Urinary tract infection or subclinical bacteriuria: what's the difference and when to treat?

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ISCAID Antimicrobial Guidelines Working Group was formed to develop guidelines for antimicrobial drug use in dogs and cats, because of concerns that antimicrobial drug resistance has dramatically increased in prevalence among isolates from dogs and cats in the last decade. Since first publication of urinary guidelines in 2011, the Guidelines Working Group has revised and updated them based on new evidence available in veterinary and human medicine, and the updated document was published in May 2019 (www.iscaid.org). One of the most significant recommendations in regards to the way veterinary surgeons practise surrounds the definition of a 'urinary tract infection' (UTI). The guidelines differentiate between UTI and 'subclinical bacteriuria' (SB), which is important because they have different implications for treatment.

Sporadic cystitis is a sporadic bacterial infection of the bladder. A clinically significant UTI implies the presence of clinical signs of lower urinary tract disease – that is, dysuria, haematuria, pollakiuria and/or stranguria. Complete urinalysis should be performed for all cases and quantitative aerobic culture and susceptibility (C&S) testing is encouraged. Free-catch samples should be avoided due to potential for contamination by commensal bacteria. Recommendations for initial empirical treatment are amoxicillin (11–15 mg/kg orally q12h) or trimethoprim–sulphonamide (15 mg/kg orally q12h). Although treatment has been recommended in the past for 7–14 days, recent research suggests 3–5 days may be more appropriate. There is no evidence that intra- or post-treatment urinalysis or urine culture is indicated in the absence of ongoing clinical signs of UTI.

Recurrent bacterial UTIs are defined by the presence of three or more episodes of UTI during a 12-month period or two or more infections within a 6-month period. When recurrent UTIs are diagnosed, efforts should be made to identify the underlying cause. Primary care veterinary surgeons should consider referral for a work-up that might include abdominal ultrasonography and cystoscopy. Treatment should be based on the results of C&S, with initial empirical therapy following the recommendations for sporadic cystitis.

Subclinical bacteriuria is the presence of bacteria in the urine as determined by positive bacterial culture, in the absence of clinical signs of UTI. It is common,

especially in older female dogs. In humans, more than 20% of women over 80 years have SB. Treatment of SB is generally not recommended, because it only selects for resistant bacterial populations, but could be considered if pyelonephritis is suspected. This challenges the traditional practice of culturing urine of dogs and cats that lack lower urinary tract signs, but have underlying disorders such as Cushing's or diabetes, or those receiving immunosuppressive drugs, and treating those that test positive with antimicrobial drugs. However, there is strong evidence in human medicine, and growing evidence in veterinary medicine, that treatment of SB does not change outcome and may even contribute to adverse outcomes. If it is unclear whether clinical signs exist, a 3–5-day course of antimicrobial treatment could be attempted.

KEY LEARNING OBJECTIVES

- Be aware that updated antimicrobial use guidelines have been developed by the International Society for Companion Animal Infectious Diseases (ISCAID) that provide information on antimicrobial choice, dose and duration of treatment for urinary tract diseases in dogs and cats
- Know the difference between urinary tract infection (UTI) and subclinical bacteriuria (SB)
- Know when to treat, what drugs to use and the duration of treatment when bacteria are detected in the urine

MULTIPLE CHOICE QUESTIONS

1. Which one of the following would NOT be considered consistent with a UTI? Assume the problems listed are the only abnormalities present
 - (A) A dog with bacteriuria and gross haematuria
 - (B) A dog with bacteriuria and dysuria
 - (C) A dog with bacteriuria and pyuria on sediment examination
 - (D) A cat with bacteriuria and pollakiuria
2. Which of the following antimicrobials would be an appropriate first-choice drug for empirical treatment of a UTI in a dog?
 - (A) Amoxicillin
 - (B) Enrofloxacin
 - (C) Cephalexin
 - (D) Chloramphenicol
3. What is the recommended duration of antimicrobial therapy for sporadic cystitis?
 - (A) 3–5 days
 - (B) 7–10 days
 - (C) 10–14 days
 - (D) 14–21 days