

## SOCIETY FOR URODYNAMICS & FEMALE UROLOGY (SUFU)

SUFU 2010 Winter Meeting, 23-27 February 2010  
Tampa-St. Petersburg, Florida, USA

Reviewer: Jane Meijlink

This year's SUFU Winter Meeting included many interesting presentations and posters related to interstitial cystitis/painful bladder syndrome and chronic pelviperineal pain, with studies presented on different methods of treating the pain aspect. Abstracts discussed sacral neuromodulation in IC/PBS patients as well as in patients suffering from both bowel and voiding problems; a study was presented on trying intravesical bupivacaine in IC/PBS patients who have failed to respond to intravesical lidocaine; there was a fascinating look at whether patients and their doctors are speaking the same language when it comes to LUTS terminology and what patients think the term urgency means; a study into the efficacy of using vaginal diazepam for pelvic floor dysfunction pain, IC and/or vulvar pain and much more besides.

The full abstracts from this meeting can be found in *Neurourology and Urodynamics, Volume 29, Issue 2, 2010 (DOI 10.1002/nau)*.

Below is a review of selected abstracts presented at SUFU in the field of IC/PBS and chronic pelviperineal pain.

### Poster# BS12

#### IMMUNIZATION WITH SELF UROPLAKIN II CAUSES AUTOIMMUNE CYSTITIS; NOVEL MURINE EXPERIMENTAL AUTOIMMUNE CYSTITIS MODEL.

*Altuntas CZ, Byrne LN, Sakalar C, Gulen MF, Bakhautdin E, Qin J, Li X, Tuohy VK, Daneshgari F.*

In this mouse study, the presenter explained that while we still know little about the pathophysiology of IC, it is hypothesized that defects in the urothelial cell layers may play a role and that an autoimmune mechanism may be involved. The aim of this basic science study was to examine whether immunizing mice to recombinant Uroplakin (rmUPII) would provoke an autoimmune response to bladder urothelium that would be sufficient to create an IC phenotype in mice. The study showed a large immune response in mice immunized with UPII; this response is specific to bladder tissue. There was significant evidence of frequency with decreased volumes of urine voided in EAC (experimental autoimmune cystitis). It was concluded that further characterization of EAC should include evidence for pain and/or afferent hypersensitivity as well as evidence of urothelial cell layer damage.

### Poster# BS13

#### CATHETERIZING INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME (IC/PBS) PATIENTS FOR INTRAVESICAL INSTILLATION: DOES CATHETER SIZE MATTER?

*Ruzimovsky M, Rais-Bahrami S, Donlon K, Moldwin R.*

While IC/PBS patients often complain of urethral pain, they often require frequent catheterization for intravesical treatment. This prospective patient-blinded study with 30 male and female IC/PBS patients of varying ages and backgrounds examined whether the

size (diameter) of catheter use has an effect on the amount of pain felt by the patient during and after instillation treatments. All the patients had previously had multimodal treatment with at least two sessions of intravesical treatment. Two different sizes of catheter were used in the study - 10Fr and 16Fr - on two consecutive visits, two weeks apart. Before catheterization, on each visit lidocaine 2% gel was injected into the urethra. The pain was assessed on a scale of 0-10 1) when the catheter was inserted into the urethra, 2) while the catheter was indwelling in the bladder and 3) immediately followed removal of the catheter. The results led to the conclusion that while the size of the catheter used for intravesical treatment appeared to have no impact on the amount of pain felt by the IC/PBS patient during the indwelling phase, a smaller size was tolerated better by some patients when inserted and also resulted in less pain immediately following withdrawal of the catheter. So this may be worth considering for some patients even though the differences were not really statistically significant.

NB In practice, some patients who self-catheterize have in fact already been choosing to use smaller diameter catheters as they find this more comfortable.

