

**AMERICAN UROLOGICAL ASSOCIATION (AUA)
ANNUAL MEETING 2009**

25-30 APRIL 2009, CHICAGO, ILLINOIS, USA

“Applying Knowledge, Improving Lives”

**A REVIEW OF INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME AND
RELATED PRESENTATIONS AT THE AUA 2009 ANNUAL MEETING**

This review is divided into the following sections:

- review of plenary/society presentations,
- review of selected abstracts,
- review of the course on IC/PBS given by Dr Robert Moldwin,
- recommended AUA 2009 webcasts.

The abstract numbers have been given for easy reference to enable you to find the full abstracts in the Journal of Urology, Annual Meeting 2009 Program Abstracts. *Volume 181, Issue 4, Supplement, Pages 1-934 (April 2009)*

It was evident at the AUA this year that a substantial volume of research is in progress both within and around the NIH/NIDDK Multidisciplinary Approach to Pelvic Pain (MAPP) project and that an unprecedented amount of attention is consequently being focused on both IC/PBS and CP/CPPS in the USA, as demonstrated by several plenary presentations, in addition to courses and many poster presentations.

Plenary Sessions:

Late-breaking News Session

“A Re-Look at the Use of Amitriptyline for the Treatment of Interstitial Cystitis: Results of an NIH Clinical Trial”, presented by Philip Hanno, MD

This plenary/late-breaking news session presentation can be viewed on the official AUA 2009 webcasts.

In a late-breaking plenary session presentation by Dr Philip Hanno on behalf of the Interstitial Cystitis Collaborative Research Network on “A Re-Look at the Use of Amitriptyline for the Treatment of Interstitial Cystitis: Results of an NIH Clinical Trial”, Dr Hanno reported that, despite apparently positive recent trial results from Europe with the tricyclic antidepressant amitriptyline, this large NIH clinical trial with 270 patients newly diagnosed with IC and previously untreated failed to show significant benefit ($p=0.12$) of oral amitriptyline compared to placebo in an “intent-to-treat analysis”. However, he emphasized that this result may be due to an inherent problem with intent-to-treat trials rather than the efficacy of the drug.

Amitriptyline is a tricyclic antidepressant which has central and peripheral action; it blocks re-uptake of serotonin, norepinephrine, potentiating the effect of endorphins; it has a sedative effect; it is a potent blocker of H1-histaminergic receptors; it may facilitate bladder storage through stimulation of beta adrenergic receptors in bladder body; it is used at low doses (approx. half the dose used for depression) for many chronic pain syndromes; many trials have suggested efficacy in IC/PBS. Side effects of this drug include cardiac arrhythmias, constipation, dizziness, dry mouth, fatigue, malaise, drowsiness, blurred vision and increased appetite.

The primary objective of this 4-year, multi-centre study was to demonstrate the safety, efficacy and tolerability of oral amitriptyline as a treatment for IC and compare its effect with placebo. The trial was designed with two arms of randomized, newly diagnosed IC patients (who had their current IC symptoms for a period between a minimum of 6 weeks and a maximum of 2 years) and had not received treatment or had received ineffective treatment for no more than a month (“treatment naïve”). This group was chosen because of the potential to optimize response and suggest appropriate initial therapy.

Both groups followed an educational/behavioural modification programme (EBMP). At the randomization visit, all patients were provided with educational material targeting:

- Understanding the bladder and voiding
- How to manage/control symptoms
- Modulating fluid intake
- Dietary triggers that can be avoided
- Bladder training and urge suppression
- Behavioural approach to stress and pain management

One of the two groups additionally received amitriptyline escalated from a dose of 10 mg to 25, 50 or 75 mg daily over a 6-week period. The other group received placebo escalated over a period of 6 weeks and lasting 12 weeks.

According to Dr Hanno, there is an inherent problem running intent-to-treat trials with drugs that have significant side-effects such as amitriptyline because people who can't tolerate it drop out and are counted as failures. While this is the only unbiased way to conduct a study, it doesn't always answer the question the physician and patient ask, namely: “if I can tolerate the medication, what is my likelihood of success?”

At 12 weeks, response rate on the global response assessment was not statistically different for amitriptyline and placebo recipients: 55% and 45%, respectively. However, secondary endpoints showed significant differences favouring amitriptyline on four measures: urinary frequency score, 24-hour voiding frequency, and the O'Leary-Sant Symptom and Problem Indices.

While the intent-to-treat analysis failed to find any statistically significant difference between the drug and placebo (55% response rate for amitriptyline versus 45% for placebo), a secondary analysis indicated that the drug is beneficial for those patients who are able to reach higher doses (25 mg+) and stay on them (71% versus 53% in the placebo arm). It is recommended to start at 10 mg and over a period of weeks

gradually increase the dose to 25 mg or higher. A substantial number of patients who are able to tolerate the higher doses and stay on them may feel a moderate or marked improvement.

In this study, amitriptyline was generally well tolerated: 62% of patients were able to reach and maintain 25 mg/day throughout the study period.

According to Dr Hanno, the study also demonstrated that conservative treatment with education, behavioural modification and dietary changes which both arms of the study received also appeared to have encouragingly beneficial results. However, he stressed that some drug effects may have been masked by the EMBP.

Dr Hanno's recommendation with newly diagnosed patients is to start with conservative treatment before commencing therapy with drugs. If drug treatment proves necessary, amitriptyline is certainly a drug worth considering.

[Explanatory note: An intent-to-treat analysis is the normal clinical trial methodology used by biostatisticians. Basically it means that all people enrolled in a trial are counted at the end of the trial even if they were not available for assessment. In all trials, people drop out for numerous reasons. This means they never get evaluated and those running the trial do not know if the treatment was working or not in these drop-outs. In an "intent-to-treat", everyone enrolled at the start of the trial must be counted. This means that if a person is not evaluated at the end of the trial, he/she is counted as a treatment failure.]

State-of-the-Art Lecture

"The Overlap between Prostatitis and Other Pelvic Pain Syndromes" presented by Kristene E. Whitmore, MD

This Plenary/SOA presentation can be viewed on the official AUA 2009 webcasts.

While chronic prostatitis/chronic pelvic pain syndrome (CP/CPPS) is a common condition affecting more than 2 million men in the USA alone, it can be difficult to diagnose because there are a number of other pelvic pain disorders with similar symptoms. Predominant among these is interstitial cystitis, according to Dr Kristene Whitmore. In this state-of-the-art presentation, she defined CP/CPPS, identified co-morbidities, reviewed overlapping pelvic pain syndromes, defined acute versus chronic pain and described the work-up and management of CP/CPPS.

Common symptoms of CP/CPPS include chronic pelvic pain, sexual dysfunction and lower urinary tract symptoms. It may also include high tone pelvic floor muscle dysfunction which is a state of overactive muscular contraction of pelvic floor muscles, resulting in decreased urine flow rates, obstructed defecation, dyspareunia, pain, anxiety and distress. It can result in pudendal nerve entrapment, explained Dr Whitmore, causing perineal, scrotal or anorectal burning sensation.

