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**Médecine et
maladies infectieuses**

Médecine et maladies infectieuses xxx (2017) xxx–xxx

Recommandations

Practice guidelines for the management of adult community-acquired urinary tract infections

Recommandations pour la prise en charge des infections urinaires communautaires de l'adulte

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Keywords: Urinary tract colonization; Urinary tract infection; Cystitis; Pyelonephritis; Male urinary tract infection; Prostatitis; Urosepsis

Mots-clés : Colonisation urinaire ; Infection urinaire ; Cystite ; Pyélonéphrite ; Infection urinaire masculine ; Prostatite ; Urosepsis

1. English version

1.1. Introduction

The present updates to the guidelines on the management of adult community-acquired urinary tract infections (UTI) was

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performed under the aegis of the French Infectious Diseases Society (French acronym SPILF), by experts from the following specialties: infectious diseases, microbiology, urology, primary care medicine, geriatrics, and radiology.

As per the French National Authority for Health (French acronym HAS) method [1], each recommendation was attributed a grade (A, B, or C) based on the level of scientific evidence provided by related studies (Table 1).

When literature data was lacking, the recommendations were drafted on the basis of a consensus achieved by healthcare

Table 1
Level of scientific evidence and strength of the recommendations.

Level I	Grade A
Well-powered randomized and comparative study	
Meta-analysis	
Level II	Grade B
Low-power randomized and comparative study	
Level III	Grade C
Recent non-randomized comparative study	
Cohort study	
Level IV	Grade C
Comparative trial with a historical cohort	
Case series	

professionals taking into consideration current practices and experts' opinion.

The guidelines were posted on the SPILF website (www.infectiologie.com) in 2014 (cystitis, pyelonephritis, male UTI) and were then updated in 2015 (UTI in pregnancy, use of temocillin and trimethoprim [TMP]). The present document provides an overview of the main recommendations, and includes changes decided in 2017 to take into account updates related to the bacterial resistance to antibiotics as well as the most recent publications.

1.2. Terminology and overall management strategy

Formerly known as asymptomatic bacteriuria, urinary tract colonization refers to the presence of bacteria in the urine without any associated clinical signs and symptoms and with or without associated leukocyturia [2]. Except for pregnant women, there is no threshold for bacteriuria.

UTIs refer to infections associating clinical (local or non-specific) and biological signs and symptoms (cystitis, pyelonephritis [APN for acute pyelonephritis], acute prostatitis, and other presentations of male UTIs). The present document only deals with acute presentations (in the interest of simplification and as per commonly used medical terms, the term “acute” is not always indicated). The present document focuses on adult urinary tract infections and may be used with adolescents as young as 16 years old.

When the urine culture is positive, the first step is to distinguish a colonization from an infection (Fig. 1).

In case of UTI, one must then determine whether the presentation is uncomplicated or at risk of complication. The term “UTI at risk of complication” is preferred to the former term “complicated UTI” because it refers to patients presenting with at least one risk factor, which may lead to a more severe or a more difficult-to-treat infection, but the complication does not necessarily develop. Risk factors for complication include organ or functional abnormalities of the urinary tract (post-void residual urine, vesicoureteral reflux, lithiasis, tumor, recent urological procedure, etc.) and some underlying patients' characteristics (male gender, pregnancy, elderly patients with frailty criteria [see below], severe chronic renal failure [creatinine clearance < 30 mL/min], and severe immunodeficiency [although precise

“levels of at-risk immunodeficiency” cannot be defined]). “Frail elderly patients” are individuals aged over 75 years (most people of that age have risk factors for complication) and individuals aged over 65 years presenting with at least three Fried's frailty criteria [3]: unintentional weight loss within the past year, slow walking pace, poor endurance, weakness/fatigue, reduced physical activity. Compared with previous guidelines, the age criterion has been reintroduced to help identify patients at risk of poorer outcome. Diabetes is, however, no longer considered a risk factor for complication: UTIs are indeed more frequently observed in diabetic patients, but UTIs at risk of complication are not.

Severity criteria must then be investigated in patients presenting with UTI and systemic signs and symptoms (other than cystitis):

- severity of sepsis: severe sepsis (Quick SOFA ≥ 2), septic shock [4];
- or urological procedure required (surgical or interventional, other than urinary catheterization), with a risk to exacerbate the sepsis during the procedure.

When severity criteria are observed, the risk of UTI caused by an extended-spectrum β -lactamase Enterobacteriaceae (ESBL-E) should be investigated because of the associated substantial impact on the empirical antibiotic treatment choice.

Key recommendations: terminology

- Colonization must be distinguished from infection when the urine culture is positive.
- UTI:
 - uncomplicated UTIs must be distinguished from UTIs at risk of complication;
 - severity criteria must be identified: severity of sepsis, but also invasive urological procedure;
 - in case of confirmed severity criteria, risk factors for ESBL-E infection must be taken into account.
- Men can present with prostatitis, but also with cystitis or pyelonephritis.

1.3. Diagnostic tools

1.3.1. Urine test strip

Urine test strips only have a predictive value by detecting leukocytes (sensitivity threshold: 10^4 leukocytes/mm³) or nitrites. High levels of nitrites (changing of color of the reaction at the threshold of 10^5 CFU/mL) indicate the presence of an Enterobacteriaceae. The other bacteria commonly involved in UTI do not produce nitrites.

Diagnostic performances of urine test strips vary by patient's gender. The main added value of the urine test strip in symptomatic women is its high negative predictive value (> 95%) in

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