

Interstitial Cystitis & Bladder Pain Syndrome

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Objectives

1. Identify symptoms of IC/PBS.
2. Describe co-morbidities & risk factors for IC/PBS.
3. List evaluation & management strategies for IC/PBS

Definition

“An unpleasant sensation (pain, pressure, discomfort) perceived to be related to the urinary bladder, associated with lower urinary tract symptoms of more than 6 weeks duration, in the absence of infection or other identifiable causes”

• Hanno. J Urol 2011;185:2162-2170

IC/PBS

- Bladder pain disorder associated with voiding symptomatology & other chronic pain disorders
- Can start with a single symptom & progress to multiple symptoms
- No race or ethnicity differences
- Occurs across the lifespan
- Men & women affected

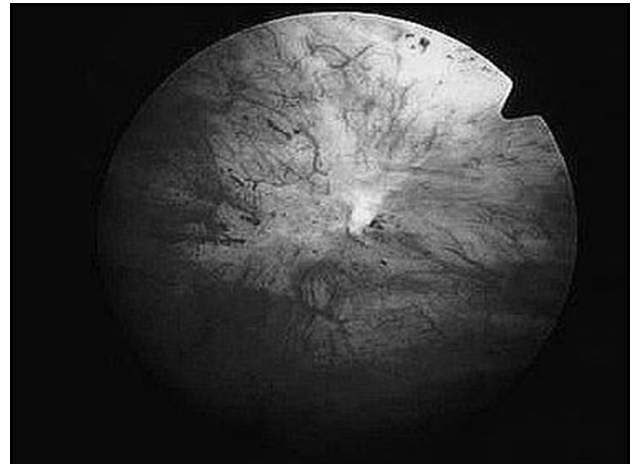
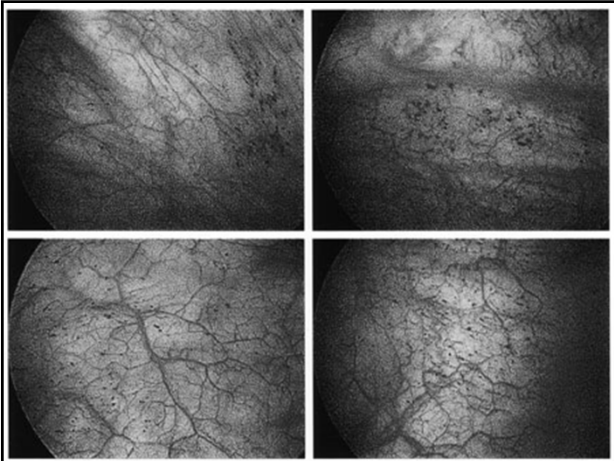
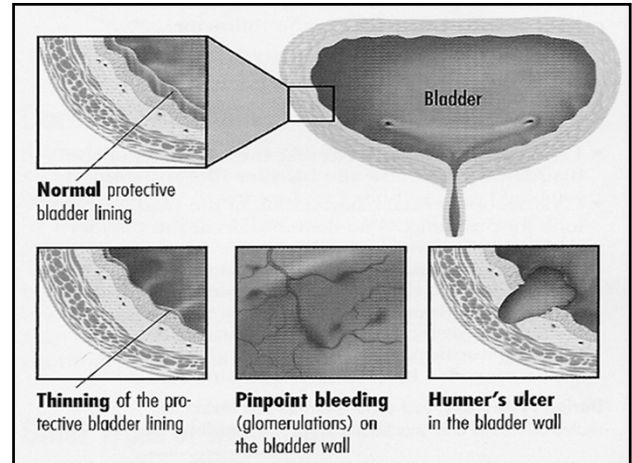
Scope of the Problem

- Population based study 2011
 - Random sample
 - 12,752 met criteria to complete questionnaire
 - 2.7% and 6.5 % women met criteria
- Equates to 3.3 to 7.9 million US women over 18 yrs
- Only 9.7% had been given Dx of IC

• Berry. J Urol 2011;186:540

Etiology of IC/PBS

- Is it a primary bladder disorder or a secondary phenomena?
 - Hypersensitivity disorder? Common central pathogenesis & pathophysiology
 - Part of a continuum of overactive bladder; Painful vs non painful
 - Known effects on the bladder:
 - Permeability: defect in the bladder epithelium that allows irritating substances in the urine to penetrate into the bladder;
 - Allergic: Mast cells releasing histamine
 - Breakdown of the glycosaminoglycan layer (GAG)
 - Aberrant neurological signals
 - Immune system attacks the bladder, similar to other autoimmune dx.



