

ASYMPTOMATIC BACTERIURIA ADULT

DEFINITION

Asymptomatic bacteriuria is the presence of bacteria, in an appropriately collected urine specimen, without the client experiencing symptoms or signs of a urinary tract infection (UTI).

- Asymptomatic bacteriuria in women is demonstrated by more than 100,000 (10^5) CFU/mL of a single bacterial species cultured in two successive midstream urine specimens.
- In men, asymptomatic bacteriuria is demonstrated by more than 100,000 (10^5) CFU/mL of a single bacterial species in a single urine specimen.
- In catheterized clients, asymptomatic bacteriuria is demonstrated by more than 1000 (10^3) CFU/mL of a single bacterial species in a single urine specimen.
- In the young and healthy, this condition is transient, often only lasting a couple of weeks.

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

- Frail elderly with delirium

CAUSES

- Bacteria: *Klebsiella pneumoniae*, coagulase-negative staphylococci, group B streptococci, Enterococcus, *Gardnerella vaginalis*, gram-negative bacilli, *Pseudomonas aeruginosa*, *Proteus mirabilis*, *Morganella morganii*, *Providencia stuartii*
- Contamination of specimen

PREDISPOSING AND RISK FACTORS

- Diabetes (in particular women, those using insulin and those who have had chronic diabetes over time)
- Older age
- Sexual activity
- Female anatomy (more common in women because the urethra is short and located close to the vagina)
- Males practising anal intercourse
- Uncircumcised male
- Bladder outlet obstruction (e.g., prostatic hyperplasia)
- Urinary tract instrumentation
- Indwelling catheters

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HISTORY

- No urinary complaints
- Usually discovered on routine examination of urine
- The prevalence of asymptomatic bacteriuria among healthy women increases with advancing age.
- Common in women 20-50 years of age and in up to 30% of pregnant women
- Asymptomatic bacteriuria is rare among healthy young men.
- Chronic low-grade prostatitis is often present in men > 50 years of age.
- Common in elderly clients and those with an indwelling urinary catheter

PHYSICAL FINDINGS

- Normal

DIFFERENTIAL DIAGNOSIS

- Cervicitis
- Chlamydial genitourinary infections
- Cystitis, non-bacterial
- Ectopic pregnancy
- Interstitial cystitis
- Nephrolithiasis
- Trichomoniasis
- Urethritis
- Atrophic vaginitis
- Enlarged or inflamed prostate

COMPLICATIONS

General:

- Cystitis
- Pyelonephritis

Pregnancy:

- Preterm birth
- Low birth weight infants
- Perinatal mortality

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INVESTIGATIONS AND DIAGNOSTIC TESTS

- Pregnant clients (12-16 weeks' gestation) and clients preoperatively for invasive urologic procedures (e.g., transurethral resection of the prostate) are the only ones who should be screened. All other clients should not have their urine screened for asymptomatic bacteriuria.
- Urine: clear
- Dipstick test: normal
- Microscopic examination: bacteria evident
- Culture: positive in 24-48 hours
- Ensure that the specimen is properly collected and is a midstream urine sample.

MAKING THE DIAGNOSIS

Diagnosis of asymptomatic bacteriuria in adults:

- Lack of signs and symptoms of UTI
- Caution regarding the over-screening and over-treating of asymptomatic bacteriuria
- Diagnosis is based on urine specimen collected in a manner that minimizes contamination
- For asymptomatic women: two consecutive voided urine specimens with isolation of same bacterial strain in quantitative counts $\geq 100,000$ (10^5) CFU/mL
- For asymptomatic men: single voided urine specimen with one bacterial species isolated in quantitative count $\geq 100,000$ (10^5) CFU/mL
- For asymptomatic client with indwelling catheter, women or men: single catheterized urine specimen with one bacterial species isolated in quantitative count ≥ 1000 (10^3) CFU/mL

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Recognize the significance of asymptomatic bacteriuria in the various subgroups (prenatal, immunocompromised).
- Eradicate bacteria from genitourinary (GU) tract in pregnant women; it may progress to a UTI, pyelonephritis, miscarriage, preeclampsia, or sepsis.
- Eradicate bacteria from GU tract in clients undergoing invasive urologic

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- procedures where mucosal bleeding is expected.
- Avoid treating all other clients to decrease the potential for antibiotic resistance.

Appropriate Consultation

- Treatment failure in pregnancy
- Immunocompromised client

Non-Pharmacological Interventions

- Ensure adequate hydration, particularly in elderly clients

Pharmacological Interventions

Treat all pregnant women to ensure resolution of the bacteriuria:

- Amoxicillin 500 mg orally q8h for 3-7 days
- Sulfamethoxazole/Trimethoprim (SMX/TMP) 400/80 mg 2 tabs orally q12h or 800/160 mg (DS) 1 tab orally q12h for 3-5 days. Trimethoprim should be avoided in the 1st trimester. Sulfamethoxazole should be avoided in the last 6 weeks.
- Fosfomycin 3 grams mixed in ½ cup water orally, single dose

For clients with allergy to penicillin:

- Cephalexin 250-500 mg orally q6h for 7 days (do not give if anaphylactic reaction to penicillin)
- Nitrofurantoin (MacroBID) 100 mg orally q12h for 3-7 days
Nitrofurantoin (MacroBID) should be avoided at term (after 35 weeks) and during labour in pregnant women.

Preoperatively to clients undergoing invasive urologic procedures where mucosal bleeding is expected:

- As per specific preoperative recommendations

Other Groups (healthy non-pregnant women, diabetics, elderly, and clients with a urethral catheter):

- Antibiotic treatment is not needed
- If there have been no GU problems in the past and there are currently no symptoms, the problem is probably only contamination. Provide appropriate education.

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Client and Caregiver Education

- Counsel client/caregiver about the appropriate use of medications (dose, frequency, compliance, etc.).
- Recommend adequate fluid intake to flush bacteria from the bladder and prevent stasis of urine (6-8 glasses of fluid per day).
- Instruct female clients about proper hygiene (wiping from front to back).
- Teach client the signs and symptoms of acute infection and advise client to return to the clinic if these occur.
- Shower rather than bathing.

Monitoring and Follow-Up

Pregnant Women:

- Follow-up with midstream urine for culture and sensitivity 1-week post-treatment. Repeat culture and sensitivity monthly. Re-treat if necessary based on the susceptibility report with either a longer duration of the same antibiotic or a different one. Discuss persistent positive cultures with a physician/RN(NP).

Referral

- Refer current asymptomatic bacteriuria in pregnancy to a physician/RN(NP).

DOCUMENTATION

- As per employer policy

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