

urgency were evaluated on a 10-point severity scale and compared using the sign-rank test.

A total of 203 patients completed the survey, for a response rate of 53.6%. Analysis of attrition demonstrated no difference between the participants and nonparticipants regarding age, severity of symptoms and associated conditions. A decrease in symptom severity was seen in >40% of responders with exacerbation to pizza, coffee, acidic fruits and juices, spicy foods, and tomato-based products. A 20%–30% reduction was seen in responders with exacerbation related to carbonated drinks, alcohol, and chocolate. Pain and discomfort decreased from 5.3 to 3.6 ( $P < 0.0001$ ), whereas urgency was reduced from 5.3 to 4.1 ( $P < 0.001$ ). Regarding quality of life issues, the majority of responders had a positive change or no change ( $P < 0.0001$ ).

CGP appears to reduce IC symptoms in patients with food-related exacerbations and improve their quality of life.

## ICBR-47

### Evaluation of Transvaginal Theile Massage as a Therapeutic Intervention for Women with Interstitial Cystitis

*A. Holzberg, S. Kellog-Spadt, J. Lukban, and K. Whitmore*

*Pelvic Floor Institute, Graduate Hospital, Philadelphia, Pennsylvania, USA*

The purpose of this study was to assess the effectiveness of transvaginal Theile massage on high-tone pelvic floor musculature in patients with interstitial cystitis (IC).

A sample of 10 subjects was recruited from a large urban urologic practice that specializes in IC. Subjects had a confirmed diagnosis of IC by bladder overdistention and biopsy and significant complaints of frequency, urgency, and/or pain. Subjects underwent a genitourinary physical exam to elicit and document pelvic floor tone and trigger points as well as an objective evaluation of resting and contracting pressures during a Kegel maneuver. Subjects underwent a total of 6 intravaginal massage sessions using the Theile “stripping technique.” This technique encompasses a deep vaginal massage via a “back and forth” motion over the levator ani, obturator internus, and piriformis muscles as well as a myofascial release technique whereas a trigger point was identified, pressure was held for 8 to 12 seconds and then released. Patients were then questioned on their subjective improvement in said symptoms.

A total of 90% of patients showed a subjective improvement in frequency and/or nocturia, urgency, and pain. The digital exam showed a marked improvement in the patient’s ability to contract and then relax their pelvic floor musculature.

As a result of the close anatomic proximity of the bladder to its muscular support, it appears that internal vaginal massage can lead to subjective improvement in symptoms of IC. This treatment provides an easy noninvasive method in the ongoing quest to ease the symptoms caused by this disease.

## ICBR-48

### Medical Therapy in Interstitial Cystitis: The Essex Experience

*H. Lewi*

*Broomfield Hospital, Chelmsford, Essex, United Kingdom*

Interstitial cystitis (IC) is a chronic idiopathic inflammatory disorder of the bladder, the treatment of which is often varied and meets with limited success. The etiology of IC is ill understood, and selection of an appropriate nonsurgical treatment option is often disappointing. In recent years there has been greater understanding of the role of H<sub>2</sub> receptor antagonists (H2RA) on the bladder, which include binding to suppressor T cells and preventing release of mast cell histamine, which has encouraged the use of H2RA as a simple oral option in the treatment of IC. Treatment and follow-up in 69 patients with IC treated with H2RA over a 4-year period demonstrated a 74% (51 patients) symptomatic response rate with 34 (67%) patients having complete relief of all symptoms and 17 (33%) having relief of pain only. Recent placebo vs H2RA studies have confirmed the value of H2RA in providing symptomatic relief in patients with IC. In the United Kingdom, Elmiron (sodium pentosan polysulfate) has met with little success, with little difference in symptomatic relief being demonstrated when compared with placebo. In a small study, 17 patients previously unresponsive to oral instillation therapy were treated with a combination of Elmiron + H2RA (cimetidine). Twelve (70%) patients had a good response to therapy over a 22-month period with relief of all symptoms in 6 patients or abolition of pain only in 6 others. Recent understanding of the role of H2RA in IC has encouraged the use of oral therapy in the management of IC and reduced the need for surgical intervention.

