Public Health Agency of Canada | Agence de la santé publique du Canada

Canada

URETHRITIS

This chapter from the Canadian Guidelines on Sexually Transmitted Infections 2006 Edition has undergone revisions and has been updated as of October 2007. The chart below summarizes the most significant changes made to the chapter and cross-references the corresponding page numbers in the current hard copy version of the guidelines.

Section	Page	Current Wording/Problem	Update/Clarification
Reporting and Partner Notification	**100**	Partner notification statement bullet # 2 requires clarification All partners who have had sexual contact with the index case within 60 days prior to symptom onset or date of diagnosis where asymptomatic should be identified receive a clinical evaluation, including appropriate screening tests and appropriate prophylactic treatment regardless of findings on clinical examination.	Replaced with: All sexual partners of the index case from 60 days prior to symptom onset or date of diagnosis (if asymptomatic) should be tested and empirically treated regardless of clinical findings and without waiting for test results. If there was no partner during this period, then the last partner should be tested and treated.
Children with Urethritis	**101**	New statement required on the management of contacts named in suspect child sexual abuse cases	Add new bullet in blue box under children All persons named as suspects in child sexual abuse cases should be located and clinically evaluated; prophylactic treatment may or may not be offered and the decision to treat or not should be based on history, clinical findings and test results. (See Sexual abuse in Peripubertal and Prepubertal Children).
Figure 1	**103**	Figure 2 should read Figure 1	Changed to Figure 1
Figure 1	**103**	Figure 1 has been revised	Please replace the 2006 version with this version

URETHRITIS

Etiology[1]

- Important causes to consider:
  - *Neisseria gonorrhoeae*
  - *Chlamydia trachomatis*
- Other possible causes:
  - *Trichomonas vaginalis*[2]
  - Herpes simplex virus[3]
  - *Mycoplasma genitalium*[4,5]
  - *Ureaplasma urealyticum*[1]
- Other, less common considerations include the following:
  - Adenovirus[6,7]
  - *Candida albicans*[8]

Definition

- Clinical syndrome:
  - Inflammation of the urethra, with or without urethral discharge.
  - Discharge, if present, can be mucoid, mucopurulent or purulent.
  - May also be manifested by dysuria, urethral pruritis or meatal erythema.
- Microscopic definition: presence of ≥5 polymorphonuclear leukocytes (PMNs) per oil immersion field (x1000) in five non-adjacent, randomly selected fields on a smear.[9]
- Non-gonococcal urethritis (NGU) refers to urethritis not caused by *N. gonorrhoeae.*

Epidemiology

- Limited data are available on the incidence or prevalence of urethritis.

Natural history

- Symptoms of gonococcal urethritis develop 2 to 6 days after acquisition.
- Symptoms of NGU develop 1 to 5 weeks after acquisition (usually at 2–3 weeks).
- Up to 25% of infections, especially NGU, can be asymptomatic.[10]

Prevention

- Use clinical evaluation as an opportunity to review safer sexual practices, explore barriers to adopting these practices and problem-solve to overcome such barriers in the future.
- Advise on consistent condom use.
- Advise patient to abstain from unprotected intercourse until 7 days after initiating treatment.

Manifestations

- Urethral discharge.
- Dysuria.
- Urethral itching or meatal erythema.
- Often asymptomatic.
- Although urinary frequency, hematuria and urgency can, on rare occasions, occur with urethritis, the presence of any of these symptoms requires more extensive evaluation.

Diagnosis

Specimen collection

- Discharge: obtain sample by having patient milk penis three to four times from base to glans.[11]
- Endourethral swab: pass swab 2 cm into the urethra, rotate and remove for Gram stain and testing.
- Urine sample: obtain first 10–20 ml of first-catch urine, any time of day, but preferably after having not voided for at least 2 hours.[12]

Laboratory diagnosis

- Testing for both gonorrhea and chlamydia is recommended (See *Chlamydial Infections* and *Gonococcal Infections* chapters for more information on testing).
- Obtain the following:
  - Gram stain of discharge or endourethral specimen for PMNs and Gram-negative diplococci (if available).
  - If nucleic acid amplification tests (NAAT) are available:
    - NAAT of urine for *C. trachomatis*[13,14] and culture of endourethral swab for *N. gonorrhoeae*.
  - If NAAT is unavailable:
    - Direct fluorescent antibody (DFA), enzyme immunoassay (EIA), or culture for *C. trachomatis*[14] and culture of endourethral swab for *N. gonorrhoeae*.
- Although NAAT testing for gonorrhea may be considered in cases where transport and storage conditions are not conducive to maintaining the viability of *N. gonorrhoeae* or obtaining a swab is not possible, culture is the preferred method, because it allows for antimicrobial susceptibility testing.

