Dysuria UTI- Dec 2020, Uptodate and AFP Nov 2015

Definitions
Simple UTI/Cystitis- infection of bladder and lower urinary tract
Complicated UTI- flank pain or CVA tenderness, or fever (100/37.8), or other systemic signs, (pelvic or perineal pain in men) suggests it has progressed beyond the bladder.

Special Populations
Men
Indwelling Foley
Pregnant women
Renal transplant patients
Recurrent simple cystitis
UTI in infants/young children

Higher Risk
(not automatically complicated if no concerning sxs but watch more closely)
Nephrolithiasis. Polycystic Kidney Dz
Strictures, Stents, Urinary Diversions
Immunocompromised- neutropenia, HIV, poorly controlled DM

History
Pain at start of urination? Urethra
Pain at end of urination? Bladder
Flank pain? Fever/chills? Complic. UTI
Hematuria? Cystitis more likely
Recent sexual activity (60d)?
New partner?
Monogamous?
Vaginal sxs- discharge, irritation, pain?
Consider STI
External genitalia lesions noted?
Type of contraception used?
Spermicides, diaphragms and spermicide coated condoms increase UTI risk.
Chronic nocturia, dysuria, incontinence, and general sense of lack of well being
Nonspecific for UTI
Acute dysuria (<1week)- specific for UTI
Cloudy or smelly urine in SNF pts-
No benefit to treat without classic cystitis sxs or fever

Diagnostic Process
1. Women w/ dysuria + frequency + no vaginal discharge/irritation- treat/no test
2. Women w/ vag sxs or sterile pyuria- pelvic exam, KOH, wet mount, GC NAAT, UA, HCG
3. Chronic nocturia, chronic incontinence, general malaise, cloudy or malodorous urine- consider hydration, observe rather than routinely check UA unless fever.
4. Men- prostate and genital exam, GC NAAT of urine if sexually active
5. Indwelling foley-
   - pyuria and bacteriuria common, not predictive of growth of >100,000 colonies of an organism.
   - CVAT specific to UTI. Falls, change in mentation, AP, pyuria, smell or appearance of urine should not be used to diagnose a UTI in isolation.
   - Vast majority of catheter-assoc UTI have counts>100,000 colonies
   - Urine sample collected after replacing the catheter or if possible mid stream
6. E. coli shouldn't be considered a contaminant if it grows in mixed flora since almost any growth of E. coli in voided urine in symptomatic pt reflects growth.
7. Growth of organisms thought to be contaminants (lactobacilli, enterococci, grp b strep, non-saprophyticus coag-neg staph) may be causative when found in voided urine with high counts and pure growth.
8. Screen for asymptomatic UTI in renal transplant patients for first 3 months.
9. Recurrent UTI (defined as >1 infn in 6 months or >2 in 1 year.

Lab Tests
UA
- Nitrites positive highly predictive of positive cx
  - PV+=75%-95%
- More than trace leukocytes PV+= 65-85%
- Presence of both is almost conclusive (PV+=95%)
- WBCs without bacteria, consider STI

Positive Culture
- If asymptomatic, must have>100k colonies

Reinfection vs Relapse
Relapse- if recurrent occurs within 2 weeks of completion of the original infn and the infecting uropathogen strain is the same.
Reinfection- vast majority of recurrences are reinfections.

Imaging (indications for CT or US to rule out obstruction):
1. Relapsing infection (see above)
2. Repeated isolation of proteus (associated with struvite stones)
3. History of passing stones
4. Hematuria that persists after eradication of the infection

Treatment
1. Cystitis-
   First line
   - Nitrofurantoin 100mg BID x 5d (females) x7d (males)
   - Bactrim DS i BID x 3d (females), x7d (males)

   Second Line
   - Keflex 250-500 qid x 5-7d

Prevention
1. Increase fluid intake by an additional 1.5L.
2. Contraception modification- abstinence or eliminate spermicide
3. Postcoital voiding
4. Wiping front to back
5. Topical estrogen for postmenopausal women (refer to gyn to dose)
6. Antibiotic prophylaxis guidelines in uptodate.