Psychosocial factors may include a feeling of helplessness and hopelessness, depression, panic and anxiety. "Sexual, physical and emotional abuse should be ruled out", she said.

While IC is the predominant overlapping disorder, other disorders include scrotal pain, urethral/penile pain, gastrointestinal pain, pelvic floor muscle dysfunction and pudendal neuralgia. The overlap includes epidemiology, pathophysiology, comorbidities, symptoms, work-up and management. Clinical similarities with IC include pain, lower urinary tract symptoms, pelvic floor muscle dysfunction, dietary & stress-related exacerbations and dyspareunia.

In both IC and CP, pain can start acute but after some months become chronic. The inciting event for pain may be trauma, a car accident, surgery, infection and/or inflammation. The pain from these events starts as acute pain, but can then transition to chronic pain. Understanding this is essential to successful treatment.

Cross-sensitization from a diseased pelvic organ to another healthy organ can occur in both disorders.

Dr Whitmore stated that the Multidisciplinary Approach to Pelvic Pain (MAPP) study may provide a better understanding of the degree of overlap and identify biomarkers, risk factors and genetics of urologic chronic pelvic pain syndromes (UCPPS). “We need to think outside the box”, she said and recommended adopting UPOINT clinical phenotyping (see abstract #333) for targeted multi-modal therapy.

Society for Infection and Inflammation

Keynote Presentation:

“Organ Crosstalk in the Development and Progression of Pain in Interstitial Cystitis” presented by David Klumpp, PhD

Severe pelvic pain and voiding dysfunction are key symptoms that cause major morbidity and loss of quality-of-life in IC patients. Although the etiology of IC remains unknown, neural-inflammatory processes involving mast cells have been previously implicated in IC pathogenesis. David Klumpp and his team have employed a combination of murine and cell culture models to dissect mechanisms of pain and inflammation in the bladder associated with mast cell activation. He explained that findings from their studies suggest that bladder-associated pain is modulated by colonic organ crosstalk, whereas prostate-associated pain is not. These observations may also explain the differential sensitivities of IC and chronic prostatitis/chronic pelvic pain syndrome patients to foodstuffs, as recently described by Moldwin and colleagues.

Furthermore, results of their studies suggest multiple therapeutic targets for inhibiting the effects of mast cells in bladder-associated pain and pathology.

“These studies are currently being extended through our participation in the NIH/NIDDK-sponsored Multidisciplinary Approach to Pelvic Pain (MAPP) Network” said David Klumpp. A central hypothesis of the MAPP Network is that IC and CP should be viewed in the context of other regional pain syndromes, such as fibromyalgia, potentially diminishing the causative role for urologic organs in disease pathogenesis in favour of common CNS mechanisms.

“Our focus within the MAPP effort is gender-specific effects of organ crosstalk in pelvic pain”, explained David Klumpp. Brain imaging and cognitive behavioural studies by Schaeffer and Apkarian (see abstract# 332) reveal striking differences between IC and chronic prostatitis patients in region brain activity and cognitive function. “These differences, combined with our organ crosstalk studies in mice and differential food sensitivity studies in IC and CP, suggest that IC and chronic prostatitis are distinct entities. Moreover, these differential spinal and brain findings demonstrate a key role for the urologic organs in pelvic pain”.

Late-breaking News Session

Clinical Phenotyping of Urologic Chronic Pelvic Pain Syndromes (UCPPS): Validation of the “Snowflake Hypothesis” presented by Curtis Nickel, MD

In a plenary late-breaking news session, Dr Nickel from Canada, speaking on behalf of the Phenotypic Management of Pelvic Pain (PMOPP) Research Network, presented a new method of phenotyping (subtyping) IC/PBS and CP/CPSPS, emphasizing that the one thing everyone working with these patients has learnt over the years is that while the patients may superficially seem similar, every patient is in fact a unique individual. He calls this the “snowflake” hypothesis because even though snowflakes all look the same, when you examine their structure under a microscope they are all different. It has also become clear that some treatments work with some patients while other treatments are effective in other patients and that trials with a random selection of these patients are doomed to failure. It is therefore now important to subtype the patients with the aim of finding effective treatment for each subtype and targeting trials to subtypes. He explained that their PMOPP research network has devised a clinical phenotyping strategy, categorizing patients into 6 “UPOINT” domains (categories) of symptoms. **UPOINT stands for the following: Urinary (voiding symptoms), Psychosocial (identifiable psychopathology), Organ specific (prostate/bladder centric), Infection (history of bacteriuria/prostate localization), Neurologic/systemic (associated conditions e.g. IBS, Fibromyalgia etc), Tenderness (of pelvic muscles).** They found in their study that the more categories of symptoms an individual patient had, the worse their total symptom severity was. Symptom duration - but not age - was associated with more positive domains. Significantly increased symptoms were seen in patients who were recorded as positive for the Neurologic/Systemic and Tenderness domains, while these domains along with the Psychosocial domain had the strongest impact on quality of life. In other words, domains which function outside of the bladder or prostate (Psychosocial, Neurologic/Systemic, Tenderness) predict a significant impact on symptoms and quality of life. Dr Nickel and his team concluded that categorizing IC and CP patients using the UPOINT phenotype classification system identifies multiple clinical phenotypes. Planned deep phenotyping studies and biomarker development will hopefully expand these domains further.

Note: See also abstract #333

A review of selected abstracts in numerical sequence:

MODERATED POSTER SESSION 2: INFECTION/INFLAMMATION OF GENITOURINARY TRACT: INTERSTITIAL CYSTITIS

#45

MICRORNAS MEDIATE DOWN-REGULATION OF TACHYKININ RECEPTOR GENE EXPRESSION IN INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME.

Veronica Sanchez-Freire, Fiona C Burkhard, Urs E Studer, Thomas M. Kessler, Annette Kuhn, Katia Monastyrskaya, Bern, Switzerland

In this study in the field of inflammatory mediators, Veronica Sanchez-Freire and colleagues from Switzerland looked at the levels of neurokinin 1 and neurokinin 2 receptors in IC/PBS patients and the role of microRNAs in regulating them. They found that Tachykinin receptors neurokinin 1 and neurokinin 2 are down-regulated in the dome of IC patients. They hypothesize that, in contrast to acute inflammatory states, these findings suggest that continuous exposure to mediators of neurogenic inflammation in patients with IC/PBS induces re-modelling of the receptor signalling complex.

