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# Introductory Chapter: Presenting an Overview on the Main Clinical, Diagnostic and Therapeutic Aspects of Human Cystitis

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## 1. Introduction

Bladder inflammation is identified as cystitis. Among the different classification systems of urinary tract infections (UTIs), cystitis represents the most prevalent condition. Bladder inflammation does not recognize infections as the only etiopathogenetic factor. In fact, several non infectious diseases may determine bladder inflammation and are often chronic. In both cases, cystitis is responsible for highly bothering symptoms: increase of micturition frequency, urinary urgency (the complaint of a sudden compelling desire to pass urine that is difficult to defer), urinary burning, urinary incontinence, bladder pain/discomfort, and hematuria, rarely associated with fever. All these symptoms have a negative impact on patients' quality of life because especially in some conditions they recur or persist for a long time [1]. Uncomplicated cystitis are those acute, sporadic, or recurrent cystitis with no known relevant anatomical and functional abnormalities with the urinary tract or significant associated comorbidities [2]. Usually microbial cystitis in men are not common because almost in all cases there is an associated inflammation of the prostate (prostatitis). Therefore, when symptoms of UTIs develop in men and the treatment needs antimicrobials, drugs penetrating the prostatic tissue are recommended. Complicated cases are those in whom some clinical features of the patient (comorbidities, anatomical abnormalities) can determine a condition that is more difficult to treat: diabetes, congenital anatomic disorders, and state of immunosuppression are the most represented factors increasing the risk of complications. However, both men and women can be affected by abacterial cystitis that include various clinical conditions and recognize etherogeneous etiopathogenetic agents.

## 2. Background from literature

Current literature provides data on various types of cystitis. However, most of the manuscripts focus the attention on a single, specific subtype of cystitis and a large amount of data are available especially about interstitial cystitis, and chronic bladder pain (bladder pain syndrome). In the last years, poor data have been published on bacterial cystitis, as on radiation cystitis, or cystitis related to drugs. A very important

topic is the bacterial resistance to antimicrobial drugs that is becoming even more critical especially in hospitalized individuals. Therefore, the recent literature lacks a text that summarizes the most significant topics about cystitis and can represent a sort of guide for clinical practice.

### **3. Main topics in the field of cystitis**

There are some main topics that need to be discussed about cystitis. Nowadays, bacterial cystitis have become difficult to treat due to the abuse of antibiotics in the last years that caused a significant increase of germs' resistance to drugs the abuse of antibiotics in the last 10 years and the consequent increase of bacterial resistance to drugs. Therefore, it is important to provide an update on the current etiopathogenic aspects of bacterial cystitis, and especially to focus the attention on the correct diagnostic procedures and the recommended treatment which aims to limit the bacterial resistance preventing the recurrence of the infection. In fact, the prevention of cystitis is also an underconsidered topic and poor data are available from literature regarding lifestyle changes that can reduce the onset of this condition and limit the recurrence rate [3]. Bladder pain syndrome is a very discussed argument and includes various conditions that still represent a challenge for clinicians. In particular, still today diagnostic and therapeutic management of Interstitial Cystitis is under debate and therefore continuous update is required for urologists and gynecologists, considering the hard negative impact that this condition causes on patients [4]. Radiation therapy has become the standard treatment for many tumors, especially those involving the pelvic area. Despite the incidence of inflammatory complications that has been reduced by new devices available for this treatment, the number of patients undergoing radiation therapy is increasing during the time and a significant group of subjects experience radiation cystitis [5]. While in many cases the inflammation is mild and easily managed in primary care, sometimes it could be severely bothering and responsible for complications that can become a risk for life. Another type of iatrogenic cystitis can be the consequence of the administration of specific drugs. Some pharmacological agents used in chronic treatments can be the cause of severe bladder inflammation. Being this condition not very frequent, its diagnosis, and especially its treatment, are not well known by clinicians. Urinary tract infections can be frequent in immunocompromised patients or in subjects that still need to develop a complete immunological competence. That is the case of pediatric subjects, who need specific assessment and dedicated diagnostic and therapeutic algorithm, considering also the fact that symptoms sometimes can be deceiving.

### **4. Considerations about real clinical practice**

One of the most important challenges nowadays in this field, specifically regarding real clinical practice, is therefore to prevent the recurrence of bacterial cystitis, to improve the efficacy of antimicrobial agents against multiresistant bacteria, to reduce the risk of chronicization, and to find more effective therapeutic strategies to fight abacterial cystitis. When cystitis becomes very frequent, with high recurrence, or takes on a chronic course, it causes a strongly negative impact on patients' quality of life. Therefore, it is important that in our everyday clinical practice, patients who come to our attention suffering from cystitis should not be underestimated. These

patients need proper assessment, following specific guidelines since the initial assessment, to prevent misdiagnosis, understand pathophysiology that often is associated with comorbidities, and consequently avoid wrong therapies that can increase risk of recurrence, chronicity, and complications. The purpose of this book is to fill the gaps in the recent literature and provide a guide for daily clinical practice for the clinical assessment of the cystitis and, in relation to therapy, to describe all the available options, including those suggested by the recent research. Some recently introduced therapies are not available in all medical centers; patients' refractory to first-line therapeutic approaches should be referred, when indicated, to hospitals or medical centers that can provide a recommended treatment.

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