Risk Factors

- Female
- Having a chronic pain disorder
- ? Genetic/hereditary
- Only modifiable risk factor
 - caffeine

Co-Morbidities

- Fibromyalgia
- Vulvodynia
- IBS
- Chronic fatigue syndrome
- Depression/anxiety/panic disorder
- Chronic headaches
- Allergies/sensitive skin

Symptoms

- Urinary frequency & urgency; can mimic a UTI
- Supra pubic pain/pressure/discomfort r/t bladder filling. Can be felt in the urethra, vulva, vagina, rectum.
- Void to avoid or to relieve pain
- Pain worsens with specific foods or drinks
- Symptoms persist > six week



Diagnostic Tests:

- U/A & culture
- Symptom questionnaire
- Pain evaluation
- Voiding diaries/Frequency/Volume chart
- PVR
- Cytology if + Hx smoking
- **Potassium sensitivity test is no longer advised:**
 - 26% of IC patients have a negative test, Risks triggering a flare
- Cystoscopy /hydro distention +/- urodynamics when diagnosis unclear

AUA 2014 Guidelines



Self Report Instruments

- To establish baseline symptoms:
 - O'Leary-Sant Symptom & Problem Questionnaire
 - Pelvic pain & Urgency/frequency (PUF)
- To evaluate pain:
 - O'Leary-Sant ICSI/ICPI
 - Likert scale
 - Visual Analog scale
 - McGill Pain Questionnaire (short form)



Physical Exam Findings

- Pelvic exam:
 - R/o other conditions
 - Inconsistent findings:
 - Tender anterior vaginal wall/urethra
 - Tender levator muscles
 - Sacroiliac/pubis symphysis tenderness



Differential Diagnosis

- UTI
- Vesical Stones
- Urethral diverticula
- Bladder Cancer
- Effect from previous chemotherapy &/or radiation cystitis
- Gynecologic condition



Mis-diagnosis?

- Study at SLU Referral Center:
 - 197 patients with dx of recurrent UTI's
- 31.5 % had recurrent UTI's
- 53.3% had IC as sole diagnosis
 - Unpublished data – Steele, 2010



Overview of AUA Treatment Guidelines 2014

- Conservative therapies first:
 - Clinical judgment , severity of symptoms & patient preferences
- Combination of simultaneous treatments: reassess; change as needed . If no improvement after multiple treatments, then re-consider the diagnosis
- Avoid use of long term antibiotics & oral glucocorticoids
- Pain management: Limit narcotics, assess throughout, consider multi- disciplinary approach &/ or pain management specialist
- Refer/treat other co-morbidities



Treatment: First Line

- **Patient education:**
 - Self care/behavioral modification
 - Relaxation/stress management:
 - psychological stress increases pain sensitivity & symptoms
 - meditation, guided imagery, yoga, exercise
- **Bladder Retraining :**
 - Timed voids
 - Variable results; dependent upon motivation



Urinary Analgesics

- **Good for symptom flares:**
 - Phenazopyridium:
 - Orange urine
 - Methylene blue compounds:
 - Contain: Hyoscyamin, (spasms) methenamine (antiseptic) , methylene blue (antiseptic) , phenyl salicylate (pain)
 - Blue urine



Diet /Fluids

- Allows sense of self control, **very individual**
- Food diary & lists of irritants:
 - Avoid those foods/fluids that trigger sx
 - IC Diet: avoid caffeine, acid foods, high dose water soluble vitamin supplements
 - Fluids: concentrated urine is irritating
 - Watch temperature: cold/ hot can trigger
 - Gluten free diets, anti-yeast, alkaline diets if finds helpful
- Nutrition supplements



IC Diet

Beverages Permitted: Bottled or spring water, decaffeinated, acid-free coffee and tea, some herbal teas 	Avoid or Use Cautiously: Alcoholic beverages, including beer and wine, carbonated drinks, coffee, tea, and cranberry juice 	Carbohydrates/Grains Permitted: Pasta, rice, breads other than those listed on the right 	Avoid or Use Cautiously: Rye and sourdough breads 
Meats/Fish Permitted: Poultry, fish, and meats other than those listed on the right 	Avoid or Use Cautiously: Aged, canned, cured, processed or smoked meats and fish, anchovies, caviar, chicken livers, corned beef and meats that contain nitrates or nitrites 	Fruits Permitted: Blueberries, melons other than cantaloupe, and pears 	Avoid or Use Cautiously: All other fruits and juices made from them 
Nuts Permitted: Almonds, cashews, and pine nuts 	Avoid or Use Cautiously: Most other nuts 	Vegetables Permitted: Potatoes, homegrown tomatoes, and vegetables other than those listed on the right 	Avoid or Use Cautiously: Fava beans, lima beans, onions, rhubarb, tofu, and store-bought tomatoes 
Preservatives Avoid or Use Cautiously: Benzoyl alcohol, citric acid, monosodium glutamate (MSG), aspartame (NutraSweet®), saccharin, and foods containing preservatives or artificial sweeteners and colors. 	Seasonings Permitted: Garlic and seasonings other than those listed on the right 	Avoid or Use Cautiously: Mayonnaise, miso, spicy foods (especially Chinese, Mexican, Indian, and Thai food) 	