#### Poster# 1

##### THE IMPACT OF CHRONIC NEUROMODULATION ON CO-MORBID BOWEL SYMPTOMS IN PATIENTS WITH VOIDING DYSFUNCTION

*Peters KM, Killinger KA, Kangas JR, Boura JR.*

Many patients have coexisting bladder and bowel problems. The purpose of this prospective neuromodulation database study was to evaluate changes in bowel function in patients undergoing a staged neuromodulation procedure as a treatment for voiding symptoms. The enrolled patients had a history of IBS, constipation, diarrhoea or faecal incontinence and either overactive bladder with or without incontinence, IC/PBS or other disorder e.g. urinary retention. The patients received a tined lead at either the sacral or pudendal nerve, followed by generator implantation. It was concluded from the results that although bladder voiding improved as a result of the neuromodulation, improvement in bowel function was not so clear. More research is now needed to take a closer look at how neuromodulation can affect bowel symptoms that coexist with bladder disorders.

#### Poster# 7

##### DOES BOWEL FUNCTION CHANGE IN IRRITABLE BOWEL SYNDROME PATIENTS UNDERGOING NEUROMODULATION FOR VOIDING DYSFUNCTION?

*Peters KM, Killinger KA, Kangas JR, Boura JA.*

This study looked at the impact of staged neuromodulation on 35 female patients with voiding disorders but with coexisting IBS without faecal incontinence prior to starting neuromodulation. An evaluation was carried out of patients who had improvement in their bladder symptoms after placement of tined leads at the sacral or pudendal nerve and implantation with a permanent generator. Preliminary study data suggest that although voiding symptoms improved, changes in bowel function in IBS patients were less clear, although the average number of diarrhoea episodes per day improved more in sacral than pudendal neuromodulation. While some improvements were seen, more research is needed to explore this potential benefit of neuromodulation more fully.

#### Poster# 12

##### BATTERY LONGEVITY AFTER SACRAL NEUROMODULATION

*Cameron AP, Anger JT, Madison R, Saigal CS, Clemens JQ.*

Sacral neuromodulation is increasingly being used for patients who fail to respond to any medical treatment. The battery life is officially listed as being 7 years (5.5–9.2) years. However, nobody knows how the batteries perform outside manufacturer trials and how many of these devices have to be removed due to inadequate functioning, damage or pain. Based on the results, it was concluded that while few sacral neuromodulation batteries are removed prematurely, IC patients are at very high risk of requiring removal of a battery due to pain or lack of efficacy of the device.

Poster# 19

SACRAL NERVE ROOT NEUROMODULATION FOR THE TREATMENT OF INTRACTABLE PAINFUL BLADDER SYNDROME/INTERSTITIAL CYSTITIS (PBS/IC): 14 YEARS EXPERIENCE OF ONE CENTER

*Gajewski J, Al-Zahrani A.*

The purpose of this retrospective study from Canada with 78 PBS/IC patients (1994-2008) was to evaluate long-term success and tolerability of the sacral neuromodulation (SNM) in the control of painful bladder syndrome/ interstitial cystitis (PBS/IC) symptoms. The researchers found that the presence of urgency was a very good predictor of long-term success. 28% of the devices were removed, mainly due to poor results. Revision rate was 50%, mainly due to lack of stimulation sensation and worsening of symptoms. It was concluded that SNM is an effective chronic treatment of PBS/IC and should be considered if all other medical treatment has failed and before any surgical intervention. While it may be described as safe, the revision rate in these patients is high and lifelong follow-up is necessary.

Poster# 20

EFFICACY OF NEUROMODULATION FOR REFRACTORY INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME

*Lenherr S, Smith G, Bresette J, Stoffel J.*

The aim of this retrospective study (2003-2009) was to evaluate the efficacy of sacral neuromodulation (Interstim) for the treatment of 25 IC/PBS patients who had failed to respond to previous medical treatment. 23 patients went on to second stage implantation. On the basis of the results, it was concluded that in this series of patients neuromodulation for refractory IC/PBS demonstrated an initial statistical improvement in symptom and problem scores after second stage implantation.

However, by 3–12 months the symptom scores returned to close to pre-operative baseline while problem scores remained improved. These findings now need to be validated in a large multi-institution study.

