

# Intravesical therapy in recurrent cystitis: a multi-center experience

Marco Torella · Maria Teresa Schettino ·  
Stefano Salvatore · Maurizio Serati ·  
Pasquale De Franciscis · Nicola Colacurci

Received: 6 March 2013 / Accepted: 19 April 2013

© Japanese Society of Chemotherapy and The Japanese Association for Infectious Diseases 2013

**Abstract** Approximately 20–30 % of women suffer from recurrent cystitis. Recently, the problem of bacterial internalization, especially by *Escherichia coli*, has been significantly emerging as the main cause of recurrent episodes. It is believed that such a process is favored by damage to the urothelial mucous membrane. Concerning this, intravesical therapy with hyaluronic acid alone or in association with chondroitin sulfate was shown to improve urothelium thickness and reduction of bacterial load in the urine. The aim of our study was to assess whether intravesical therapy with hyaluronic acid (HA) and chondroitin sulfate (CS) is more effective than antibiotic therapy in reducing episodes and symptoms of recurrent urinary tract infections. We compared the number of recurring episodes in three groups of patients affected by recurrent urinary tract infections assigned to three different therapeutic regimens: the first group was treated only with HA and CS, the second group with HA and CS associated with fosfomycin, and the third group was treated only with fosfomycin (F). We assessed the number of recurrent episodes for each patient that occurred during a 6- to 12-month follow-up. The results showed 72.7 % of patients in the

HA-CS group, 75 % in the fosfomycin + HA-CS group, and only 30.4 % in the fosfomycin group were event free at follow-up. The results were analyzed using the Fisher's exact test. In conclusion, intravesical therapy with hyaluronic acid and chondroitin sulfate is an effective therapeutic approach to treat and prevent episodes of recurrent cystitis.

**Keywords** Recurrent cystitis · Intravesical therapy · Hyaluronic acid · Chondroitin sulfate · Fosfomycin

## Introduction

Cystitis is a bladder inflammation, either acute or chronic, that can be mild, moderate, or severe and is secondary to a microbiological insult. It is estimated that about 40 % of women experience, at some point in their life, at least one urinary tract infection episode with no complications, which is caused by *Escherichia coli* [1, 2] in 75–90 % of cases.

More importantly, 20–30 % of women suffer from recurrent cystitis; that is, after the first contagion they report two or more episodes of bladder infection within 6 months, or three or more episodes within 12 months, documented by positive urine culture and absence of any functional or structural abnormality of the urinary system. *Escherichia coli* is also the most frequent pathogen for recurrent cystitis, accounting for about 60 % of the cases.

Although it is widely known that individual predisposition resulting from genetic, biological, and behavioral factors [3], as well as inappropriate therapy, favor the onset of recurrent cystitis, recently the problem of bacterial internalization, especially by *Escherichia coli*, has been significantly emerging as the main cause of recurrent

---

M. Torella (✉) · M. T. Schettino · P. De Franciscis ·  
N. Colacurci

Department of Woman, Child and of General and Specialized  
Surgery, Second University of Studies of Naples, Largo  
Madonna delle Grazie n°1, 80138 Naples, Italy  
e-mail: mt.s76@libero.it

S. Salvatore  
Department of Gynecology and Obstetrics, Vita Salute San  
Raffaele University School of Medicine, Milan, Italy

M. Serati  
Department of Obstetrics and Gynecology, Insubria University,  
Varese, Italy

episodes. Internalization is a process through which microorganisms that are naturally extracellular develop the ability to enter the cells and so become protected from the host's defense and antibiotics [4]. It is believed that such a process is favored by morphological damage to the urothelial mucous membrane. The healthy urothelium is indeed coated with a mucopolysaccharide film composed of a variety of elements known as glycosaminoglycans (GAGs), highly hydrophilic molecules that attract water and create a chemical barrier that protects the urothelium. On this basis, as the intravesical administration of some of these GAGs proved to be effective in restoring the urothelial function in interstitial cystitis, several studies have been carried out to evaluate whether such a treatment strategy may also be a practical therapeutic alternative to antibiotics to reduce the episodes of recurrent cystitis [5]. Accordingly, intravesical therapy with hyaluronic acid alone or in association with chondroitin sulfate was shown to benefit urothelial thickness and reduction of the bacterial load in urines.