Nutritional Supplements

- Calcium glycerophosphate
 - Take 2 - 3 tabs or packets with food
 - "Tums for the bladder"—neutralize 98% acid in coffee, less for juice
 - 3 of 4 pts had decrease in food triggers
- Freeze dried aloe vera

• Bologna. Urology 2001;57:119-20



Nutritional Supplement

- Dietary supplements target:
 - bladder GAG layer dysfunction:
 - chondroitin sulfate, glucosamine sulfate, sodium hyaluronate
 - bladder inflammation:
 - quercetin, rutin
- Dose: 4 - 6 tabs / day
- 50% reduction in symptom scores
- Cannot use if seafood or shellfish allergy

• Theoharides. Can J Urol 2008;15:4410-4



Treatment: Second Line

- Physical therapy:
 - Manual therapy by pelvic floor specialist
 - **Avoid** pelvic floor strengthening (Kegel)
- Oral:
 - pentosan polysulfate, hydroxyzine, amitriptyline, cimetidine
- Intra-vesical:
 - Dimethyl Sulfoxide (DMSO)
 - combinations of Heparin, Lidocaine, triamcinolone, bicarbonate



Pentosan Polysulfate

- Only FDA approved treatment
 - Studies usually show 2x placebo rate
 - Improve pain, urgency but not so much nocturia
 - Works better with classic Hunner's ulcer
 - Effectiveness begins within 3 months
 - Usually 300mg as good as 600-900mg
 - Severe symptoms – may increase to 600 mg
- Higher response rates if you treat early after diagnosis
- 47% of patients with IC were not treated with appropriate therapy in the 1st year after diagnosis

– Wu et al Pharmacoeconomics 2006: 55-65



Hydroxyzine

- Anti histamine, decreases CNS activity/sedative
- Rationale – mast cells have a pivotal role
25mg increasing to 50 mg q HS
Observational studies - > 90% improve
- RCT - Hydroxyzine vs. elmiron vs. placebo
 - No significant difference
 - Underpowered
 - 40% response vs. placebo 13%
 - Well tolerated with few side effects

• Sant. J Urol 2003;170:810-5



Amitriptyline

- Tri- cyclic anti- depressant
- 3 RCT's in the IC Network:
 - Dose 10-75
 - 50 mg = 66% response
- 19 months Long-term follow-up – 94 pt
 - 64% response at average dose of 55 mg
 - Side Effects:
 - 84% dry mouth
 - 79% and weight gain 59%
 - Risk of sedation/falls in >65 yr
- Pt satisfaction excellent/good 46%

– Hertle. Aktuelle Urol 2010;Jan 41 Suppl 1:561



Intravesical Instillations

- “Cocktail for the bladder”
 - Lidocaine (pain)
 - Heparin (replace GAG)
 - Steroid (immune modulator)
 - Bicarbonate (alkaline)
- Weekly for 3-6 weeks
- 50% decrease overall symptoms
- 57% resolution of dyspareunia
- Nocturia decrease by 50%



Dimethyl Sulfoxide Intravesical Instillations

- Penetrates cell membrane ☐ analgesia, anti-inflammatory, collagenolytic, muscle relaxant
 - FDA approved in 1978
 - Uncontrolled studies
 - Response rates 50 – 70% 1-2 months
 - May have longer lasting effect for 16 – 72 months
 - 48% decrease in pain after 1st instillation;
 - Garlic like taste up to 72hrs

• Dawson, Cochrane Database Rev 2007;17:CD006113



Other Treatments

- **Third- Line:**
 - Cystoscopy /hydrodistention under anesthesia
 - Can be used for diagnosis & treatment
 - Tx of Hunner's ulcer's: fulguration , injection of triamcinolone
- **Fourth- Line:**
 - onabotulinumtoxinA(Botox0* problem with retention
 - Neuromodulation: Stoller Afferent Nerve Stimulator* or Implantable sacral neurostimulator* (approved for OAB)
- **Fifth- Line:**
 - Cyclosporine A*
- **Sixth- Line: RARE**
 - Diversion +/- cystectomy can still have pain
 - Substitution cystoplasty; symptoms/pain can develop in the new bladder

* not FDA approved



IC/PBS Costs

- Direct:
 - Annual health care costs 2-2.4 times higher for women with IC/PBS
- Indirect:
 - Lost wages, productivity



Resources for Patients

- IC Association: www.ichelp.org
- IC Network: www.ic-network.com
 - Support group listings & on line support
 - Blogs/Twitter/You-tube/Facebook
 - Books



IC/PBS Complications

- **High rates of pelvic surgery**
- Impact of QOL & functioning:
 - Damaging to work life, personal relationships & general health
 - Sleep dysfunction
 - Pain
 - Sexual dysfunction
 - Social functioning difficulties
 - Depression/anxiety/panic attacks



Prognosis

- Chronic pain condition
- Often mis-diagnosed & mis-treated
- Symptoms wax & wane
- Self management strategies are critical
- Urinary analgesics very helpful



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Questions?