#46

URINARY PROTEOMICS APPROACH TO INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME PATHOPHYSIOLOGY

Young Ah Goo, David R Goodlett, Alvin Y Liu, Claire C Yang, Dedra Buchwald, John N Krieger, Seattle, WA, USA

According to Goo and colleagues, recent advances in proteomics suggest that examination of urine may prove fruitful for unravelling the pathophysiology of IC/PBS. The purpose of this study from Seattle was to look at urinary proteomes from monozygotic (identical) twins in order to determine the value of the urinary proteome for defining IC/PBS phenotypes and to determine promising clinical biomarkers for the future. They identified 144 proteins expressed differentially and found that 14% may be associated with pain. On the basis of the data obtained, they suggest that IC/PBS may be characterized by qualitative and quantitative differences in the urinary proteome. Furthermore, they believe that identification of characteristic pain-associated proteins is consistent with the theory that IC/PBS pathophysiology reflects disruption of urothelial integrity. They suggest that the urinary proteome may provide insights into IC/PBS pathophysiology and identify biomarkers for disease activity.

Explanatory note: A **proteome** is the complete set of proteins produced from the information encoded in a genome, including the modifications made to a particular set of protein, produced by an organism or system. [The term is a blend of the terms “proteins” and “genome”]. **Proteomics** [by analogy with “genomics”] means the qualitative and quantitative study of the proteome under various conditions, including protein expression, modification, localization, and function, and protein-protein interactions, as a means of understanding biological processes.

#47

COMPARISON OF INTRAVESICAL BOTULINUM TOXIN A INJECTIONS PLUS HYDRODISTENTION AND HYDRODISTENTION ALONE FOR TREATMENT OF REFRACTORY INTERSTITIAL CYSTITIS

Hann-Chorng Kuo, Hualien, Taiwan; Michael B Chancellor, Royal Oak, MI, USA

The purpose of this study was to compare the clinical effectiveness of botulinum toxin A (BoNT-A) injections followed by hydrodistention with hydrodistention alone in IC patients. On the basis of data obtained, they concluded that intravesical injections of BoNT-A followed by hydrodistention provided significantly better clinical results compared to hydrodistention alone in patients with IC.

See also:

Comparison of intravesical botulinum toxin type A injections plus hydrodistention with hydrodistention alone for the treatment of refractory interstitial cystitis/painful bladder syndrome. Kuo HC, Chancellor MB. BJU Int. 2009 Mar 30. [Epub ahead of print]. PMID: 19338543

#48

GENE EXPRESSION PROFILES OF BLADDER UROTHELIUM FROM PATIENTS WITH INTERSTITIAL CYSTITIS

Teruyuki Ogawa, Satoshi Seki, Tetsuya Imamura, Yasuhiko Igawa, Osamu Nishizawa, Toshiki Homma, Satoshi Akahane, Nagano, Japan; Yukio Homma, Tokyo, Japan.*

In this study, Ogawa and colleagues investigated the genes that are responsible for ulcerative interstitial cystitis which they felt could be the clue to the etiology of IC/PBS or potential biomarkers for the diagnosis of IC/PBS. The data demonstrate over-expression of genes involved in cell-to-cell communication and signalling, inflammatory disease and cellular development. The research team is of the opinion that these genes might be a potential biomarker for ulcerative interstitial cystitis.

#49

DISTINCT FUNCTIONAL EXPRESSION OF KV4 SUBUNITS IN A-TYPE K⁺ CHANNEL BETWEEN BLADDER-INNERVATING AND SOMATIC DRG NEURONS

Takakazu Yunoki, Kaori Kita, Hiroko Matsuyoshi, Koichi Takimoto, Pittsburgh, PA, USA; Seiji Naito, Fukuoka, Japan; Naoki Yoshimura, Pittsburgh, PA, USA

In a study with rats, Yunoki and colleagues from Japan and USA analysed the action of phrixotoxin2 (PaTx2), a Kv4 channel blocker, on native A-type currents in dorsal root ganglions (DRG) cells as well as expressed Kv4 currents. Their results suggest that Kv4.1 and/or 4.3 subunits are involved in the formation of A-type K⁺ channels in somatic C-fiber DRG neurons, but not in bladder afferent neurons and that, as a therapeutic target for urologic pain syndromes, the Kv4 channel could be a more suitable candidate for somatic pain rather than bladder pain.

#51

INCREASED URINE LEVELS OF NERVE GROWTH FACTOR IN PATIENTS WITH NEUROGENIC OVERACTIVE BLADDER AND INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME

Bruce L Jacobs, Marc C. Smaldone, Vikas Tyagi, Brian J Philips, Stephen V Jackman, Wendy W. Leng, Pradeep Tyagi, Pittsburgh, PA, USA

This team from Pittsburgh USA measured urine nerve growth factor (NGF) levels from patients with and without conditions typically associated with lower urinary tract symptoms (LUTS) in order to examine NGF's role as a potential future biomarker. They found that urinary NGF levels were significantly elevated in patients with neurogenic overactive bladder and IC/PBS and in women with conditions typically associated with LUTS. According to the authors, future studies are needed to further examine the significance of urinary NGF levels and to evaluate whether NGF may become a potential biomarker for specific urologic diseases.

#52

INTRAVESICALLY APPLIED CHONDROITIN SULFATE RESTORES UROTHELIAL BARRIER FUNCTION IN ACID-DAMAGED BLADDER

Troy M Sofinowski, Paul J Hauser, David D Bueth, John A Califano, Daniel J Culkin, Robert E Hurst, Oklahoma City, OK, USA

Chondroitin sulfate (ChS) is an intravesical therapy aimed at replenishing the glucosaminoglycan (GAG) layer in order to restore the barrier function. This treatment is used for IC in Canada and Europe. This study quantifies ChS binding and restoration of the barrier function in acid-damaged rodent bladders. Sofinowski and colleagues concluded that intravesical chondroitin sulphate binds specifically to damaged bladder and restores urothelial impermeability to levels similar to those of controls. Restoration of the barrier function by chondroitin sulfate in this rodent study suggests that it may be useful in the treatment of IC in humans.

#53

PHENOTYPIC ASSOCIATIONS BETWEEN INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME (IC/PBS) AND IRRITABLE BOWEL SYNDROME (IBS), FIBROMYALGIA (FM), CHRONIC FATIGUE SYNDROME (CFS): A CASE CONTROL STUDY

J Curtis Nickel, Dean A Tripp, Kingston, ON, Canada; Michel A Pontari, Philadelphia, PA; Robert M Moldwin, New York, NY; Robert Mayer, Rochester, NY; Lesley K Carr, Toronto, ON, Canada; Ragi Doggweiler, Knoxville, TN; Claire C Yang, Seattle, OR; David Whitcomb, Pittsburgh, PA; Nagendra Mishra, India; Jorgen Nordling, Herlev, Denmark; The Interstitial Cystitis Deep Phenotyping Research Group.