Caution

- Presence of the following symptoms suggest an alternative diagnosis:
  - Hematuria.
  - Fever, chills.
  - Frequency, nocturia, urgency.
  - Perineal pain, scrotal masses.
  - Difficulties initiating and maintaining stream.
  - Lymphadenopathy.

Management and Treatment (see Figure 2)

- Gonococcal urethritis: Cefixime 400 mg PO in a single dose PLUS EITHER doxycycline 100 mg PO bid for 7 days[15] *[A-I]* OR azithromycin 1 g PO in a single dose if poor compliance is expected *[A-I]*.
- Non-gonococcal urethritis: doxycycline 100 mg PO bid for 7 days[16–18] *[A-I]* OR azithromycin 1 g PO in a single dose if poor compliance is expected *[A-I]*.
- Alternative regimens are available for gonococcal infections/chlamydial infections (see *Gonococcal Infections* and *Chlamydial Infections* chapters).
- Single-dose regimens offer improved compliance and are especially useful in certain populations such as street youth, but they are also the most expensive.
- Resolution of symptoms can take up to 7 days after therapy has been completed.
- Patients should abstain from unprotected intercourse until 7 days after initiating treatment.
- Asymptomatic infections in men are common and should be treated.

Consideration for Other STIs

- Obtain serology for syphilis.
- Review immunization status for hepatitis B; offer vaccination if the patient is not protected and testing if the patient is at high risk.
- Offer HIV testing and counselling.
- In men who have sex with men, consider hepatitis A vaccine.

Reporting and Partner Notification

- Urethritis caused by certain agents (e.g., *C. trachomatis, N. gonorrhoeae*) is a notifiable communicable disease for provinces and territories. All conditions and diseases that are notifiable should be reported to public health departments in accordance with local regulations and laws.
- All sexual partners of the index case from 60 days prior to symptom onset or date of diagnosis (if asymptomatic) should be tested and empirically treated regardless of clinical findings and without waiting for test results. If there was no partner during this period, then the last partner should be tested and treated.
- Where possible, encourage the use of public health authorities or treating physician to conduct contact tracing on partners and increase the number of partners contacted.[19]

Follow-up

- If treatment is taken and symptoms resolve, test of cure is not routinely recommended.
- If symptoms persist or recur after completed therapy (1 week after initiation of therapy), the patient should be re-evaluated.
- Symptoms alone are not sufficient for retreatment in the absence of laboratory findings or clinical signs.
- If a test of cure is indicated and NAAT is being used for follow-up testing, testing should not be conducted until 3 weeks after treatment to avoid a false positive.

Special Considerations

Recurrent or persistent urethritis

- Often a difficult problem.
- Reconfirming the presence of urethritis using smear and Gram stain is essential.
- Critical to differentiate urethritis from functional complaints.
- Important to inform patient at the start of care for recurrent urethritis that it can be a difficult clinical problem to address, but that symptoms often resolve.
- If there is a microbiologically or clinically documented failure with persistent urethritis, consider the following:
  - Re-exposure to untreated partner.
  - Infection acquired from new partner.
  - Medication not taken correctly/not completed.
  - Infection with other pathogens.
  - Presence of resistant organisms.[20]
  - Other causes (e.g., urinary tract infection, prostatitis, phimosis, chemical irritation, urethral strictures, tumours).
- Consider:
  - Repeat specimens (urine and endourethral) for Gram stain, culture and NAAT for *N. gonorrhoeae* and *C. trachomatis.*
  - Endourethral swabs or urine for *T vaginalis.*[2,21]
  - Endourethral swab or urine for herpes simplex culture, although usually associated with lesions.[3,22]
  - Endourethral specimen or first-void urine for culture for *U urealyticum* and *M genitalium*[5] (usually at specialized laboratory).
  - Urology or infectious diseases consultation if unresolved.
  - Determine whether other underlying etiologies, such as anxiety, contribute to symptoms.