Table 2. Differential Diagnosis of Dysuria in Adults

Category	*Sex*	*Causes**
Inflammatory		
Dermatologic	Both	Irritant or contact dermatitis, lichen sclerosus, lichen planus, psoriasis, Stevens-Johnson syndrome, Behçet syndrome
Infectious	Both	Cystitis, urethritis, pyelonephritis, other sexually transmitted infections
	Women	Vulvovaginitis, cervicitis
	Men	Prostatitis, epididymo-orchitis
Noninfectious	Both	Foreign body (e.g., stent, stone), urethritis (e.g., reactive arthritis)
Noninflammatory		
Anatomic	Both	Urethral stricture or diverticulum
	Men	Benign prostatic hyperplasia
Drug- or food-related	Both	Spermacides, topical deodorants, cyclophosphamide, opioids, ketamine (Ketalar), nifedipine, and others; bladder-irritating foods
Endocrine	Women	Atrophic vaginitis, endometriosis
Idiopathic	Both	Interstitial cystitis/bladder pain syndrome
Neoplastic	Both	Bladder or renal cancer, lymphoma, metastatic cancer†
	Women	Vaginal or vulvar cancer, paraurethral leiomyoma
	Men	Prostate or penile cancer
Trauma/iatrogenic	Both	Genitourinary instrumentation or surgery, pelvic irradiation, foreign body presence, horseback or bicycle riding

**—Infectious causes, particularly acute cystitis, are the most common. There are few data to rank other diagnoses by prevalence; specific causes are listed by estimated prevalence.*

†—Some cancers (e.g., renal cell) present with dysuria primarily by causing hematuria, and others by bladder-wall irritation, which may be difficult to distinguish from true dysuria.

Information from references 2, 4, 8, and 11 through 19.

Table 3. Diagnostic Tests for Select Patients with Dysuria

*Test**	*Indications*
Ultrasonography	Initial imaging study for most patients when imaging is indicated; useful in patients who have iodinated contrast media allergy or pregnancy; measurement of the bladder residual volume helps evaluate benign prostatic hyperplasia; secondary study in recurrent UTIs, complicated pyelonephritis, or hematuria
Plain abdominal radiography (kidneys, ureters, bladder)	Most useful in known urolithiasis
CT of abdomen and pelvis with and without contrast media (CT urography)	Evaluation of hematuria, recurrent UTI (with risk factors or relapses), and complicated pyelonephritis
CT of abdomen and pelvis without contrast media	Suspected urolithiasis (ultrasonography is best initial study)
Cystoscopy	Voiding symptoms, hematuria, recurrent UTI, concern for urethral diverticula, bladder cancer, or interstitial cystitis/bladder pain syndrome
Intravenous urography	Useful for hematuria evaluation if CT urography is unavailable
Magnetic resonance imaging of abdomen and pelvis with and without contrast media (MR urography)	Most useful for complicated pyelonephritis; helpful, not preferred, for stones and hematuria

CT = computed tomography; UTI = urinary tract infection.

**—Depending on complicating features, tests are listed in order of preferred use.*

Information from references 4, 8, 9, 11, 21, 23 through 26, 28 through 30, 33, and 34.