Poster# 79

MENTAL DISTRESS PREDICTS PAIN SEVERITY, PHYSICAL IMPAIRMENT IN INTERSTITIAL CYSTITIS AND CHRONIC PELVIC PAIN

*Baxter C, Bolus R, Lee U, Mayer E, Ackerman D, Rodriguez L.*

This study was aimed at evaluating correlations of mental distress with symptom severity in a selected group of IC/ICPP patients using validated questionnaires. The study population comprised patients with IC/ICPP identified from the Patient Reported Outcomes of Complimentary, Alternative, and Integrative Medicine (PRO-CAIM) database. PRO-CAIM is a web-based database where patients reported their diagnoses and completed on-line validated questionnaires at enrolment and every 3 months for one year while undergoing

their treatments of choice. 223 patients from the USA were evaluated for degrees of mental distress, pain and physical impairment. The study team found that in this group of patients all measures of mental distress correlated significantly with the degree of physical impairment and pain. They concluded that mental distress is highly correlated with the degree of physical symptoms. Not surprisingly, pain severity is highly correlated with coping strategy. Physical impairment is highly correlated to somatisation and panic, but not catastrophizing. However, in this study - contrary to reports from similar studies - neither pain severity nor physical impairment correlated with depression in the regression model.

Poster# 83

**CHRONIC PELVIC PAIN PATIENTS WITH NEUROPATHIC SYMPTOMS DEMONSTRATE POORER MENTAL HEALTH STATUS**

*Saluja SS, George A, Sadek M, Fariello J, Whitmore K, Wehbe S, Moldwin R.*

Based on the experience that visceral pelvic pain syndromes such as interstitial cystitis often present with neuropathic features, the aim of this study from two pelvic pain centres in the USA was to examine the physical and mental health scores of patients with both chronic pelvic pain (CPP) and coexisting neuropathic symptoms. As previous studies have indicated, this study team found that CPP is associated with diminished physical and mental health scores. The results from this study indicated that mental health scores are more profoundly affected in patients with neuropathic pain. The team recommends that future research on neuropathic pain should incorporate measures of quality of life, especially in CPP patients who already have poorer QOL outcomes.

Poster# 84

**LONG-TERM TOLERABILITY AND EFFICACY OF PENTOSAN POLYSULPHATE SODIUM IN THE TREATMENT OF PAINFUL BLADDER SYNDROME/INTERSTITIAL CYSTITIS (PBS/IC)**

*Al-Zahrani A, Gajewski J.*

The purpose of this Canadian study with 271 PBS/IC patients (90% female) from a single hospital was to evaluate the long-term efficacy and tolerability of Pentosan Polysulphate Sodium (PPS) for treating PBS/IC (1994-2008). Included in this study were all patients with bladder pain symptoms and either frequency, urgency or nocturia in the absence of urinary tract infection or any other pathology as per ICS definition. All patients had glomerulations revealed in cystoscopic hydrodistension under general anaesthesia. 93 patients decided to stop taking the medication for various reasons, the most common reason being poor response in 45 patients, drug side effects in 30 patients, resolution of the PBS/IC symptoms in 11 patients and financial reasons in 6 patients. The side effects included gastrointestinal disorders in 23 patients, headache in 6 patients, hair loss in 3 patients, hypersensitivity in 3 patients, and increase in liver enzyme in 2 patients. Patients who had a history of detrusor overactivity or a positive cough leak test during the urodynamic study showed poor results of the PPS for treatment of PBS/IC. This Canadian team concluded that PPS is an effective oral therapy to control symptoms of PBS/IC with long term efficacy and tolerability. More than 63% of these patients continued to take the PPS.

Poster# 86

**EARLY LIFETIME TRAUMA IMPACTS SYMPTOM SEVERITY OF INTERSTITIAL CYSTITIS AND CHRONIC PELVIC PAIN**

*Baxter C, Bolus R, Ackerman D, Mayer E, Rodriguez L.*

This research team was looking at the possible impact of early lifetime trauma occurring < 18 years of age (general, sexual, emotional and total trauma exposure) on symptom severity and quality of life in 223 adults with interstitial cystitis and/or chronic pelvic pain, using the UC LA database of patient reported, validated questionnaires. Based on the results of this study, it was concluded that traumatic events early in life, particularly emotional trauma, significantly affect patient perception of disease and disease severity in IC and/or CPP patients. The researchers felt that identifying and addressing these trauma issues may have a significant effect on the outcome of treatment and that evaluating treatment outcomes could further clarify the impact of trauma in early life.