Children with urethritis

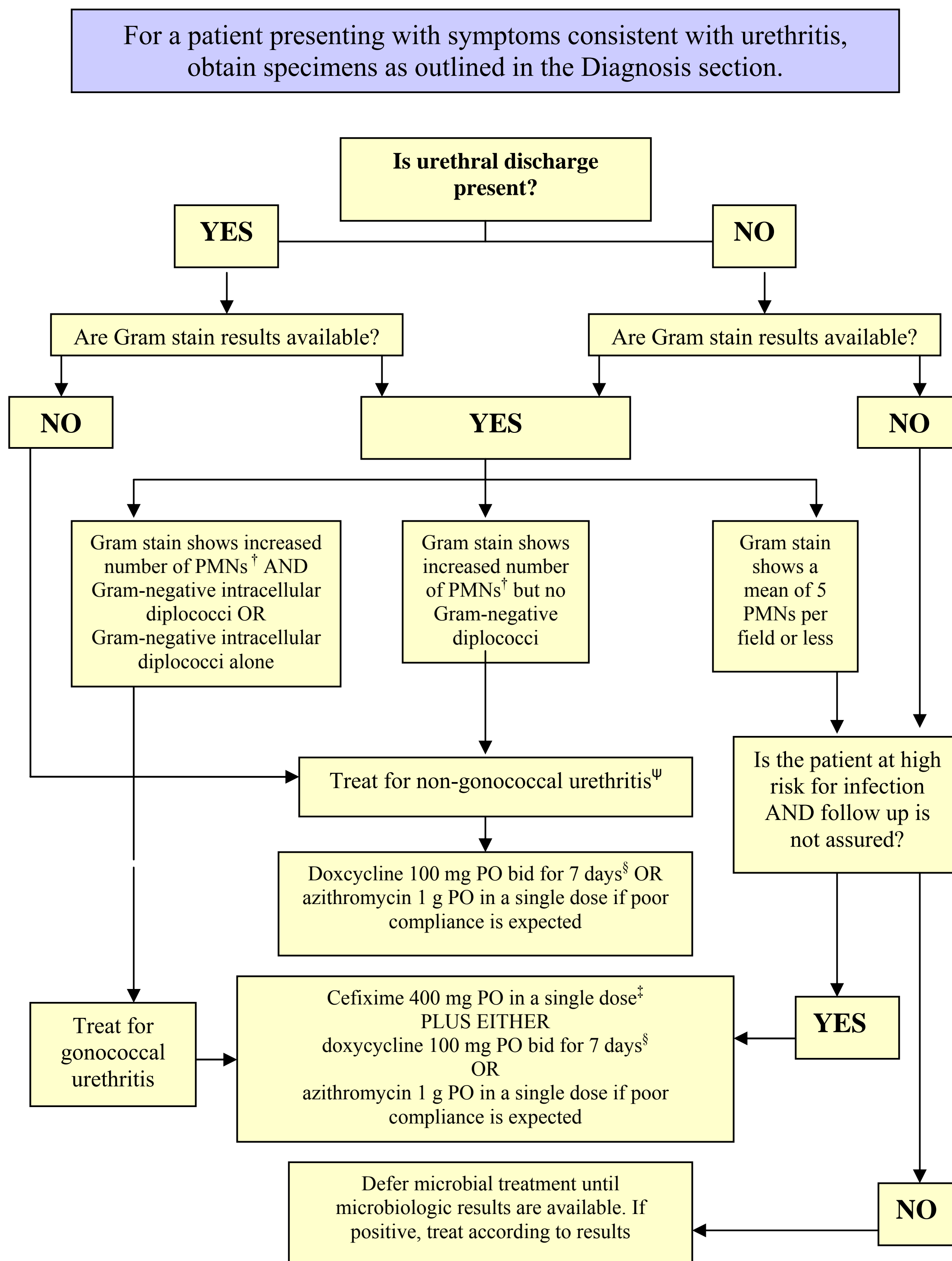
- Sexual abuse must be considered if there are symptoms of unexplained pyuria in prepubertal boys or young males who are not sexually active (see *Sexual Abuse in Peripubertal and Prepubertal Children* chapter).
- Practitioners need to follow provincial guidelines for reporting any suspected cases of child sexual abuse to appropriate authorities.
- All persons named as suspects in child sexual abuse cases should be located and clinically evaluated; prophylactic treatment may or may not be offered and the decision to treat or not should be based on history, clinical findings and test results (See *Sexual abuse in Peripubertal and Prepubertal Children* chapter).
- Young men and women with urethritis may be erroneously diagnosed with urinary tract infections.
- In addition to symptoms present in adults, children with urethritis can also demonstrate the following:
  - Abdominal pain.
  - Unwillingness to void.
  - Enuresis.

- For treatment regimens in children, see *Gonococcal Infections* and *Chlamydial Infections* chapters.
- Repeat testing should be offered to all children.

Urethritis in women

- Urethritis caused by *N. gonorrhoeae* and *C. trachomatis* in women can occur without cervicitis.
- Dysuria and urinary frequency may be symptoms of urethritis and thus may mimic cystitis.
- Specimens for *C. trachomatis* and *N. gonorrhoeae* in women should be obtained from both urine and endocervical specimens.

Figure 2. Urethritis Treatment Flow Chart*



PMN=polymorphonuclear leukocytes
*Treatment flow chart only. Specimens be collected and sent for laboratory testing as outlined in the Diagnosis section.
†A mean of ≥5 PMNs per field (x 1000) in five non-adjacent fields.
Ψ Treat for urethritis due to chlamydia, consider treating for gonorrhea IF local prevalence is high or if sexual contact occurred in a region with high prevalence OR if follow up is not assured OR if partner is infected.
‡For alternative regimens, see *Gonococcal Infections* chapter.
§For alternative regimens, see *Chlamydial Infections* chapter.