In agreement with these data, the aim of our study was to assess whether intravesical therapy with hyaluronic acid and chondroitin sulfate is more effective than antibiotic therapy in reducing episodes and symptoms of recurrent urinary tract infections (UTI). We compared the number of recurring episodes in three groups of patients affected by recurrent urinary tract infections assigned to three different therapeutic regimens: the first group was treated only with hyaluronic acid and chondroitin sulfate (HA + CS), the second group with hyaluronic acid and chondroitin sulfate associated with long-term antibiotic therapy with 3 g fosfomycin (HA + CS + F), and the third group was treated only with long-term antibiotic therapy with 3 g fosfomycin (F). We analyzed the efficacy of the three treatment strategies in terms of reduction of recurrent episodes and compared them to establish the best therapeutic approach to reduce both infection recurrence and related symptoms.

## Materials and methods

This study was a prospective or retrospective analysis of data from our database. The written patient consent to be enrolled in the study was obtained from all patients. The protocol for the research project has been approved by the Ethics Committee of our University Department, in accordance with the provisions of the Declaration of Helsinki. We recruited from our database 69 patients with an average age of 58.6 years (range, from 53 to 64 years), with a documented history of recurrent cystitis confirmed by at least two episodes of infection without any complication in the previous 6 months or at least three episodes in the previous 12 months. The infection was confirmed by

positive urine cultures, which in most cases were positive for *Escherichia coli*.

We excluded from the study patients who did not meet the inclusion criteria, patients older than 70 years, patients with acute infections or already under active treatment, patients with a post-void residual >100 ml, patients with abnormalities of the urinary or genital system, those with fully manifest or suspected diagnosis of stress or urge urinary incontinence, patients suffering from interstitial cystitis or painful bladder syndrome, manifest neoplasm, urinary tract stones, renal insufficiency, or diabetes mellitus, patients using corticosteroids or immunosuppressive agents, spermicidal products or intrauterine devices, or pregnant patients. We have also excluded patients in therapy with systemic or vaginal estrogens to avoid possible biases. Patients who had previously undergone prosthetic surgery were included only after ultrasound investigation to assess the post-void residual, the thickness of the bladder wall, and the correct positioning of the sling inserted to avoid possible biases from postoperative obstructive pathology [6–10].

We performed an objective clinical and anamnestic assessment of the patients, considering medical history, previous urine cultures, and consequent therapies, bladder diary, and the post-void residual through ultrasound scan. Patients were requested to complete a validated questionnaire grading the symptoms (pelvic pain and urgency/frequency: patient symptom scale, PUF scale) to obtain a generic assessment based on the resulting score. The total score range is between 0 and 35. Moreover, we asked the patients to provide a subjective evaluation of their perception of the severity of their symptoms, selecting a grade between 1 and 10, where 0 is the best health state and 10 the worst health state (VAS scale).

To exclude possible organic bladder pathologies and to assess the trophism of the bladder mucosa, we also performed cystoscopy. We excluded interstitial cystitis, according to the NIDDK criteria (National Institute Diabetics, Digestive and Kidney Diseases) [11]. We evaluated the state of inflammation of the bladder mucosa and classified three degrees of inflammation: mild, moderate, and severe. We performed bladder biopsy only in doubtful cases of interstitial cystitis; the latter occurred in only one patient. Patient characteristics are summarized in Table 1.

The patients who complied with the criteria established for the study at the time of first examination were recruited.

To avoid bias, patients were recruited, consecutively, from the database of three different independent investigators (A, B, C): one which is usually administered only antibiotic therapy, one that is usually administered only intravesical therapy, and one which is usually administered a combination of antibiotic + intravesical therapy. All patients showed the same clinical features.

Download English Version:

<https://daneshyari.com/en/article/6123818>

Download Persian Version:

<https://daneshyari.com/article/6123818>

[Daneshyari.com](https://daneshyari.com)