## ICBR-49

### Interstitial Cystitis in Males

*R. Indudhara, W. Kubricht, and K. Lloyd*

*Division of Urology, University of Alabama at Birmingham, Birmingham, Alabama, USA*

Interstitial cystitis (IC) is uncommon in males. As a result, little is known about IC in male patients. We retrospectively reviewed male patients treated at our institution over the last 10 years to define the clinical presentation and course of disease in these patients.

We retrospectively reviewed the records of male patients treated for IC at our institution between 1989 and 1998. We identified 51 patients with a diagnosis of chronic cystitis and 44 of these met National Institutes of Health criteria and were included for study. All patients underwent initial detailed history and physical examination, routine blood tests, urinalysis, urine culture, urine cytology, upper tract evaluation if not previously done, urodynamics when indicated, and anesthetic cystoscopy with bladder biopsy.

Mean patient age was 49.5 years (range, 23 to 78 years). There were 6 African Americans in the study group. Mean duration of symptoms before diagnosis was 4.5 years (range, 6 months to 15 years). Seventeen (39%) patients had a prior diagnosis of chronic prostatitis and had received multiple courses of antibiotics and other drugs before diagnosis. Fifteen (34%) patients had undergone transurethral resection of the prostate (TURP) to no avail. Anesthetic cystoscopy revealed glomerulations or more severe inflammatory changes in all patients and Hunner’s ulcers were seen in 4 patients. Most patients experienced some symptom improvement after cystoscopy and hydrodistention with mean duration of improvement of 3 months (6 weeks to 1 year). Patients were treated with a variety of medications, including amitriptyline, hydroxyzine, analgesics, anticholinergics, pentosan polysulfate, and dimethyl sulfoxide either alone or in combination with heparin, steroids, and sodium bicarbonate. Fourteen (32%) ultimately required surgical treatment because of low bladder capacity or

intractable symptoms. One patient developed a positive cytology after initial negative bladder biopsy and cytology. Recurrent tumor after bacille Calmette-Guérin therapy prompted cystectomy and urinary diversion. At a mean follow-up of 26.9 months, 2 (86%) patients are free of bothersome symptoms and 2 have persistent bothersome pelvic pain. The remainder of the patients continue with some form of maintenance medical management, and 8 of 27 (30%) are relatively free of symptoms.

Although IC is far less common in males, the clinical symptoms are similar to those in females. Due to lack of suspicion, however, many patients are misdiagnosed with chronic prostatitis and a substantial number undergo TURP without relief of symptoms. Carcinoma of the bladder must be ruled out in these patients, and continued surveillance with cytology is recommended. A much higher percentage of our male patients require surgical treatment, suggesting that classic IC is the predominant form of disease seen in these patients.

## ICBR-50

### Sacral Nerve Stimulation as a Treatment for Urge Incontinence and Associated Pelvic Floor Disorders at a Pelvic Floor Center: A Follow-Up Study

R. Caraballo, R. A. Bologna, J. Lukban, and K. E. Whitmore

Graduate Hospital, Philadelphia, Pennsylvania, USA; Northeastern Ohio University, Akron, Ohio, USA; and Cooper Hospital/University Medical Center, Camden, New Jersey, USA

Patients with pelvic floor dysfunction often have multisystem complaints, including a combination of overactive bladder, interstitial cystitis (IC), voiding dysfunction, chronic pelvic pain, vulvodynia, overactive bowel, and/or constipation. The purpose of this study was to evaluate our experience in the use of neuromodulation with unilateral sacral foramen electrode (Interstim, Medtronic Corporation, Minneapolis, MN) in patients with predominantly bladder-related symptoms and other pelvic floor disorders.

A total of 17 patients (15 women and 2 men), average of 60.6 years (range, 38 to 81), had a permanent S3 electrode implanted from June 1998 to December 1999 with a follow-up of 3 to 22 months (mean 13.4 months). The primary endpoint was patient perception: 0%, no improvement, failure; 25% improvement, mild failure; 50% improvement, moderate; 75% improvement, significant; >75%, cured. Voiding diary results and programming events were also reviewed.