The Interstitial Cystitis Deep Phenotyping Research Group presented data on this case control study in female patients, aimed at characterizing and comparing the impact of clinical phenotypic associations between IC/PBS and controls in relation to three potentially related conditions: irritable bowel syndrome (IBS), Fibromyalgia (FM) and Chronic Fatigue Syndrome (CFS), using biopsychosocial phenotyping questionnaires. This study was carried out at nine centres. The questionnaires were completed by 208 IC/PBS patients and 180 controls. Compared with control participants, patients diagnosed with IC/PBS had significantly more pain, poorer quality of life (mental and physical), sleep disturbance, stress and anxiety, more depression and increased thoughts of hurting themselves, lower perceived social support, poorer sexual functioning, and greater catastrophizing. In the IC/PBS group, 52.4% reported no other associated condition, 23.6% had IC/PBS + IBS only, 2.5% had IC/PBS + FM only, 1.4% IC/PBS + CFS only, while 20.2% had multiple associated conditions. The authors concluded that IC/PBS patients have significant biopsychosocial impairment compared to controls. IBS, FM and CFS are more prevalent in IC/PBS patients and result in significant impact when they occur in combination. There appeared to be progression over time from organ-focused pain to regional and ultimately systemic pain syndrome with increasing symptom severity.

#54

INTRA-TRIGONAL INJECTION OF BOTULINUM TOXIN A IN PATIENTS WITH BLADDER PAIN SYNDROME - RESULTS AT 9-MONTHS FOLLOW-UP

Rui A Pinto, André Silva, Tiago Lopes, João F Silva, Carlos M Silva, Francisco R Cruz, Paulo O Dinis, Porto, Portugal.

Recently an increase in sensory fibers was described in the trigone of IC (BPS) patients. This study aimed to evaluate efficacy and tolerability of intra-trigonal injection of BoNT-A in 17 patients (16 women + 1 man) who had failed to respond to standard therapy. All patients reported subjective improvement. According to the authors, this study demonstrates that intra-trigonal injection of 100 U of BoNT-A in refractory IC(BPS) patients is safe, produces good results in terms of pain and frequency and might be an effective alternative treatment and lead to fewer retention problems with this treatment.

#55

EFFECTS OF HERPES SIMPLEX VIRUS VECTOR-MEDIATED ENKEPHALIN GENE THERAPY ON BLADDER OVERACTIVITY AND NOCICEPTION

Hitoshi Yokoyama, Chikashi Saitoh, Minoru Miyazato, Pittsburgh, PA; Osamu Nishizawa, Matsumoto, Japan; Michael B Chancellor, Royal Oak, MI; William F Goins, James R Goss, Joseph C Glorioso, Naoki Yoshimura, Pittsburgh, PA, USA.

In this study with rats, Yokoyama and colleagues examined the effects of gene therapy using NP2 which is a newly engineered replication-deficient herpes simplex virus (HSV) vector expressing human proenkephalin (hPPE), on bladder

overactivity and nociceptive responses induced by intravesical resiniferatoxin (RTX). The authors are of the opinion that the results indicate that HSV vector-mediated enkephalin reduces hyperactivity of the bladder via opioid receptor in the spinal cord and blocks nociceptive responses after RTX administration into the bladder. Consequently, enkephalin gene therapy could be a potential treatment for urinary frequency and bladder pain in patients with IC/PBS.

#56

PREVALENCE OF INTERSTITIAL CYSTITIS/ PAINFUL BLADDER SYNDROME IN THE UNITED STATES

Sandra H. Berry, Santa Monica, CA; Michael A. Stoto, Washington, DC; Marc Elliott, Marika Suttorp, Laura Bogart, Santa Monica, CA; Paul W. Eggers, Leroy M Nyberg, Jr, Bethesda, MD; J. Quentin Clemens, Ann Arbor, MI, USA

The RAND Interstitial Cystitis Epidemiology (RICE) study is the most extensive epidemiological study ever carried out to date. It was designed to develop an epidemiologic definition of IC/PBS and to use that definition to estimate the prevalence of IC/PBS in women in the USA.

Definition	Criteria	National Prevalence Estimate (95% confidence Interval)
High Sensitivity	Pain: During the past 3 months, have you ever had a feeling of pain, pressure or discomfort in your lower abdomen or pelvic area? (Yes, No) Frequency: During the past 3 months, how many times on average have you had to go to the bathroom to urinate during the day when you are awake? 10+ Urgency1: During the past 3 months, have you had a strong urge or feeling that you had to urinate (or "pee") that made it difficult for you to wait to go to the bathroom? (Yes, No) Urgency2: Would you say that this urge to urinate is mainly because of pain, pressure or discomfort, or mainly because you are afraid you will not make it to the toilet in time to avoid wetting? (Pain, pressure, discomfort; or Fear of wetting) Note: A positive response to the pain question plus either the frequency question or both of the urgency questions is required	6.5% (6.1 to 6.8%)
High Specificity	Pain1: During the past 3 months, have you ever had a feeling of pain, pressure or discomfort in your lower abdomen or pelvic area? (Yes, No) Pain2: As your bladder starts to fill does your feeling of pain, pressure, or discomfort usually: (get worse, get better, or stay the same) Frequency: See above Urgency1: See above Urgency2: See above UTI: Did all of your symptoms disappear (each time) after you took antibiotics? (Yes, No) Endometriosis: Did you ever have hormone injections (such as depolupron) to treat endometriosis? (Yes, No) Note: A positive response to both pain questions plus either the frequency question or both of the urgency questions is required. In addition, negative responses to the UTI and endometriosis questions are required	2.7% (2.5 to 2.0%)

Source: RAND Interstitial Cystitis Epidemiology (RICE) study

The study was divided into the following stages:

- Development of a symptom-based case definition of IC/PBS for epidemiological research by an expert panel;
- Validation of definition in physician diagnosed cases;
- Conducting telephone population screening of a national probability sample of women in the US;
- Calculation of an estimate of prevalence of symptoms of IC/PBS.

The initial preparatory part of the study (including arriving at a preliminary symptom-based IC/PBS case definition followed by interviews with a group of 599 adult women) resulted in a High Sensitivity definition (sensitivity 81%, specificity 54%) and a High Specificity definition (sensitivity 48%, specificity 83%). The study team then conducted a two-stage population screening survey over a period of a year. The first stage comprised a telephone survey for one year of approximately 2000 households per week. Households identified as having one or more women with possible IC/PBS were then invited to RAND for more intensive screening using the case definition as shown in the table above which also includes the results. The study shows that approximately 3-6% of women in the USA (aged 18 years or older) have symptoms suggestive of IC/PBS.

#57

URINE LEVELS OF SELECTED CHEMOKINES POSITIVELY CORRELATE WITH LOWER BLADDER CAPACITY AND PSYCHOMETRIC SCORES IN IC/PBS PATIENTS

Pradeep Tyagi, Dmitriy Nikolavsky, Royal Oak, MI; Yoram Vodovotz, Derek Barclay, Pittsburgh, PA; Vikas Tyagi, Kenneth M Peters, Michael B Chancellor, Royal Oak, MI, USA

This study by Tyagi and colleagues, based on past histological evidence of angiogenesis, mast cell, macrophage and lymphocyte infiltration and mediation by growth factors and chemokines in inflammatory processes, was aimed at testing the hypothesis as to whether elevated levels of the specific chemokines correlate with the increased severity of symptoms in the IC/PBS patient. They concluded that the association of elevated PDGF, IP-10 and MCP-1 levels with lower bladder capacity and increased psychometric scores suggests that they may be useful in stratifying patients according to the severity of their symptoms. In addition, the authors conclude that urine levels of PDGF, IP-10 and MCP-1 can be objective markers of disease progression and also help select a well characterized patient population that can potentially benefit from treatment focused on the bladder.

