



Preface

Urinary tract infections



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Guest Editor

Although there are few community based surveillance systems to assess the actual prevalence of urinary tract infections (UTI), clinical experience indicates that urinary tract infections continue to be an exceedingly common clinical problem in both developed and developing countries. Community acquired urinary tract infections are particularly common in women, with the vast majority experiencing at least one infection in their lifetime. Additionally, a significant subset (25–40%) of women develop recurrent infections, in some cases with multiple infections recurring over months or years. The underlying explanation for the continued frequency of urinary tract infections and the heightened predisposition to frequent infections in selected individuals are not fully explained despite decades of research. Other clinical problems of importance with respect to urinary tract infections include asymptomatic bacteriuria; infections in particular populations such as pregnant women, diabetics, patients with spinal cord injury, and children; and patients with complicated urinary tract infection. Finally, nosocomial bacteriuria (generally a reflection of catheter associated infection) still constitute about 40% of all hospital acquired infections, are not easily prevented in patients with catheters that stay in place longer than a few days, and remain a common source of nosocomial bacteremia.

Beyond their obvious clinical importance and attributable health care costs, urinary tract infections have become an excellent and accessible model for understanding microbial pathogenesis and the development of mucosal immune responses. The last two decades have seen the development of a much improved understanding of the pathogenesis of these infections as a

result of studies identifying urovirulence determinants in uropathogenic bacteria and conversely studies identifying the interaction of these pathogens with the epithelium and the ensuing cell biology of the resulting mucosal infection. Advances have been made in delineating the pathogenic mechanisms of UTI both from the microbial and host perspective, and many such advances have resulted in new conceptual paradigms in microbial pathogenesis. Although antimicrobials can generally provide for successful treatment or prevention for urinary tract infection, emerging antimicrobial resistance among uropathogens will eventually limit our future ability to prevent and treat these infections with antibiotics. There is, therefore, an urgent need to develop new approaches to their prevention and treatment that depend more upon a molecular understanding of their pathogenesis rather than upon the use of antimicrobials. The current monograph provides expert commentary addressing many of these issues. The topics presented are intended to provide an overview of the epidemiology, risk factors, and emerging antimicrobial resistance associated with urinary tract infections as background for other chapters that describe the evaluation of patients with the most common and important clinical syndromes associated with urinary tract infection. Additionally, the monograph provides an update of the microbial pathogenesis of these infections from both the pathogen and host perspective. Other chapters focus upon particularly difficult clinical problems and provide a perspective on their management from both the urologic and radiologic perspective. Finally, novel and innovative approaches to prevention of these infections in the future are discussed.

Having had the pleasure of reading all the contributions, I would like to thank each of the authors for their excellent chapters and for the time and energy they invested in this monograph.

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