Sixteen patients (94%) considered the procedure a success and would do it gain. Of the 15 patients with refractory urge incontinence, 3 (20%) were failures, 11 (73%) were markedly improved, and 1 (6.7%) was cured. All 17 patients had urgency, frequency, and pain (IC): 3 (18%) were failures and 14 (82%) had marked improvement. Voiding diaries showed a decrease of >30% frequency on voiding diaries. Of the 10 patients (59%) who had pelvic pain, 3 (30%) had no or minimal improvement, 5 (50%) had marked improvement, and 2 (20%) were cured. The 2 patients (12%) with fecal incontinence reported no improvement. Constipation was present in 5 patients (29%): 1 had no improvement, and 4 had marked improvement. Diarrhea was present in 3 (18%): 1 had <50% improvement and 2 had marked improvement. The mean number of reprogramming events per patient was 9.3 (range, 2 to 22). The highest mean for reprogramming was for those patients with pelvic pain at 15.8. The mean amplitude per patient was 3.1 V (range, 0.7 to 7.2 V). Complications included mild resolved cellulitis in 3 patients (18%), resolved wound dehiscence

in 2 (12%), pain in 1 patient secondary to medial migration to the vertebral column (lateral mobilization of the impulse generator; impedance plethysmography [IPG] is planned), and 1 episode of malfunctioning IPG which required surgical exchange.

Sacral nerve stimulation continues to be an efficacious form of treatment for patients with pelvic floor dysfunction.

## ICBR-51

### The Effect of Manual Physical Therapy in Patients Diagnosed with Interstitial Cystitis, High-Tone Pelvic Floor Dysfunction, and Sacroiliac Dysfunction

J. Lukban, K. Whitmore, S. Kellogg-Spadt, R. Bologna, A. Leshner, and E. Fletcher

The Pelvic Floor Institute, Graduate Hospital, Philadelphia, Pennsylvania, USA

The purpose of this study was to determine the effect of manual physical therapy on symptomatology in patients diagnosed with interstitial cystitis (IC), high-tone pelvic floor dysfunction, and sacroiliac dysfunction as measured by the O'Leary-Sant Interstitial Cystitis Symptom Index and the Modified Oswestry Disability Scale.

This pilot study consisted of 16 female subjects (mean age, 42.5 years; range, 27 to 63) who were diagnosed with IC and high-tone pelvic floor dysfunction. Pelvic floor dysfunction was detected by trigger-point palpation on digital examination by a urologist. Patients were then referred to physical therapy for suspected sacroiliac dysfunction. Each subject was issued an O'Leary-Sant Interstitial Cystitis Symptom Questionnaire and Modified Oswestry Disability Scale before evaluation. These questionnaires collectively evaluate urinary frequency, nocturia, urgency, suprapubic pain, and dyspareunia. Evaluation performed by a certified manual physical therapist included a structural assessment of pelvic alignment in the sitting, standing, supine, and prone positions. Heights of the iliac crests, posterior superior iliac spine, anterior superior iliac spine, pubic tubercles, ischial tuberosities, and inferior lateral angles of the sacrum were evaluated. Active and passive range of motion of the lumbar spine and hips, as well as strength and flexibility of all pelvic and spinal stabilizers were assessed. Palpation for tenderness and increased tone of the surrounding pelvic musculature was identified. Manual therapy included direct myofascial release, joint mobilization, muscle energy techniques, strengthening, stretching, neuromuscular reeducation, and instruction in an extensive home exercise program for a mean of 8.72 visits (range, 2 to 15). All patients were then reissued O'Leary-Sant and Modified Oswestry Questionnaires for comparison.

In all 16 cases, sacroiliac dysfunction was identified. A comparison of pre- and posttreatment Modified Oswestry scores revealed a 94% improvement in dyspareunia. Pretreatment Modified Oswestry scores ranged from 1 to 5, with a mean of 2.75. Posttherapy scores ranged from 0 to 4, with a mean of 0.875. Nine of 16 patients were able to return to pain-free intercourse. A comparison of pre- and posttreatment O'Leary-Sant scores revealed a 94% improvement in symptomatology, with the greatest improvement seen in the indices of frequency and suprapubic pain, and less improvement in urgency and nocturia. Pretreatment O'Leary-Sant scores ranged from 5 to 29 with a mean of 15.75. Posttreatment scores ranged from 1 to 20, with a mean of 8.5.