

Guideline for the Management of Bacteriuria in Pregnancy

THIS GUIDELINE DEALS SPECIFICALLY WITH ASYMPTOMATIC BACTERIURIA

DEFINITIONS

Asymptomatic bacteriuria: Presence of bacteriuria in urine revealed by quantitative culture or microscopy in a sample taken from a patient without any typical symptoms of lower or upper urinary tract infection ^[1].

In contrast with ***symptomatic bacteriuria***, the presence of asymptomatic bacteriuria should be confirmed by two consecutive urine samples ^[1].

Empirical treatment: Treatment based on clinical symptoms or signs unconfirmed by urine culture.

EPIDEMIOLOGY

Symptomatic bacteriuria occurs in up to 20% of pregnancies and has been associated with pre-labour, premature rupture of membranes (PPROM) and pre-term labour. If untreated it carries well-documented risks of morbidity, and rarely, mortality to the pregnant woman ^[1].

Asymptomatic bacteriuria occurs in 2-10% of pregnancies. If untreated 30% of women may develop acute pyelonephritis. Antibiotic treatment is effective in reducing the risk of pyelonephritis in pregnancy, but there is limited evidence it reduces the risk of sequelae ^[2].

UTIs are the most common bacterial infection during pregnancy. Treatment aims to prevent complications that could lead to significant maternal and fetal sequelae.

CAUSATIVE ORGANISMS

Escherichia coli accounts for about 90% of cases.

Other pathogens include: *Klebsiella pneumoniae* (5%), *Proteus mirabilis* (5%), *Enterobacter* species (3%), *Staphylococcus saprophyticus* (2%), Group B beta-hemolytic *Streptococcus* (GBS; 1%), *Proteus* species (2%).

If GBS is identified ensure antenatal services are informed as intrapartum antibiotic prophylaxis will be required in addition to a treatment course of antibiotics for 7 days.

DIAGNOSIS

- All women in the first trimester should have a mid-stream specimen of urine sent for urine culture at first antenatal visit ^[3].
- Dipstick testing (Leucocytes or Nitrites) is **NOT** sufficiently sensitive to be used as a screening test. Urine culture should be the investigation of choice.
- The laboratory is currently performing Automated WBC and RBC counts on urine samples but will continue to perform routine culture on Maternity samples only. Further advice is then usually given when indicated.
- If a repeat sample is requested by the laboratory then indicate on request form:

‘REPEAT SAMPLE (LAB. REQUEST)’
- Please specify whether the sample is **MSU** or **CSU**
- Confirm the presence of bacteriuria in urine with a second urine culture if positive on first sample.
- **Offer an immediate antibiotic** prescription to pregnant women with asymptomatic bacteriuria (confirmed with a repeat sample).
 - Once treatment is completed a repeat MSU should be sent for confirmation
- Once Asymptomatic bacteriuria is diagnosed then women should have repeat urine culture at each antenatal visit until delivery ^[1]. This can be done using the Badger Management Plan form.
- In the event of persistent or recurrent bacteriuria a Badger alert is suggested.

TREATMENT OF ASYMPTOMATIC BACTERIURIA

- Treat with a **7-day** course of antibiotic in line with sensitivity results. Alternative antibiotics should be used in women who are allergic to Penicillin.
- Repeat MSSU 7 days after completion of treatment.
- Repeat MSSU at each antenatal clinic visit

Options when sensitivities are known are (in order of preference) ^[2]:

- **Amoxicillin** 500 mg TID for 7 days
- **Nitrofurantoin** 100 mg (modified release) BD for 7 days
 - *Safe in 1st and 2nd trimester and postnatal women*
 - *Avoid if eGFR <45 ml/minute, or in G6PD deficiency*
- **Trimethoprim** 200 mg BD for 7 days (off-label use)
 - *Give folic acid 5 mg daily if it is the first trimester of pregnancy. Do not give trimethoprim if the woman is folate deficient, taking a folate antagonist, or has been treated with trimethoprim in the past year.*
- **Cefalexin** 500 mg BD / 250 mg QID for 7 days
 - *May be used but is less preferred*

TREATMENT OF SYMPTOMATIC UTI

The treatment of women with symptomatic UTI is outside the scope of this guideline. There is no clear evidence that any particular antibiotic or dosage regimen is superior and as such the culture result is used as a guide to treatment. Consider possible allergies.

Start treatment with Amoxicillin 500 mg TID for 7 days and send urine for culture. Consider cephalexin in non-severe penicillin allergy. Trimethoprim or Nitrofurantoin in severe penicillin allergy. This is considered to be the safest, cheapest and most effective antibiotic for pregnant women. Treatment may need to be altered on the basis of clinical response and/or sensitivity result.

Given the risks of symptomatic bacteriuria in pregnancy, a urine culture should be performed seven days after completion of antibiotic treatment as a test of cure.

REFERENCES:

1. SIGN 88 Management of suspected bacterial urinary tract infection in adults July 2012
2. Clinical Knowledge Summaries (NICE): Asymptomatic bacteriuria in Pregnancy <https://cks.nice.org.uk/urinary-tract-infection-lower-women#!scenario:4>
3. Antenatal care for uncomplicated pregnancies. Clinical guideline [CG62]. Published March 2008. Last updated February 2019. <https://www.nice.org.uk/guidance/cg62>

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