Rational Approach to Suspected Urinary Infection in Nursing Homes

Clinical Problem. “Does this patient have a urine infection?” is a common question in nursing homes. Nursing staff may notice foul-smelling urine or be concerned about non-specific symptoms such as decreased appetite, worsening confusion, agitation, or balance problems. You may be informed of a “positive” urine culture and asked to respond.

Key Points from the Scientific Research.
- **Asymptomatic bacteriuria** – a positive urine culture in a patient who has no symptoms – is present in about half of nursing home residents who are clinically well. (1,2)
- **Urinalyses and urine cultures** can be misleading, because white cells and bacteria are normal in the urine of nursing home residents with asymptomatic bacteriuria. Therefore, experts recommend obtaining laboratory tests based on clinical guidelines and only treating a positive culture if the patient is clinically sick. (2,3,4)
- **Increased confusion and functional decline** occur often in nursing home residents and can be caused by many things other than infections. Over-focusing on the possibility of infection in these situations is the most common reason for antibiotic overuse in nursing homes. (5)
- **Prescribing for suspected UTI often does not follow expert recommendations.** Empirical drug selection is often wrong and/or ineffective. Furthermore, antibiotics are often prescribed longer than is recommended. (6)
- **The high prevalence of multi-drug resistant bacteria in nursing homes** is in part due to overtreatment of suspected “UTI” by nursing homes and hospitals. (7)
- **A lot of controversy remains around best practice.** Nursing home research is limited. Current best practice emphasizes more judicious use of antibiotics than in the past; however, existing guidelines are imperfect and so clinicians should individualize their care based on the circumstances of the individual patient. (8)

Recommendations for Practice.
- If a patient has functional decline, mental status change, or change in urine appearance without fever or urinary symptoms or signs: do not culture the urine or treat empirically for UTI. Instead, mobilize, hydrate, and monitor the patient and consider the big seven non-infectious causes of status change: dehydration, medication side effect, viral infection, sleep disturbance, pain, GI distress, or anxiety/depression.
- Only obtain urine cultures in a non-catheterized patient who has (a) new dysuria, or (b) fever and one of the following: new or worsening urgency, frequency, suprapubic pain, gross hematuria, or CVA tenderness. To download a decision algorithm, see https://nursinghomeinfections.unc.edu/files/2016/03/GeneralGuidelinesForUrineTesting.pdf.
- All patients with indwelling catheters become colonized with bacteria, so a positive culture is normal and should not be treated unless the patient has one of the following symptoms: fever, new costovertebral tenderness, rigors, or new onset of delirium. (9)
- If a urinalysis is obtained, use it to rule out infection but not to rule it in (since so many non-sick nursing home patients have white cells and bacteria in the urine). A negative nitrite and negative LE largely rules out UTI. (10)
- If your suspicion for UTI is high and you want to prescribe before the urine culture result comes back, follow expert recommendations and prescribe TMP-SMX, nitrofurantoin, or fosfomycin for 3-7 days. Be sure to check the urine culture result. (11)

References

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