Explanatory note:

PDGF: platelet derived growth factor

IP-10: interferon- γ inducible protein

MCP-1: monocyte chemotactic protein-1

#58

POTENTIAL THERAPEUTIC EFFECT OF ALL-TRANS-RETINOIC ACID FOR INTERSTITIAL CYSTITIS.

Courtney Harris, Xu Cheng, Monica Liebert, Ann Arbor, MI, USA*

Previous studies have indicated that some patients with IC produce antiproliferative factor (APF) which inhibits urothelial cell production of heparin-binding epidermal growth factor (HB-EGF). Furthermore, HB-EGF levels have been reported to be lower in urine from patients with interstitial cystitis. The addition of exogenous HB-EGF can rescue urothelial cells in culture from the effects of APF. This study was therefore aimed at determining whether treatment of urothelial cells with all-trans-retinoic acid (ATRA), a differentiation-inducing retinoid, could increase HB-EGF expression.

The authors concluded that treatment with ATRA increased expression of HB-EGF produced by urothelial cells. While HB-EGF levels in urine from IC patients are not consistently low, a subset of IC patients do appear to have much lower HB-EGF

levels. According to the authors, these results suggest that ATRA should be explored for possible therapeutic value in interstitial cystitis.

#59

INHIBITION OF ANTIPROLIFERATIVE FACTOR (APF) ACTIVITY IN BLADDER EPITHELIAL CELLS BY TWO SYNTHETIC APF DERIVATIVES

Susan Keay, Chen-Ou Zhang, Baltimore, MD; Piotr Kaczmarek, Christopher Michejda, Joseph J Barchi, Jr, Frederick, MD, USA

A further update by Susan Keay and colleagues on their investigations in the field of antiproliferative factor. Bladder epithelial cells from IC/PBS patients make a small glycopeptide antiproliferative factor or "APF" (GalGalNAc-TVPAVVVA) that inhibits cell growth, decreases tight junctions, and increases paracellular permeability. The authors screened inactive synthetic APF derivatives for their ability to inhibit APF in normal bladder cells, and then determined the ability of two inhibitory derivatives to normalize tight junction protein gene expression, paracellular permeability, and/or proliferation of IC/PBS cells. They concluded that APF derivatives GalGalNAc-TV(D-pipecolic acid)AAVVVA and GalGalNAc-TV(D-proline)AAVVVA can inhibit APF activity in bladder epithelial cells in vitro. Additional experiments are planned to determine which agent is better for development as a potential IC/PBS therapy.

#60

DIFFERENCES IN FOOD SENSITIVITIES BETWEEN FEMALE INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME (IC/PBS) AND CHRONIC PROSTATITIS/CHRONIC PELVIC PAIN SYNDROME (CP/CPPS) PATIENTS

Amin S Herati, New Hyde Park, NY; Barbara Shorter, Brookville, NY; Julia Tai, Martin Lesser, Robert M Moldwin, New Hyde Park, NY, USA

More interesting data from the food sensitivity team: this time looking at the differences between IC/PBS patients and CP/CPPS patients, reporting that so far little has been known about food sensitivities in CP/CPPS patients. This study based on a validated questionnaire containing a list of 175 individual food and drink items was aimed at comparing food sensitivities between 325 IC/PBS patients (32% response) and 286 CP/CPPS patients (34% response) and also to determine the association between food sensitivity and the characteristic clinical features of these two disorders. In those who responded, a significant difference was seen in food sensitivity levels: 94.8% of the IC/PBS patients versus 77.1% of the CP/CPPS patients. Food and drink that caused most bother were identical in both patient groups. Coffee caused the most problem, followed by tea, alcohol, citrus fruits, spicy foods/hot peppers and tomato products. Food found to most alleviate the symptoms in both groups included Prelief® (acid fighter to take acid out of food), Colace® (a stool softener) and Metamucil® (psyllium dietary fibre supplement).

The team concluded that while there is a high prevalence of food sensitivity in both IC/PBS and CP/CPPS patients, IC/PBS patients are more likely than CP/CPPS patients to have food and drink sensitivity. A further conclusion is that dietary changes should be considered one of the cornerstones of IC and CP treatment.

#61

URINE ALKALINIZATION IMPROVES THE PROBLEMS OF PAIN AND SLEEP IN PATIENTS WITH INTERSTITIAL CYSTITIS

Tomohiro Ueda, Masayuki Nakagawa, Motohiro Okamura, Hideki Tanoue, Kyoto, Japan; Naoki Yoshimura, Pittsburgh, PA, USA.

Ueda and colleagues took a look at urine alkalization in this study of 50 patients (screened from an original 76), for the purpose of evaluating the efficacy of the use of citrates as a urine alkalinizer for the treatment of IC patients. They concluded that urine alkalization using citrates could be effective in reducing symptoms, especially pain at voiding and sleep disturbance in IC patients.

#62

SUCCESS OF ACUPUNCTURE IN THE TREATMENT OF PAINFUL BLADDER SYNDROME (INTERSTITIAL CYSTITIS)

Felicity A Reeves, Christopher R Chapple, Mike Pullman, Sheffield, United Kingdom*

The objective of this study from the United Kingdom was to determine how effective acupuncture is in reducing symptoms and improving quality of life in a group of 15 patients who had failed to respond to conventional conservative therapy. No complications from the treatment were documented for any of the patients. The authors report that acupuncture was successful in 100% of the patients in terms of symptoms improvement. 86% stated that they felt an improvement in their quality of life. It would now be useful to see a follow-up study on a much larger scale.

#63

DIFFERENTIAL GENES EXPRESSION IN UROTHELIUM FROM HEALTHY CATS AND CATS WITH BLADDER PAIN SYNDROME/INTERSTITIAL CYSTITIS

Ping Lu, Judi Stella, C A Tony Buffington, Columbus, OH, USA.

In a study with domestic cats,

Domestic cats suffer a syndrome (Feline IC - FIC) similar to bladder pain syndrome/interstitial cystitis (IC) in humans, meeting all the NIDDK inclusion and exclusion research criteria that can be applied to animals. Early life epigenetic modification of gene expression may increase risk for a variety of diseases in later life. The authors report that in order to start an investigation into epigenetic differences in cats with FIC, they used PCRSelect™ Subtraction service (Clontech Laboratories, Inc.) to compare gene expression in the urothelium of healthy cats and cats with IC. They identified a number of differentially expressed genes in urothelium from healthy cats and cats with FIC, including the genes for glucocorticoid synthesis. Further testing by real time RT-PCR will be performed to validate the current findings.

