*Clinical Infectious Diseases*

STATE-OF-THE-ART REVIEW

# Executive Summary: State-of-the-Art Review: Recurrent Uncomplicated Urinary Tract Infections in Women

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## WHAT IS THIS CLINICAL REVIEW ABOUT?

Over 50% of adult women experience at least 1 urinary tract infection (UTI) in their lifetime, and almost a quarter of them will experience a recurrent UTI (rUTI). RUTI is defined as ≥2 UTIs in a 6-month period or ≥3 UTIs in 12 months (at least 1 episode culture-proven). Although patients may recover fully from each UTI episode, the cumulative burden of rUTIs on healthcare costs and quality of life is substantial. In this narrative review, we discuss the epidemiology, pathogenesis, diagnosis, and treatment considerations for recurrent uncomplicated cystitis in the adult female population.

## WHAT ARE THE MAIN DIAGNOSTIC, MANAGEMENT AND TREATMENT CHALLENGES?

Assessing an acute episode of rUTI involves evaluating genitourinary symptoms and ordering a urine culture. Distinguishing a true UTI from conditions like asymptomatic bacteriuria or lower urinary tract symptoms (LUTS) can be challenging, particularly in older adults. In most cases, asymptomatic bacteriuria (or positive urine cultures in the absence of symptoms referrable to the urinary tract) does not need antimicrobial treatment. In patients with chronic LUTS, assessing for new or worsening symptoms may be of value in diagnosis.

On urinalysis, absence of pyuria can help rule out a UTI but the presence of pyuria or nitrites is not diagnostic of UTI in otherwise asymptomatic patients. Urine culture results in symptomatic patients can help target antimicrobial therapy but also rule out other genitourinary conditions such as overactive bladder, interstitial cystitis, and genitourinary syndrome of menopause, which require different treatment approaches. If a clean catch urine sample is contaminated or shows mixed flora on culture, obtaining a catheterized specimen should be considered.

Following treatment of an acute rUTI episode, initiating a prophylactic strategy to prevent future recurrences is recommended. Choice of prophylactic strategy depends on specific risk factors (eg., age), frequency of infections, as well as patients' treatment goals and preferences. In post-menopausal women without increasing frequency of rUTIs, vaginal estrogen is preferred over antibiotic prophylaxis initially. For pre-menopausal women, starting with antibiotic-sparing methods such as methenamine or cranberry is preferable. Generally, in women of any menopausal status experiencing escalating frequency of rUTIs, starting with antimicrobial prophylaxis, and transitioning to non-antimicrobial strategies after several infection-free months could be considered.

## HOW DO YOU ENGAGE IN SHARED DECISION MAKING?

Patients with rUTIs exhibit varying perspectives on the disease and different treatment goals. For instance, one patient may be primarily concerned with the risk of sepsis, whereas a different patient may be more concerned about antibiotic adverse events. Given the array of available strategies for preventing rUTIs and the nuanced balance of benefits and risks involved, physicians are advised to adopt a shared decision-making approach. A critical factor in this process is to reach a consensus on treatment goals with the patient. Utilizing patient decision aids can facilitate shared decision-making by thoroughly exploring the advantages and disadvantages of antibiotic versus non-antibiotic therapies. If opting for suppressive antibiotics collaboratively, physicians should establish clear, predefined criteria for treatment success and a timeline for reassessing the benefits and risks of ongoing antibiotic use. Additionally, it is essential to emphasize potential

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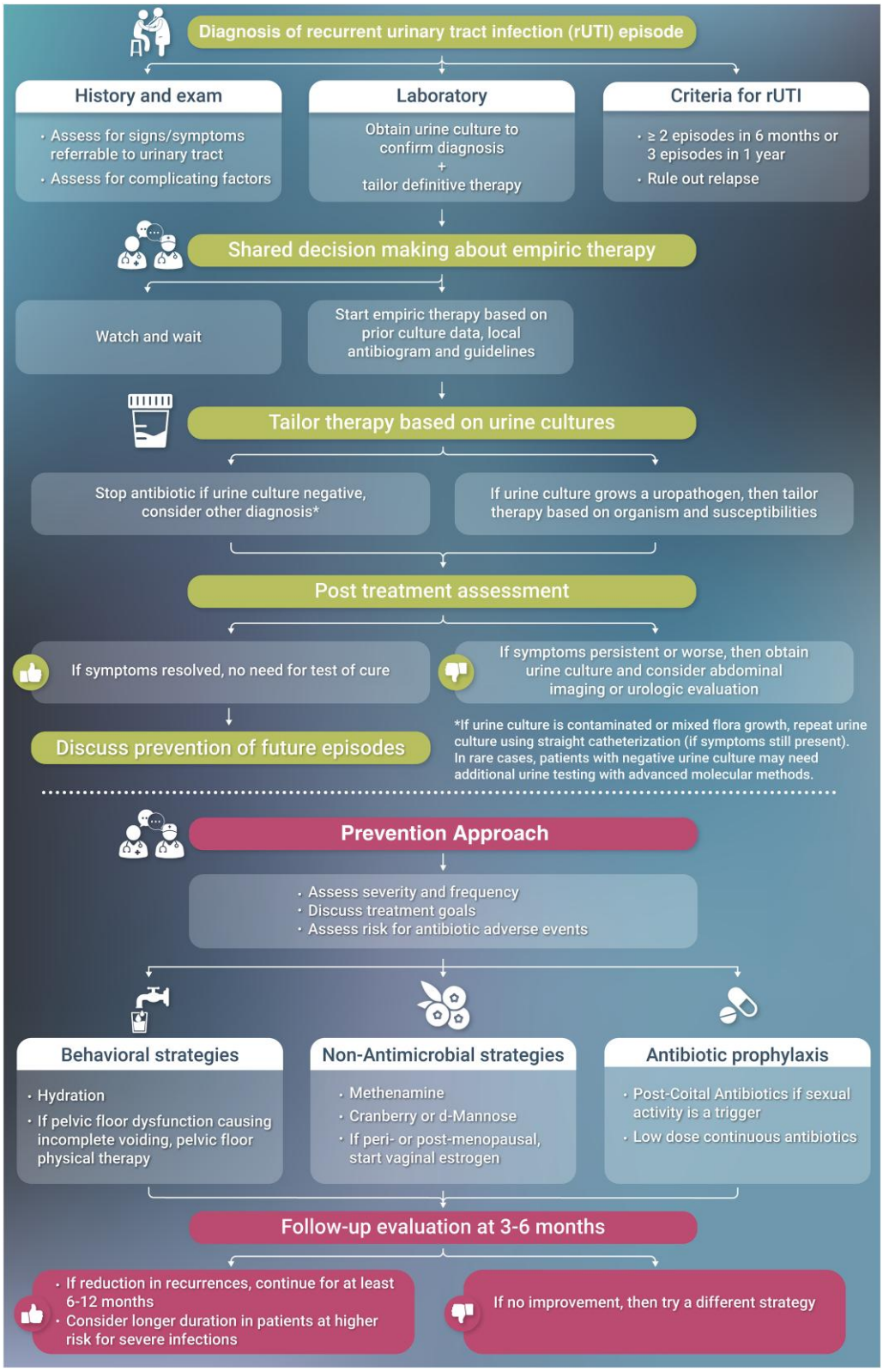


risks such as the development of antibiotic-resistant infections, adverse effects associated with antibiotics, and the risk of *Clostridioides difficile* infection (CDI). Although this initial approach may require significant time investment during the initial consultation, it lays a robust groundwork for a collaborative physician-patient relationship going forward.

## Notes

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