Poster# 90

DO PATIENTS UNDERSTAND LOWER URINARY TRACT SYMPTOM TERMINOLOGY?

*Cinman N, Herati A, Moldwin R.*

A fascinating study on whether patients and doctors understand each other correctly when discussing lower urinary tract symptoms. One of the reasons behind this was the term 'urgency' which is a symptom associated with a variety of different voiding disorders. The aim of this study was to discover whether patients with a variety of voiding disorders understand terminology for urinary symptoms and to see whether various interpretations of urgency exist within these specific voiding disorders. The 66 patients (35 men, 31 women) who participated included groups with interstitial cystitis/pelvic floor dysfunction, overactive bladder, and benign prostatic hyperplasia. A group of urology patients without voiding disorders served as controls. The patients were invited to complete a questionnaire to assess whether they understood the meaning of a number of terms (frequency, hesitancy, nocturia, incontinence) and specifically to define the term urgency by choosing one of 5 definitions provided.

Results for urgency:

20 of 66: defined urgency correctly (ICS definition) as "the complaint of a sudden compelling desire to pass urine, which is difficult to defer."

21 of 66: defined urgency as "compelling desire to pass urine."

12 of 66: defined urgency as "the need to urinate due to increasing bladder pain/ discomfort/ pressure."

6 of 66: defined urgency as "the desire to urinate often."

4 of 66: defined urgency as "strong need to urinate for fear of urinary leakage."

3 of 66: defined urgency as "persistent desire to pass urine."

The authors concluded that the study showed that urology patients with various different voiding disorders that contain a feature of urgency feel unclear about LUTS terminology, and clearly interpret urgency quite differently. This is clinically important since communication between doctor and patient may consequently be confused and this could potentially lead to a wrong diagnosis.

Poster# 91

INTRAVESICAL BUPIVACAINE FOR LIDOCAINE-REFRACTORY PATIENTS WITH PAINFUL BLADDER SYNDROME/INTERSTITIAL CYSTITIS

*Quillin R, Hooper G, Erickson D.*

While a study from 2009 showed that intravesical lidocaine is better than placebo for painful bladder syndrome/interstitial cystitis (PBS/IC), some patients do not respond to lidocaine. Bupivacaine may be more effective because it is more lipophilic and more potent than lidocaine. Even though bupivacaine has been routinely used for some years either as the only anaesthetic or mixed with lidocaine, no study has so far been published comparing the two. In this study, Quillin and colleagues reviewed their experience with intravesical bupivacaine in PBS/IC patients who had previously failed to respond to intravesical lidocaine. The purpose of the study with 14 women and 1 man was to determine how many lidocaine non-responders would respond to bupivacaine, and to compare the clinical features of bupivacaine responders compared with nonresponders. On the basis of results in this study, it was concluded that bupivacaine should be tried before declaring a patient unresponsive to intravesical local anaesthetic. It was found that good response was more likely in patients without pelvic floor dysfunction.

Poster# 92

THE EFFICACY OF VAGINAL DIAZEPAM USE FOR PELVIC FLOOR DYSFUNCTION PAIN, INTERSTITIAL CYSTITIS, AND/OR VULVAR PAIN: PRELIMINARY DATA

*Carrico DJ, Burks F, Peters KM.*

Carrico and colleagues report that vaginal diazepam is currently being used off-label to help treat pain in pelvic floor dysfunction (PFD), interstitial cystitis (IC) and vulvar pain. They state that the usual dose being prescribed is 5–10 mg of diazepam tablets or compounded hypoallergenic suppositories or creams, used vaginally up to every 8 hours. Pain relief has been reported to be significant, without the side effects commonly found with oral diazepam. Since the authors believe that there have so far been no studies on the safety and efficacy of treatment with vaginal diazepam for the pain experienced in these disorders, the aim of this study with 11 female patients was to produce preliminary data on the efficacy and safety of vaginal diazepam in women with PFD, IC and/or vulvar pain. 64% (7/11) women reported no side effects while 36% reported mild drowsiness. It was significant to note that on the basis of the global response assessment (GRA), 7/11 women (64%) felt that they were moderately or markedly improved. 73% of women believed the vaginal diazepam was “helping,” while 4/11 women reported “no change.” None of the patients reported any worsening of pain. It was concluded that vaginal diazepam may be helpful in treating pelvic floor pain-related conditions. However, larger, randomized-controlled research trials are needed.