#64

THE EFFECT OF CHINESE HERBAL MEDICINE CONTAINING ACONITINE ON THE PAIN RELIEF IN INTERSTITIAL CYSTITIS PATIENTS - A PRELIMINARY STUDY.

Takayuki Tsuchida, Tatsuya Miyamoto, Takashi Yamagishi, Satoru Kira, Kenji Kayanuma, Yaburu Haneda, Hideki Kobayashi, Hidenori Zakoji, Isao Araki, Masayuki Takeda, Chuo, Japan*

Aconitine is a highly poisonous alkaloid derived from various species of aconite. It is a neurotoxin that opens TTX-sensitive Na⁺ channels in the heart and other tissues. Aconite has long been used in the traditional medicine of Asia (India, China and Japan). Some types of Chinese herbal medicine containing Aconitine are known to have an analgesic effect. The purpose of this study was to evaluate the pain-killing effect of Chinese herbal medicine containing Aconitine. Two types of Chinese herbal medicine: Keisikajutsu-buto, and Mao-bushi-saisinto were evaluated in 10 IC patients who had failed to respond to usual medication. The authors concluded from their results that these two types of Chinese herbal medicine containing Aconitine

(Keisika-jutsu-buto, and Mao-bushi-saisinto) may be effective in relieving pain in IC patients.

GENERAL & EPIDEMIOLOGICAL TRENDS & SOCIOECONOMICS: OUTCOMES, PRACTICE PATTERNS, QUALITY OF LIFE, COST-EFFECTIVENESS (III)

#243

HEALTH-RELATED QUALITY OF LIFE IMPACT OF INTERSTITIAL CYSTITIS/ PAINFUL BLADDER SYNDROME AND OTHER SYMPTOMATIC PELVIC DISORDERS

Sandra H. Berry, Santa Monica, CA; Ron D. Hayes, Los Angeles, CA; Marika Suttorp, Santa Monica, CA; Leroy M Nyberg, Jr, Bethesda, MD; J. Quentin Clemens, Ann Arbor, MI

The aim of this study was to compare the health-related quality of life (HRQOL) of women with interstitial cystitis/ painful bladder syndrome (IC/PBS) to other pelvic disorders with overlapping symptoms. 599 women with diagnoses of IC/PBS, endometriosis, vulvodynia, and overactive bladder (OAB) were recruited from the clinical practices of 8 urologists and 15 gynaecologists from across the USA with recognized expertise in the diagnosis and management of these conditions. These women completed a telephone interview about their current symptoms and medical history. Results were compared across the four conditions for 370 cases that had complete data on diagnoses, met eligibility criteria, and had only a single diagnosis. The results showed that women being seen by physicians for diagnoses of IC/PBS report significantly lower scores in all areas of health-related quality of life compared with all USA women and women with conditions that overlap in terms of symptoms. Pain and social functioning are areas of health-related quality of life that are most significantly affected by IC/PBS compared with all adult females. Role functioning due to physical health and general health perceptions are also negatively affected among women being seen by physicians for diagnoses of IC/PBS. Despite treatment, IC/PBS patients are experiencing decreased health related quality of life.

It was therefore concluded that HRQOL scores for IC/PBS patients were significantly lower (worse) than the general U.S. population and were consistently worse than scores for the other conditions. The lowest scores for IC/PBS patients were observed for social functioning, bodily pain and role limitations due to physical problems (each of these scores was at least one standard deviation lower than the general population in the USA). These findings underscore the dramatic impact that IC/PBS has on the daily activities and well-being of these patients.

Explanatory note: SF-36 = short form health survey with 36 questions
HR-QOL: health-related quality of life

#247

UROSTOMY AND QUALITY OF LIFE IN PATIENTS WITH DISABLING LOWER URINARY TRACT DYSFUNCTION – A PROSPECTIVE STUDY

Alexander Schultz, Birgitte Boye, Oslo, Norway; Olof Jonsson, Gothenburg, Sweden; Peter Thind, Copenhagen, Denmark; Wiking Mansson, Lund, Sweden*

While urinary diversion may be an option in patients with disabling lower urinary tract dysfunction who have failed all other treatment, it involves major surgery. The aim of this study was to evaluate whether urostomy improves quality of life in these patients and the cost of surgery in terms of complications and hospital stay. 52 patients, 9

men and 43 women were included in this study: 12 with multiple sclerosis, 11 with spinal cord injury, 8 with interstitial cystitis, 6 with detrusor overactivity, 3 with myelomeningocele, and 12 with other disorders. 26 patients received an ileal conduit and 26 a continent cutaneous diversion. The patients improved in all areas except for social relationship on the generic quality of life instrument and in all areas on the disease specific quality of life instrument from baseline to 12 months follow-up. The improvement was reported during the first 6 months, with no further improvement after that. While there were no significant differences in the level of improvement between patients with a different diagnosis, men improved more than women on the general psychological dimension on quality of life. There was no difference in improvement between patients with conduits and patients with continent reservoirs. It was concluded that urostomy improves both general and disease specific quality of life in patients with disabling lower urinary tract dysfunction, but the risk of complications is not negligible.

INFECTION/INFLAMMATION OF GENITOURINARY TRACT: PROSTATE AND GENITALIA (II)

#332

BRAIN ACTIVITY FOR SPONTANEOUS FLUCTUATIONS OF PAIN IN UROLOGIC PELVIC PAIN SYNDROME

Anthony J Schaeffer, Elle L Parks, A. Vania Apkarian, Chicago, IL, USA

Urologic chronic pelvic pain syndromes (CPPS) comprise interstitial cystitis (IC) and chronic prostatitis (CP). Recent studies indicate that brain activity in chronic pain can be studied specifically and seems to engage distinct brain regions in various clinical conditions. This very interesting study by Schaeffer and colleagues from Chicago is using functional magnetic resonance imaging (fMRI) to examine brain regions activated in CPPS and IC for spontaneous pain. They report that the spontaneous pain of CPPS appears to have a unique temporal variability property that can be differentiated from other types of pain. It also appears to be primarily localized to bilateral anterior insula and anterior cingulate. The reported results are preliminary and the research group is currently recruiting a much larger group of CPPS patients. However, according to the authors, these results are the first demonstration of brain properties for chronic spontaneous pain in CPPS and may even be a potential way of distinguishing between CP and IC in male patients. This was a preliminary study and a larger cohort of CPPS patients is now being recruited.

#333

CLINICAL PHENOTYPING OF CHRONIC PROSTATITIS/CHRONIC PELVIC PAIN SYNDROME PATIENTS AND CORRELATION WITH SYMPTOM SEVERITY

Daniel A Shoskes, Cleveland, OH; J Curtis Nickel, Kingston, ON, Canada; Robert Dolinga, Dona Prots, Cleveland, OH, USA.