Initial Approach in a Woman with Acute Dysuria

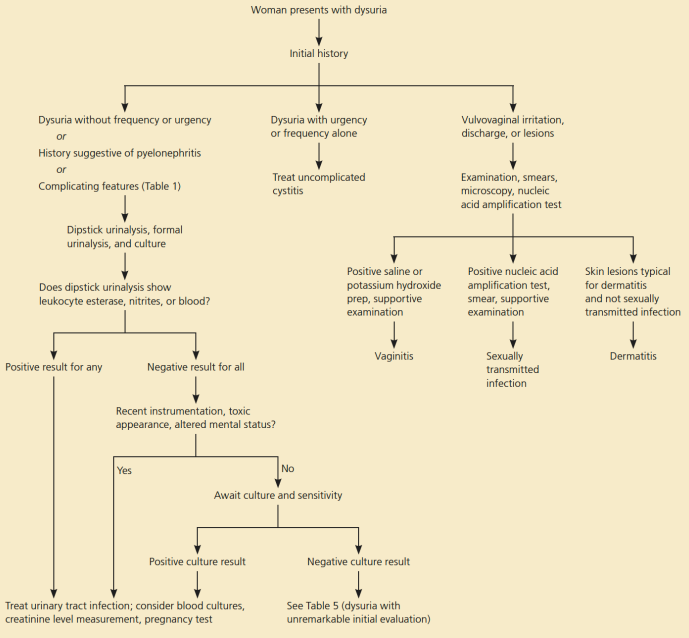

Figure 1. Algorithm for the initial approach in a woman with acute dysuria.

Information from references 2, 4, 5, 10, 20, 22, 24, 25, 31, 37, and 38.

Follow-up Evaluation in a Woman with Acute Dysuria

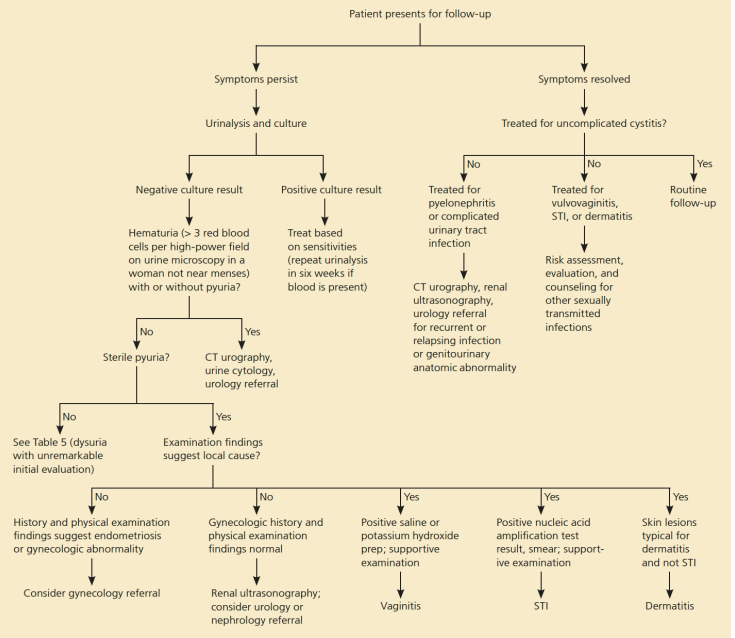

Figure 2. Algorithm for the follow-up evaluation in a woman with acute dysuria. (CT = computed tomography; STI = sexually transmitted infection.)

