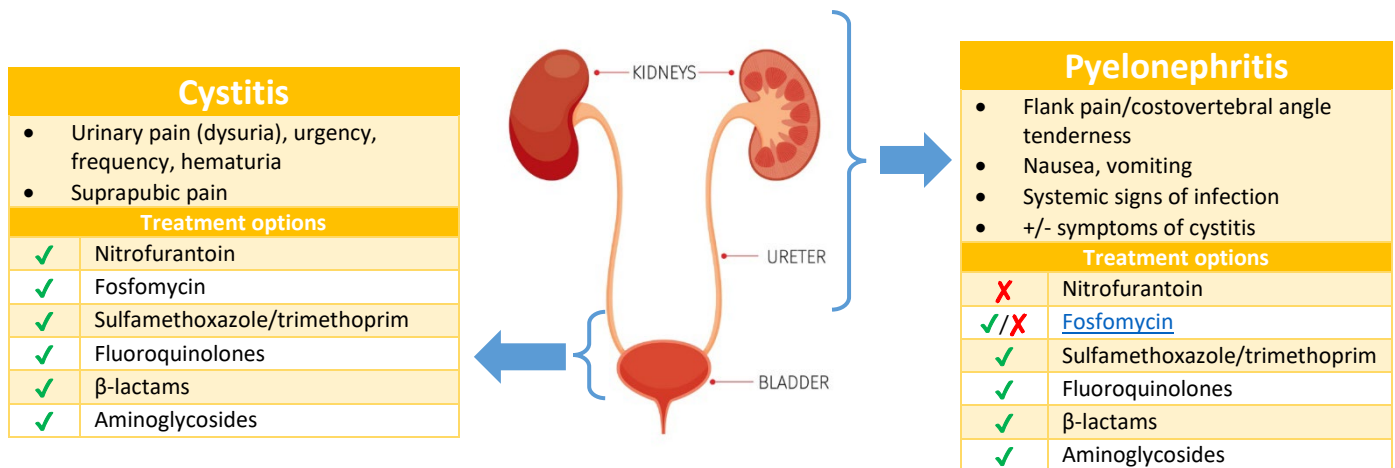


Cystitis vs. Pyelonephritis

Urinary tract infections (UTIs) include cystitis, an infection of the bladder, and pyelonephritis, an infection of the kidney. How do cystitis and pyelonephritis differ and why does specificity matter?

What is the difference between cystitis and pyelonephritis?¹⁻³

The majority of UTIs begins when enteric bacteria enter the genitourinary system through the urethra. In cystitis, pathogens infiltrate the urethra and bladder mucosa resulting in acute lower urinary tract symptoms such as painful and frequent urination. From the bladder, infection can ascend further and involve the ureter and renal parenchyma causing pyelonephritis. Pyelonephritis signs and symptoms include nausea, vomiting, flank pain or costovertebral angle tenderness, and systemic signs (e.g. fever, chills, malaise). Patients with pyelonephritis may also have lower urinary tract symptoms, but their absence is common. A summary of clinical presentation and treatment options is below.



Why is distinguishing between the two important?

Management of cystitis and pyelonephritis differs in antibiotic selection, dose, and duration of therapy. Antimicrobials that only concentrate in the urine can be used for cystitis, but not pyelonephritis. The most common example of this is nitrofurantoin.⁴

Key Takeaway: Assessments should be more specific than UTI. Cystitis is a urinary tract infection limited to the bladder, whereas pyelonephritis involves the ureters and renal parenchyma. Antibiotic options, dose, and duration differ between cystitis and pyelonephritis.

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