used five times a week routinely for the last four months. The facility staff has evidence of a differential diagnosis, and have considered some of the items as indicated in the guidance. In fact, the facility implemented some non-pharmacological approaches for treating the insomnia. The insomnia has improved, including on the days Ambien is not used. In this case, the facility staff should have attempted tapering at least once in the first three months of use. Tapering is often the only way to determine if the medication is still needed. The surveyor needs to ask facility staff if they considered tapering, especially in cases when the medication is not being used daily. Since the medication has been used at the same dose and schedule for over a quarter, the standard of practice would be to consider tapering.