10-minute consultation

Recurrent urinary tract infection in women

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This is part of a series of occasional articles on common problems in primary care

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The *BMJ* welcomes contributions from general practitioners to the series
BMJ 2003;327:1204

A 23 year old female student complains of urinary frequency and pain on micturition. She has had similar episodes on four other occasions in the last six months. She wants to know what can be done now and how to prevent further infections.

What issues you should cover

Is it really a urinary tract infection?—Differential diagnoses include common genital infections (such as sexually transmitted infections and *Candida* vulvovaginitis), non-infective cystitis (caused by non-steroidal anti-inflammatory drugs and other drugs), and urethral syndrome (a complex of symptoms that indicate a urinary tract infection but without an underlying infection).

Type of urinary tract infection—Symptoms that indicate a lower urinary tract infection are discomfort on urination, increased frequency of urination, urgency, and a change in the smell of the urine. Symptoms that indicate an upper urinary tract infection are a high temperature, pain in the loin, nausea, vomiting, and rigors.

History—When was the last infection? Recurrent episodes of urinary tract infection may be a relapse of illness (defined as recurrence of infection by the same species within two weeks) or reinfection.

Predisposing factors—Renal problems (such as hydronephrosis), bladder problems (such as atonic bladder), and pregnancy all increase the risk of urinary tract infection.

What you should do

- Do an appropriate physical examination if her clinical history suggests a different diagnosis (such as a sexually transmitted infection), an upper urinary tract infection, or an underlying physical cause for the infection.
- Sexually transmitted infections will need treatment, and contacts will need to be traced.
- We need better evidence about the validity of dipstick analysis, but a reasonable approach is to treat on the basis of dipstick findings (positive results for nitrite or leucocytes) and reserve urine culture, if symptoms are not settling. A urine culture is probably indicated if she is in a high risk group (pregnant women or women with an anatomically or functionally abnormal renal tract).
- Trimethoprim is the first choice of treatment, except in women from communities with a high rate of resistance, when you should follow the local guidance. A three day course of antibiotic treatment should suffice for most women with lower urinary tract infection. If despite treatment her symptoms persist or worsen, do a urine culture and prescribe antibiotics according to the results of the culture and sensitivity tests. Upper urinary tract infection in otherwise healthy women can be treated with oral antibiotics for 7-10 days, with an early review. Women who are systemically unwell should be admitted to hospital.
- Underlying anatomical abnormalities in women with recurrent lower urinary tract infection are uncommon; further investigations are not routinely indicated.
- Explain that risk factors for recurrent urinary tract infection (arbitrarily defined as three or more infections a year) are frequent sexual intercourse, exposure to spermicide (with or without use of a diaphragm), and a new sexual partner.
- Consider further options to manage recurrent urinary tract infections: she could take a short course of antibiotic treatment at the onset of symptoms that suggest urinary tract infection; she could take prophylactic antibiotic treatment (single 200 mg dose of trimethoprim) after sexual intercourse if previous infections have been related to sexual intercourse; or she could take a longer course of daily or thrice weekly prophylactic treatment (see table).
- Explain that prophylactic treatment does not modify the natural history of recurrent urinary tract infections. When such treatment ceases, even after long periods of treatment, more than 50% of women will have another infection within three months.
- There is some evidence that cranberry juice treats urinary tract infection and prevents its recurrence.

Antimicrobial regimens for prevention and treatment of recurrent urinary tract infections

Antimicrobial agent	Dosage for treatment	Daily dosage for prevention
Cefalexin	500 mg three times daily for three days	125 mg
Ciprofloxacin	100 mg twice daily for three days	125 mg
Co-amoxiclav	375 mg thrice daily for three days	No data available
Co-trimoxazole	960 mg twice daily for three days	240 mg (or three times a week)
Nitrofurantoin	50 mg four times daily for seven days	50-100 mg
Nitrofurantoin macrocrystals and monohydrate	100 mg twice daily for seven days	100 mg
Norfloxacin	200 mg twice daily for three days	200 mg
Trimethoprim	200 mg twice daily for three days	100 mg (or three times a week)

Useful reading

Baerheim A. Empirical treatment of uncomplicated cystitis. *BMJ* 2001;323:1197-8

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