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The Epidemic of Inappropriate Treatment of Asymptomatic Bacteriuria in Nursing Facilities

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The April release of the Pennsylvania Patient Safety Authority's 2009 Annual Report defined new information about the epidemiology of infections in the nursing home setting.¹ Previous surveys that have examined the prevalence of infections in American nursing facilities consistently found that urinary tract infections (UTI) are the most common type of infection followed by respiratory infections.²

The data reported in the Pennsylvania Patient Safety Authority (PSA) report have shown an inverse pattern with regard to these two common types of infections; respiratory infections were found to be more common than UTIs. Of the more than 16,000 nursing home infections reported to the PSA only 18.2 percent were symptomatic UTIs.

The PSA reporting criteria for UTIs were modified from the McGeer criteria that have been used as a tool in infection surveillance for years. The number of UTIs that met the PSA criteria for symptomatic UTIs in 2009 proved to be far fewer than nursing facility providers anticipated. An informal survey of a group of PMDA members who serve as nursing facility medical directors indicated that of all residents in their nursing facilities who were treated with antibiotics for presumed UTI, only a minority (perhaps in the 20-25 percent range) met PSA criteria. Among the larger percentage of cases that do not meet criteria for symptomatic UTI, the leading explanation for the phenomenon is that many of these cases are actually asymptomatic bacteriuria.

Asymptomatic bacteriuria is a condition defined as isolation of a quantitatively significant count of bacteria from an appropriately collected specimen in the absence of symptoms that localize to the urinary tract, suggesting an active infection.³ The following facts about

asymptomatic bacteriuria have been well established as evidence based in the medical literature:

- Asymptomatic bacteriuria is extremely common in the LTC setting, being found in up to 50 percent of nursing facility residents;
- It is often associated with pyuria, and the presence of pyuria is not considered indicative of infection;
- It is not a marker for future symptomatic infections;
- Treatment of asymptomatic bacteriuria does not prevent future infections and does not improve survival;
- Treatment is associated with increased adverse drug reactions and other negative effects such as C. difficile infection and emergence of resistant organisms;
- Treatment results in recurrence and reinfection with organisms demonstrating increasing antibiotic resistance;
- Direct and indirect costs of care are also driven up by the inappropriate treatment of asymptomatic bacteriuria.

Minimum criteria for starting antibiotics in nursing facility residents have been proposed and include the presence of systemic signs of infection, such as fever or delirium, and the presence of signs or symptoms that localize to the urinary tract, such as dysuria, hematuria, or new urinary incontinence.⁴ **Minor, non-specific, and non-localizing signs or symptoms should not be considered an indication to begin empiric treatment with antibiotics.**

A common pitfall in the care of nursing home residents is to ascribe abnormal appearing urine—such as cloudy or malodorous urine—as a sign of a UTI. Another common mistake is to attribute non-specific and often subtle changes

in residents with dementia, such as confusion, restlessness, or lethargy, in the absence of localizing signs or symptoms to a UTI.

The non-specific, sporadic, fluctuation in behavior seen among nursing home residents with dementia unrelated to any acute illness is a common phenomenon. Confusion over this issue often results in an incomplete nursing assessment being presented to physicians and the resulting clinical pressure to prescribe empiric antibiotics inappropriately.

There is no evidence-based literature that supports the practice of routinely obtaining urine cultures to evaluate residents with dementia who demonstrate changes in behavior or function without more specific signs of infection. One rational approach to assessing possible UTI in residents who are unable to give a history of symptoms involves withholding empiric antibiotic therapy and monitoring the resident over the course of 24 to 48 hours for emerging specific signs of infection while awaiting urine culture results. If no specific or localizing signs develop, or if the resident's non-specific signs resolve or improve, no treatment is indicated.

In light of the growing problem of antibiotic-resistant organisms in the LTC setting, curtailing the inappropriate use of antibiotics should be a primary goal of the facility's infection control program. As Dr. Paul Drinka of the University of Wisconsin has written, "the use of popular antibiotics in nursing homes can be compared to a soldier with a limited number of bullets being overrun by the enemy. Don't waste your time shooting at shadows."⁴ The nursing facility medical director can play a pivotal role as champion in educating the nursing and medical staff in this area and in promoting the appropriate use of antibiotics. □

References

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