

Urinary Tract Infection

(泌尿道感染)

■ Introduction to the Disease

- Urinary tract infections (UTIs) are classified into upper UTIs (e.g., acute pyelonephritis) and lower UTIs (e.g., cystitis or urethritis). The primary cause is bacteria adhering to the mucosa of the urinary tract, which are not expelled and can ascend to infect the kidneys.
- Contributing factors include urinary obstruction or residual urine—such as from benign prostatic hyperplasia (BPH), neurogenic bladder, urinary stones, or congenital abnormalities. Other risk factors include frequent urine retention, insufficient fluid intake, frequent sexual activity in females, and prolonged use of indwelling catheters.

■ Common Symptoms

- Upper urinary tract infection (e.g., pyelonephritis) may present with: Urgency to urinate, Difficulty urinating, Frequent urination, Suprapubic pain, Hematuria (blood in the urine), Fever and chills
- Lower urinary tract infection (e.g., cystitis or urethritis) may cause: Frequent urination, Burning sensation or pain during urination, Dull or tender pain above the pubic area

■ Examinations

- Urinalysis: To detect pyuria (pus in urine), bacteriuria, or microscopic hematuria
- Urine culture: To identify the type of bacteria (most commonly *Escherichia coli*)
- Renal ultrasound: To evaluate kidney structure for congenital abnormalities, obstruction, or tumors
- Intravenous pyelography (IVP): To examine the kidneys, ureters, and bladder for any abnormalities

■ Treatment

- Medication: Antibiotics are prescribed and adjusted based on urine and blood culture results.
- Surgical intervention: In cases of recurrent infections with antibiotic resistance, or when the source of infection is due to urinary reflux or obstruction, surgical treatment may be required. Procedures may include nephrectomy, pyelolithotomy, ureteral diversion, or ureteroplasty.

■ Acute Care

- Administer intravenous fluids to maintain hydration.
- If not contraindicated, ensure adequate oral intake—at least 3000 mL per day.

For reference only. Please follow your doctor's instructions.



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- During fever, use an ice pillow, ensure proper air circulation, minimize bedding, and wear loose, breathable clothing.
- Provide a high-calorie, well-balanced diet. Avoid spicy or irritating foods. Do not consume alcohol or coffee.

■ Home Health Management

- Maintain regular fluid intake, approximately 2000–3000 mL per day.
- Consume foods rich in vitamin C, such as vegetables and fruits (e.g., cranberries), to acidify urine and reduce crystal formation.
- Urinate immediately after sexual intercourse to reduce the risk of bacteria entering the bladder via the urethra.
- Empty the bladder regularly and avoid holding urine.
- Keep the perineal area clean. After each bowel movement or urination, wipe from front to back (especially important for women during menstruation—change sanitary pads frequently and avoid touching the inner pad surface; do not use feminine hygiene sprays).
- For individuals using diapers, change them frequently to keep the perineal and buttock areas dry.
- Wear cotton underwear; avoid tight underwear or shapewear to reduce moisture and improve ventilation, which prevents bacterial growth.

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- Avoid bathtub soaking or bubble baths. Use showers to reduce the risk of introducing pathogens.
- Take all medications as prescribed and attend scheduled follow-up appointments.

■ Emergency Return Instructions

- Seek immediate medical attention if you experience fever, chills, or similar symptoms.

■ Quick Review

Question 1: () Maintaining a daily fluid intake of around 1000 mL is sufficient to help prevent urinary tract infections.

Question 2: () Holding urine has little effect on the bladder and does not increase the risk of urinary tract infections.

Question 3: () At home, one should wear breathable cotton underwear to avoid warm and humid environments.

Correct Answers:

Q1: X Q2: X Q3:○

References

- Mattoo, T. K., & Spencer, J. D. (2024). Biomarkers for urinary tract infection: present and future perspectives. *Pediatric nephrology (Berlin, Germany)*, 39(10), 2833–2844.
- Peck, J., & Shepherd, J. P. (2021). Recurrent Urinary Tract Infections: Diagnosis, Treatment, and Prevention. *Obstetrics and gynecology clinics of North America*, 48(3), 501–513.

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