Chronic Prostatitis, or Chronic Pelvic Pain Syndrome (CPPS), is a heterogeneous syndrome with variable response to treatment. Shoskes and colleagues have proposed a clinical phenotype system (UPOINT) to classify patients with urologic pelvic pain in order to help understand etiology and guide therapy. They wish to validate this system in men with CPPS and to determine whether the type and number of domains correlate with symptom severity. According to the authors, applying the UPOINT system to CPPS patients discriminates clinical phenotypes that allow hypothesis testing for etiology and therapy. The number of positive domains

correlates with symptom severity and duration of symptoms increases the number of domains. Since each domain has specific targeted therapies, this team proposes that multimodal therapy may best be guided by the UPOINT phenotype.

Explanatory note:

UPOINT = urinary, psychosocial, organ specific, infection, neurologic/systemic, and tenderness.

#334

ARE PROSTATITIS SYMPTOMS IN ADOLESCENT MEN DETERMINED BY CULTURE?

Dean A Tripp, J Curtis Nickel, Jennifer Pikard, Annie Hsieh, Jessica Ginting, Kingston, ON, Canada

Tripp and colleagues from Canada compared the prevalence and impact of chronic prostatitis-like symptoms in white Canadian and black African Kenyan adolescents. They found that CP-like symptoms are common, have significant impact on quality of life and do not appear to be related to age, ethnicity and culture.

#335

COMPARISON OF SYMPTOMS IN NEWLY-DIAGNOSED VS CHRONIC-REFRACTORY PATIENTS WITH CHRONIC PROSTATITIS/CHRONIC PELVIC PAIN SYNDROME (CP/CPPS)

J Curtis Nickel, Kingston, ON Canada; Richard B Alexander, Baltimore, MD; Rodney U Anderson, Stanford, CA; Richard Berger, Seattle, WA; William L Duncan, Jackson, MS; John N Krieger, Seattle, WA; Mark S Litwin, Los Angeles, CA; Mary McNaughton-Collins, Boston, MA; Michel A Pontari, Philadelphia, PA; Anthony J Schaeffer, Chicago, IL; Daniel A Shoskes, Cleveland, OH; J. Richard Landis, Philadelphia, PA; John W Kusek, Leroy M Nyberg, Bethesda, MD; Shannon Chuai, Philadelphia, PA; The Chronic Prostatitis Collaborative Research Network.

Presenting data from the Chronic Prostatitis Collaborative Research Network (CPCRN), JC Nickel reported that two quite different groups of CP/CPPS patients had been enrolled into CPCRN randomized clinical trials comparing alfuzosin (group diagnosed within the last 2 years and relatively little treatment) or pregabalin (more chronic patients, heavily pre-treated) compared with placebo therapy. Baseline characteristics of these two patient groups were compared in order to gain insight into potential factors associated with CP/CPPS symptom progression. The authors concluded that the duration of symptoms in CP/CPPS may be associated with cognitive progression but not physical progression. Symptom duration is negatively associated with pain, quality of life (particularly mental QoL), anxiety and depression. The duration of symptoms is not associated with urinary, physical and sexual functioning. Early identification and therapy may prevent this apparent cognitive progression associated with symptom duration.

#339

MEMANTINE IN THE ALLEVIATION OF SYMPTOMS OF CHRONIC PELVIC PAIN SYNDROME: A RANDOMIZED, DOUBLE-BLIND PLACEBO-CONTROLLED TRIAL

Jordan D Dimitrakov, Boston, MA; Jean Chitalov, Ivan Dechev, Plovdiv, Bulgaria

Dimitrakov and colleagues reported on a study from Bulgaria with memantine. Recently it has been considered possible that CPPS may be a central pain syndrome and N-methyl-D-aspartate (NMDA)-receptor mechanisms have been implicated in the generation of symptoms of CPPS. The purpose of this study was to evaluate the efficacy and safety of memantine, a noncompetitive N-methyl-D-aspartate (NMDA)-receptor blocker which is used in treating Alzheimer's disease, in the alleviation of CPPS symptoms in 170 men with CPPS. The authors concluded from the results that

memantine appears safe and effective in the alleviation of symptoms of CPPS in men. Future studies are needed to confirm this and to evaluate long-term treatment outcomes with larger numbers of patients.

#340

A RANDOMIZED PLACEBO-CONTROLLED MULTICENTER TRIAL OF PREGABALIN FOR THE TREATMENT OF MEN WITH CHRONIC PROSTATITIS/CHRONIC PELVIC PAIN SYNDROME

Michel A Pontari, Philadelphia, PA; John N Krieger, Seattle, WA; Mark S Litwin, Los Angeles, CA; Paige C White, Jackson, MS; Rodney U Anderson, Palo Alto, CA; Mary McNaughton-Collins, Boston, MA; J Curtis Nickel, Kingston, ON Canada; Daniel A Shoskes, Cleveland, OH; Richard B Alexander, Baltimore, MD; Robert B Nadler, Chicago, IL; Michael P O'Leary, Boston, MA; Scott Zeitlin, Los Angeles, CA; Shannon Chuai, J. Richard Landis, Philadelphia, PA; John W Kusek, Leroy M Nyberg, Bethesda, MD; Anthony J Schaeffer, Chicago, IL; The Chronic Prostatitis Collaborative Research Network(CPCRN)

Since growing evidence suggests that the urogenital pain of CP/CPPS may be neuropathic in origin, this study with a total of 324 randomized men was aimed at determining whether pregabalin is effective in treating the symptoms of CP/CPPS. Based on the primary endpoint, 6 weeks of treatment with pregabalin was not superior to placebo for treating symptoms of CP/CPPS. However, the impressive differences in secondary endpoints suggest that pregabalin may prove effective in some men with long-standing CP/CPPS.

URODYNAMICS/INCONTINENCE/FEMALE UROLOGY: NEUROGENIC VOIDING DYSFUNCTION

#942

THE ROLE OF SENSORY PATHWAYS IN THE DEVELOPMENT OF CROSS-SENSITIZATION BETWEEN THE URINARY AND GASTROINTESTINAL SYSTEMS

Anna P Malykhina, Jessica A Gonzalez, Glenolden, PA

The high level of comorbidity seen among urinary and gastrointestinal disorders suggests that overlapping mechanisms may underlie both bowel and urinary bladder disorders. The purpose of this study was to test the hypothesis that colonic inflammation can modify the function of the urinary bladder via changes in the expression of sodium channels as well as due to a release of pro-inflammatory neuropeptides in the latter. The method used was experimental, chemically-induced inflammation of the colon. According to the authors, the data obtained provides evidence that experimental colitis may affect the function of the urinary bladder.

