Alberta Health Services Pharmacy Services

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Antimicrobial Stewardship Backgrounder

Understanding Asymptomatic Bacteriuria

BOTTOM LINE: In the majority of cases, asymptomatic bacteriuria should not be treated with antibiotics.

However, 80% of people with asymptomatic bacteriuria get antibiotics.[1] *This is antibiotic misuse.*

Asymptomatic bacteriuria (ASB) is the presence of bacteria in the bladder WITHOUT symptoms/signs of urinary tract infection (UTI). It may be accompanied by pyuria (white blood cells (WBC) in the urine).

It is important to differentiate between ASB and a true UTI as ASB does not require antibiotic treatment, except in a few select circumstances (see below). ASB is very common in elderly patients, in catheterized patients, and in those with an abnormal urinary tract. Treatment of ASB is a major cause of unnecessary antibiotic use.[1] Unnecessary antibiotic treatment exposes patients to excess adverse effects, and increases the potential of antibiotic resistance and *C. difficile* infection.

Do not screen for or treat ASB except:

- in pregnancy or
- prior to any genitourinary procedures likely to cause mucosal bleeding.[2]

To reduce unnecessary antibiotic treatment of ASB:

> *Did you know…?*
>
> When the clinical diagnosis of UTI is uncertain, a urine microscopy negative for pyuria excludes the diagnosis of UTI.

1. UTI must be diagnosed clinically by patient symptoms and signs

- Non-catheterized patients with UTI (including the elderly) typically present with **specific or localizing** symptoms/signs to the urinary tract, e.g. dysuria, increased frequency, urgency or incontinence, suprapubic or flank pain, +/- fever or rigors.
- Catheterized patients with UTI usually present with **specific** symptoms (new suprapubic or flank pain) also. When catheterized patients present with non-specific symptoms (e.g. fever or rigors alone, new onset delirium), the diagnosis of UTI MUST be a **DIAGNOSIS of EXCLUSION,** i.e. made AFTER all other infectious and non-infectious causes for the presentation (e.g. dehydration, new medication, trauma, hypoxia, etc.) have been ruled out.
- A urinalysis showing bacteria or WBC, or urine culture showing bacteria, is NOT diagnostic of UTI in patients where ASB is common.
- When the clinical diagnosis of UTI is certain, there is NO additional benefit of doing a urinalysis to look for bacteria and WBC.
- If the clinical diagnosis is uncertain, a urine microscopy should be requested. If negative for pyuria, this excludes UTI.
- A negative dipstick is not reliable enough to exclude UTI in all cases as it is not as sensitive as urine microscopy.

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2. Send urine for culture only AFTER a clinical diagnosis of UTI is made

- The role of urine culture is to guide the selection of antibiotic therapy.
- A negative result will exclude UTI in most cases.
- Urine for culture should ideally be sent AFTER the clinical diagnosis of UTI is made. If a urine culture is sent as part of the initial panel of investigations (not recommended), a positive culture should not result in antibiotic treatment if another cause for the presentation is found or if symptoms resolve. In the elderly, symptoms often resolve with adequate hydration.

3. Do NOT order "ROUTINE" or screening urinalysis or urine culture in patients without symptoms/ signs of UTI

- If a urinalysis or urine culture is sent in a patient who has NO symptoms/signs of UTI (not recommended), and the result is positive, the patient should NOT be given antibiotics as the risk of antibiotic treatment exceeds any possible benefit.
- A change in the appearance or smell of urine, in the absence of other symptoms/signs of UTI, does NOT indicate infection. These changes are usually due to dehydration, changes in diet or medication, or catheterization. They are NOT an indication for urine testing or antibiotic treatment.

When urine culture is indicated, a GOOD QUALITY specimen, collected before antibiotics are given, is essential for an ACCURATE result:

1. For midstream urine (MSU) collection, clear VERBAL and WRITTEN instructions MUST be provided to the patient.
2. For patients unable to provide a MSU, urine can be collected with an in/out catheter for females or a condom catheter for males.
3. For collection from indwelling catheters, if the device has been in place for more than 14 days, it MUST be removed first, and an MSU collected. Alternatively, if re-insertion of the catheter is justifiable, the specimen should be collected aseptically from the catheter side port.
4. Transfer of the specimen from the collection container into the preservative tube should be done within 20 minutes, to prevent bacterial overgrowth.
5. To ensure proper testing and interpretation of laboratory results, list the patient's symptoms and any recent antibiotics on the laboratory requisition.
6. Transport to the laboratory as soon as possible is important for an early and accurate result.

References

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