References

1. McKee KT Jr, Jenkins PR, Garner R, et al. Features of urethritis in a cohort of male soldiers. *Clin Infect Dis*. 2000;30:736–741.
2. Wendel KA, Erbelding EJ, Gaydos CA, Rompalo AM. Use of urine polymerase chain reaction to define the prevalence and clinical presentation of *Trichomonas vaginalis* in men attending an STD clinic. *Sex Transm Infect*. 2003;79:151–153.
3. Madeb R, Nativ O, Benilevi D, Feldman PA, Halachmi S, Srugo I. Need for diagnostic screening of herpes simplex virus in patients with nongonococcal urethritis. *Clin Infect Dis*. 2000;30:982–983.
4. Mena L, Wang X, Mroczkowski TF, Martin DH. *Mycoplasma genitalium* infections in asymptomatic men and men with urethritis attending a sexually transmitted diseases clinic in New Orleans. *Clin Infect Dis*. 2002;35:1167–1173.
5. Dupin N, Bijaoui G, Schwarzinger M, et al. Detection and quantification of *Mycoplasma genitalium* in male patients with urethritis. *Clin Infect Dis*. 2003;37:602–605.
6. Bradshaw CS, Denham IM, Fairley CK. Characteristics of adenovirus associated urethritis. *Sex Transm Infect*. 2002;78:445–447.
7. Azariah S, Reid M. Adenovirus and non-gonococcal urethritis. *Int J STD AIDS*. 2000;11:548–550.
8. Varela JA, Otero L, Garcia MJ, et al. Trends in the prevalence of pathogens causing urethritis in Asturias, Spain, 1989–2000. *Sex Transm Dis*. 2003;30:280–283.
9. Swartz SL, Kraus SJ, Herrmann KL, Stargel MD, Brown WJ, Allen SD. Diagnosis and etiology of nongonococcal urethritis. *J Infect Dis*. 1978;138:445–454.
10. Grosskurth H, Mayaud P, Mosha F, et al. Asymptomatic gonorrhea and chlamydial infection in rural Tanzanian men. *BMJ*. 1996;312;277–280.
11. Martin DH, Bowie WR. Management of STD syndromes in men. In: Holmes KK, Sparling P, Mardh PA, et al, eds. *Sexually Transmitted Diseases*. 3rd ed. New York, NY: McGraw Hill; 1999: 833-845.
12. Simmons PD. Evaluation of the early morning smear investigation. *Br J Vener Dis*. 1978;54:128–129.
13. Burstein GR, Zenilman JM. Nongonococcal urethritis — a new paradigm. *Clin Infect Dis*. 1999;28(suppl 1):S66–73.
14. Centers for Disease Control and Prevention (CDC). Screening tests to detect *Chlamydia trachomatis* and *Neisseria gonorrhoeae* infections — 2002. *MMWR Recomm Rep*. 2002;51(RR-15): 1-27.
15. Handsfield HH, McCormack WM, Hook EW 3rd, et al. A comparison of single-dose cefixime with ceftriaxone as treatment for uncomplicated gonorrhea. The Gonorrhea Treatment Study Group. *N Engl J Med.* 1991;325: 1337–1341.
16. Stamm WE, Hicks CB, Martin DH, et al. Azithromycin for empirical treatment of the nongonococcal urethritis syndrome in men. A randomized double-blind study. *JAMA*. 1995;274:545–549.
17. Steingrimsson O, Olafsson JH, Thorarinsson H, Ryan RW, Johnson RB, Tilton RC. Single dose azithromycin treatment of gonorrhea and infections caused by *C. trachomatis* and *U. urealyticum* in men. *Sex Transm Dis*. 1994;21:43–46.
18. Lau CY, Qureshi AK. Azithromycin versus doxycycline for genital chlamydial infections. A meta-analysis of randomized clinical trials. *Sex Transm Dis*. 2002;29:497–502.

19. Macke BA, Maher JE. Partner notification in the United States: an evidence-based review. *Am J Prev Med*. 1999;17:230–242.
20. Public Health Agency of Canada. *Interim Statement on the Treatment of Gonorrhea In Canada.* Ottawa, ON: Public Health Agency of Canada; November 2004. Available at: www.phac-aspc.gc.ca/std-mts/pdf/is-gonorrhea-2004_e.pdf. Accessed March 1, 2005.
21. Borchardt KA, al-Haraci S, Maida N. Prevalence of *Trichomonas vaginalis* in a male sexually transmitted disease clinic population by interview, wet mount microscopy and the InPouch TV test. *Genitourin Med*. 1995;71:405–406.
22. Lautenschlager S. Eichmann A. Urethritis: an underestimated clinical variant of genital herpes in men? *J Am Acad Dermatol*. 2002;46:307–308.