Poster# 97

FUNCTIONAL BLADDER CAPACITY AS AN OBJECTIVE MEASURE OF RESPONSE TO INTRAVESICAL DIMETHYL SULFOXIDE FOR THE TREATMENT OF NEWLY DIAGNOSED INTERSTITIAL CYSTITIS

*Gafni-Kane A, Du H, Nguyen A, Vu M, Goldberg RP, Sand PK, Botros S.*

The effect of dimethyl sulfoxide (DMSO) on the functional bladder capacity of female IC patients has until now been lacking in the literature. The purpose of this retrospective study with 15 newly diagnosed patients (with cystoscopy) was to determine whether initial treatment with weekly intravesical DMSO instillations for newly diagnosed IC patients results in a statistically significant increase in functional bladder capacity. Exclusions from this study

were patients with detrusor overactivity and patients taking other pain medication concomitantly and those who had had any prior therapy. It was concluded on the basis of the results that female patients with newly diagnosed IC showed a significant increase in functional bladder capacity following the second week of an initial series of intravesical DMSO treatment. According to the authors, future research will focus on correlating the objective findings from this study with subjective improvements in clinical symptoms reported by the patients.

#### Podium #29

##### SURGICAL INTERVENTION FOLLOWING INTERSTIM SACRAL NEUROMODULATION IMPLANT FOR THE MANAGEMENT OF LOWER URINARY TRACT SYMPTOMS -14 YEARS EXPERIENCE OF ONE CENTER

*Al-Zahrani A, Jerzy Gajewski J.*

The authors note that the reoperation rate for sacral neuromodulation (SNM) remains a concern and that little has been published on this issue. This retrospective study was based on 14 years' experience using SNM. Patient data between 1994 and 2008 was reviewed in order to assess the incidence and cause of reoperation following implantation of SNM. 96 SNM devices were implanted in 88 women and 8 men. Reasons for implantation were painful bladder syndrome/ interstitial cystitis (PBS/IC) (47.9%), urge urinary incontinence (UUI) (35.4%) and idiopathic urinary retention (IUR) (16.7%). The PBS/IC patients had the shortest time to explantation (average 15 months), the reasons being poor results in 12 patients (12.5%), painful stimulation in 6 patients (6.25%) and the stimulation radiating into the leg in 2 patients (2%). The long-term success rate was 87.5%, 84.8% and 73 % in the IUR, UUI and PBS/IC respectively. A total of 39% of the patients needed revision of their SNM implant, the revision rate being highest in IUR (56%), and lowest in UUI (32%). Loss of stimulation in 24 procedures (58.5%) formed the main reason for revision. Other reasons included pain from the pulse generator in 7 patients, painful stimulation in 5 patients and radiation of the stimulation into the leg in 5 patients. The battery had to be changed in 8 patients. The authors concluded that SNM is a minimally invasive procedure with good long-term outcome and observe that the rate of reoperation is improving with today's advances in surgical techniques and equipment.

#### Podium #40

##### THE EFFECTS OF ACUTE AND CHRONIC STRESS ON BLADDER STRUCTURE AND FUNCTION

*Smith A, Leung J, Harper S, Zang R, Raz S, Mayer E, Rodriguez L.*

Smith and colleagues note that stress appears to play a role in the exacerbation of urinary tract disorders including painful bladder syndrome (PBS) and overactive bladder (OAB). This study was performed in order to understand the mechanism behind this. Rats were exposed to water avoidance stress (WAS) – a strong psychological stressor – in order to characterize changes in voiding, anxiety behaviour and bladder pathology. They found that rats exposed to WAS developed a significant increase in voiding frequency and a reduction in latency to void and volume voided. It was concluded that psychological stress results in significant, lasting changes in voiding parameters and that this appears to be related to hypothalamic-pituitary axis activation, expressed in end organ dysfunction and changes in tissue expression and angiogenesis. Similar effects previously reported on the gastrointestinal system together with these findings suggest that this response may be initiated centrally. This rat model may represent a valid tool for studying PBS and OAB.

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