URODYNAMICS/INCONTINENCE/FEMALE UROLOGY: NON-NEUROGENIC VOIDING DYSFUNCTION (I)

#1506

INTRAVESICAL LIPOSOMAL (LP08) INSTILLATION PROTECTS BLADDER UROTHELIUM FROM CHEMICAL IRRITATION

Jonathan Kaufman, Pittsburgh, PA; Pradeep Tyagi, Michael B Chancellor, Royal Oak, MI*

Previous studies on intravesical liposomes (LP08) have demonstrated therapeutic effects in protamine sulphate-induced hyperactive bladder. In this histological rat

study, Kaufman and colleagues studied the hypothesis that LP08 acts as a protective urothelial coating to reduce PS-induced injury. Anaesthetized female Sprague Dawley rats were first treated with intravesical protamine sulphate followed by either 0.5ml saline or LP08 for 30 min. Representative bladder sections harvested showed that rats treated with LP08 had relatively intact bladder linings while those treated with saline showed significant damage. According to the authors, this study indicates that intravesical liposomes can act as a protective, urothelial coating and that simple intravesical instillation of liposomes may be an effective treatment for lower urinary tract symptoms.

URODYNAMICS/INCONTINENCE/FEMALE UROLOGY: FEMALE UROLOGY (I)

#1532

Instillation of Botulinum A Toxin (BTX)/Dimethyl Sulfoxide (DMSO) Bladder Solution for the Treatment of Voiding Dysfunction Secondary to Detrusor Overactivity (DO) in Women: A Phase I/II Study.

Steven P Petrou, David D Thiel, Alexandra E Rogers, Alexander S Parker, Julia E Crook, Jacksonville, FL*

Until now, women with detrusor overactivity have been treated with BTX in the form of injections into the detrusor muscle. This phase I/II trial evaluated the safety and efficacy of instilling a 2-drug solution comprising botulinum toxin A plus dimethyl sulfoxide (DMSO) into the bladder via a catheter. 25 women with urodynamically confirmed detrusor overactivity (DO) and who had failed at least two anticholinergic therapies were enrolled for the study.

The first 3 patients were given a 66% dose of solution. The remaining 22 patients received the full 300 units of Botox and 50 cc of DMSO (50% concentration). Adverse effects were evaluated up to three months after treatment. There were no serious adverse events or clinically significant increases in post void residuals. The authors are of the opinion that direct instillation of BTX/DMSO solution is a safe and promising treatment for women with DO. The following phase III of the study will comprise a randomized, placebo controlled trial.

Course 74MC Plus

Interstitial Cystitis/Painful Bladder Syndrome & Related Conditions: Practical Management Strategies, presented by Robert Moldwin, MD

(The handout for this Course with all slides is available on the AUA 2009 website)

Practical management strategies - how to treat your IC patients – are exactly what the physicians really want to know and is the reason why so many of them were willing to get up at the crack of dawn to attend a course that started at 6am!

Diagnosis

Once they have a patient with typical symptoms of IC, the first step for clinicians is to exclude all other identifiable disorders which could be causing the symptoms. This is essential because there is still no diagnostic test or biomarker for IC. “Identify other pain generators”, he further emphasized. It is also possible to carry out confirmatory testing to establish the bladder as a source of the symptoms. He explained the use of intravesical anaesthetics for the diagnosis of bladder-based pain. The solution should

be held in the bladder for 15-30 minutes. If there is then no pain, the bladder is the source of the pain. If the pain continues, the source of the pain is unclear and it may be coming from another source.

History taking is of paramount importance, along with a detailed physical examination and laboratory testing. On the subject of questionnaires and IC/PBS: while they are useful to document symptoms and quality of life, and also to document the patient's progress, they are not helpful or recommended for making a diagnosis.

Treatment

Moving on to treatment, Dr Moldwin explained that scientific literature has severe limitations where treatment is concerned, since there have been very few randomized trials, many opinions and hypotheses but little scientific data and that a further problem is created by the multifactorial aspect. Treatment should be a multi-disciplinary team approach and in addition to the urologist may need to involve gynaecologists, rheumatologists, pain clinics, psychologists, physical therapists, nutritionists as well as primary care.

- Conservative and self-help

Conservative measures and self-help include behaviour modification, diet modification, bladder retraining, physical therapy/yoga, herbal therapy, biofeedback/electrical stimulation, acupuncture, warm baths/heating pads.

- Oral

In the USA, the 3-pronged cornerstone of oral medication is: pentosan polysulfate sodium (PPS), amitriptyline and hydroxyzine. These are often used in combination as multimodal starting therapy.

- Intravesical

Intravesical therapy has the advantage of having little or no systemic side effects. Dr Moldwin's coverage of intravesical therapy in this course included anaesthetic cocktails which can bring immediate relief to a patient who is in great pain and may have prolonged effects. Cocktail recipes are included in the AUA course handout. He explained the use of botulinum toxin in great detail, with a warning that there are several different products on the market and that dosage is not equivalent between products. The most recent study with botox presented at the AUA this year concerns injection into the trigone alone (see abstract #54). This may avoid retention problems that some patients have experienced.

Treatment for pelvic floor dysfunction included trigger point therapy with injections into the trigger points using dry needle, botulinum toxin A or anaesthetics.

Transvaginal/Transrectal Therapy

Dr Moldwin stressed that this, like so many other treatments for IC/PBS, is off label. He recommended diazepam suppositories, amitriptyline cream, gabapentin cream, lidocaine.

Surgery

Dr Moldwin's outline of all forms of surgical intervention included hydrodistension, sacral neuromodulation, supratrigonal cystectomy, emphasizing that enterocystoplasty is NOT RECOMMENDED for IC/PBS. He also discussed

transurethral surgery such as fulguration and laser for lesions with excellent practical tips for use of the YAG laser.

Take-home message:

Dr Moldwin concluded by saying that IC/PBS is a condition of high prevalence in the USA and that an increasing number of male patients are now being diagnosed. IC/PBS is still a clinical diagnosis since there is no specific test to make a diagnosis, IC/PBS cannot be treated solely as a bladder condition and co-morbid conditions need to be taken into consideration. Once a diagnosis has been reached, there are many different treatment strategies, ranging from dietary changes and behaviour modification to oral medications, intravesical therapy and even surgery.

AUA 2009 Webcasts

<http://www.aua2009.org/Information/webcast.asp>

The following webcasts will be of interest:

- Plenary Sessions > Highlights > Infection & Inflammation presented by Robert Moldwin, MD.
- Plenary Sessions > Late-breaking News > A new look at the use of amitriptyline for the treatment of interstitial cystitis: results of an NIH clinical trial presented by Philip Hanno, MD.
- Plenary Sessions > State-of-the-Art Lectures > The overlap between prostatitis and other pelvic pain syndromes presented by Kristene Whitmore, MD.

This review was compiled and edited by Jane Meijlink

The International Painful Bladder Foundation does not engage in the practice of medicine. It is not a medical authority nor does it claim to have medical knowledge. Information provided in IPBF emails, newsletters and website is not medical advice. The IPBF recommends patients to consult their own physician before undergoing any course of treatment or medication.

The IPBF endeavours to ensure that all information it provides is correct and accurate, but does not accept any liability for errors or inaccuracies.

© 2009 International Painful Bladder Foundation