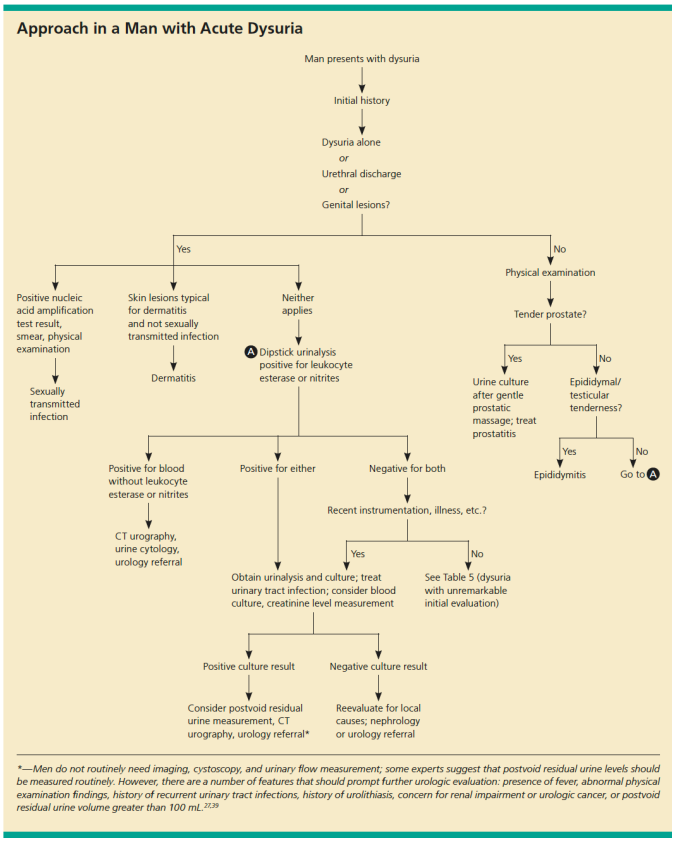

Figure 3. Algorithm for the approach in a man with acute dysuria. (CT = computed tomography.)

Information from references 4, 18, 21, 26 through 29, and 39.

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendation	*Evidence rating*	*References*	*Comments*
In low-risk women with dysuria and no vaginal symptoms or other typical UTI symptoms, physicians should obtain a dipstick urinalysis for nitrites and leukocyte esterase.	C	24, 25	Nitrites have higher predictive value for UTI but also higher false-negative rates than leukocyte esterase.
Patients with dysuria who are at risk of complications or whose symptoms do not respond to initial treatment should undergo a detailed history, directed physical examination, and urinalysis and culture.	C	8, 10	Clinical evaluation is useful to direct additional workup.
Further investigation and urology referral should be considered in patients with recurrent UTI, urolithiasis, known or suspected urinary tract abnormality or cancer, history of urologic surgery, hematuria, persistent symptoms, or in men with abnormal postvoid residual urine level (greater than 100 mL).	C	8, 10, 11, 29, 33	Some evaluations, such as postvoid residual urine, computed tomography urography, and symptom questionnaires, can be initiated by the family physician.
Women with an uncomplicated history who present with acute dysuria, urinary urgency or frequency, and no vaginal discharge can be treated for acute cystitis without other evaluation.	B	9, 23-25, 31, 35	Uncomplicated history includes 16 to 55 years of age, not pregnant, no history of recurrent or childhood UTI, not immunocompromised, no diabetes mellitus, and no anatomic urologic abnormality or recent urologic instrumentation.

UTI = urinary tract infection.

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, go to http://www.aafp.org/afpsort.

Dysuria: Evaluation and Differential Diagnosis in Adults
THOMAS C. MICHELS, MD, MPH. American Family Physician. November 1, 2015 ◆ Volume 92, Number 9

Table 5. Considerations in Patients with Dysuria and Unremarkable Initial Evaluation

Condition suspected	*Typical presentation*	*Recommendation*
Interstitial cystitis/bladder pain syndrome	Variable dysuria; frequency and urgency as primary symptoms; pain with bladder filling and relief with emptying are most specific	Initiate conservative treatment (symptom diary to modify fluid intake, diet, and physical activity; bladder training)
Overactive bladder	Prominent urgency, frequency, possible urge incontinence	Fluid restriction, bladder training, pelvic floor muscle exercises, drug therapy as needed empirically
Potentially offending topical irritant	History of topical use with or without examination findings	Discontinue use of offending agent
Suspected bladder irritants	Based on review of medications and diet*	Dietary and medication modification*
Urethral diverticulum or endometriosis (women)	Localized symptoms with or without physical examination findings	Urology or gynecology referral
Urethritis	Localized symptoms; suspect based on exposures and physical examination	Examination, smears, microscopy, and/or nucleic acid amplification testing

**—For a detailed list of bladder-irritating foods, see http://my.clevelandclinic.org/disorders/overactive_bladder/hic_bladder_irritating_foods.aspx.*

Information from references 4, 12 through 19, and 28.