Diagnosis and Treatment of Interstitial Cystitis

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Bladder pain syndrome/IC

• Definitions
• Classification
• Diagnosis
• Epidemiology
• Associated problems
• Presentations
• Further investigation
• 6 steps of management
Bladder Pain Syndrome

- AKA interstitial cystitis (IC)
- Chronic, inflammatory disease of the bladder
- Unknown aetiology
- Diagnosis of exclusion
- Chronic urinary frequency, nocturia, urgency and bladder/suprapubic pain, in the absence of any obvious cause
- May see glomerulations on cystoscopy
- 10% Hunner’s ulcer
Bladder pain syndrome (BPS)

**EAU, ESSIC and ICI definition**

- Chronic (>6 months)
- Pelvic pain, pressure, or discomfort related to the urinary bladder
- ≥ one other urinary symptom such as persistent urgency or frequency

- **AUA:** symptoms >6 weeks

- **ICS:** BPS/Interstitial Cystitis (IC)
  ‘typical cystoscoposcopic and histological features’
Classification

• Bladder normal  
  BPS type 1A

• Glomerulations present  
  BPS type 2

• Hunner’s ulcer present  
  BPS type 3C
Diagnosis

Diagnosis criteria
• Hunner’s ulcer

Positive factors (supporting diagnosis)
• Pain on bladder filling, relieved by emptying
• Pain (suprapubic, pelvic, urethral, vaginal, perineal)
• Glomerulations on cystoscopy
• ↓ compliance on urodynamics
Diagnosis of exclusion

• Bladder tumours
• Cystitis: bacterial, radiation, TB, drug-related
• Vaginitis
• Urethral diverticulum
• Uterine, cervical, vaginal, or urethral cancer
• Active herpes
• Bladder or lower ureteric calculi
Epidemiology

- Female to male ratio is 10:1
- Prevalence
  - 300 per 100,000 women
  - 30 - 60 per 100,000 men
- 17 fold ↑ risk in female 1st-degree relatives
<table>
<thead>
<tr>
<th>Disorder</th>
<th>Prevalence</th>
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<tbody>
<tr>
<td>Inflammatory bowel syndrome</td>
<td>X 100 ↑ risk</td>
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<tr>
<td>Vulval pain</td>
<td>50%</td>
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<td>Endometriosis</td>
<td>48%</td>
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<tr>
<td>Allergies</td>
<td>40%</td>
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<tr>
<td>Fibromyalgia</td>
<td>19%</td>
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<tr>
<td>Chronic fatigue syndrome</td>
<td>9%</td>
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<tr>
<td>Overactive bladder</td>
<td>14%</td>
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<tr>
<td>Systemic lupus erythematousus (SLE)</td>
<td>x30 ↑ risk</td>
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<tr>
<td>Chronic prostatitis ♂</td>
<td>17%</td>
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<tr>
<td>Depression</td>
<td>16%</td>
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Aetiology?
Presentation

- Female (all ages)
- One bad episode of symptomatic UTI
- Recurrent cystitis
- Dipstick +/- positive
- Had multiple courses of antibiotics
- Overactive bladder symptoms
- Pelvic pain
- Examination globally normal
History

• Gynaecological
  – Dyspareunia
  – Painful or heavy periods

• Bowel habit

• Triggers?

• Associated problems
  – Allergy
  – Chronic fatigue
  – Lupus

- Endometriosis
- IBS
- Elimination diet
- Optimise health
Bacterial versus inflammatory cystitis

- Send urine culture if dipstick positive
- Check for evidence of any bacterial UTI
- Did antibiotics provide benefit?
- Is pain worse when bladder full?
- Pain worse around periods?
- Better during pregnancy?

- Is this BPS?
- Initiate treatment +/- or refer to secondary care
Further assessment

- Focused examination
- FVC
- O’Leary Saint questionnaire (ICSI and ICPI)
- Cystoscopy (and hydrodistention)
- Urodynamics
Phenotype your patient

UPOINT

- U = Urinary
- P = Psychosocial
- O = Organ specific
- I = Infection
- N = Neurological/Systemic
- T = Muscle Tenderness

13% have 2 domains

↑ Number of phenotypes
↑ severity and duration

Psychological, neurological/systemic and tenderness have most impact on QoL

Nickel JC Urology 2014; 84: 175-9
6 steps of management

1st line - Conservative

2nd line - Drugs

3rd line - Cystoscopy

4th line - SNS or Botox

5th line - Cyclosporin

6th line - Surgery
Principles of management

• Multidisciplinary approach

• Target treatment to phenotype

• Multimodal therapy

• Pain management at all stages +/- pain clinic
Encourage realistic patient expectation

• Patient education and psychological support
• Food diary and elimination diet
• Physiotherapy: pelvic floor relaxation
• Simple analgesia
• Acupuncture
• TENS
## 2nd line – Oral Drugs

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<th>Study type</th>
<th>Evidence level</th>
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<th>Grade</th>
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<td>1b</td>
<td>A</td>
<td>B</td>
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<tr>
<td>Cimetidine</td>
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<td>B</td>
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<tr>
<td>Hydroxyzine</td>
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<td>Against use</td>
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<tr>
<td>PPS / Elmiron</td>
<td>Meta-analysis 3 x RCTs</td>
<td>1a</td>
<td>A</td>
<td>B</td>
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**EAU**

**AUA**
Oral Drugs – clinical practice

• Amitriptyline
• Start at 10mg and titrate up (50mg optimal)
• If SE or no benefit change to alternative
• Nortriptyline/Gabapentin/Pregabalin
• +/- add another class of drug

• Hydroxyzine
• Regular or PRN 25-100mg daily
# 2nd line – Intravesical Drugs

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<td>DMSO</td>
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<td>C</td>
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<td>Heparin</td>
<td>1 observational</td>
<td>3</td>
<td>C</td>
<td>C</td>
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<tr>
<td>Lidocaine + bicarbonate</td>
<td>1x RCT in systematic review</td>
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<td>A</td>
<td>B</td>
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<tr>
<td>PPS ± oral</td>
<td>1 x RCT</td>
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<td>A</td>
<td>B</td>
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<tr>
<td>Chondroitin</td>
<td>Meta-analysis of individuals (213)</td>
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<td>B</td>
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Intravesical Drugs – clinical practice

• Glycosaminoglycan (GAG) layer consists of:
  – chondroitin sulphate*
  – hyaluronic acid*
  – heparin sulphate*
  – dermatan sulphate
  – keratin sulphate

• Cystistat = hyaluronic acid
• iAluRil = hyaluronic acid + chondroitin
• Parson’s cocktail = heparin + LA + bicarbonate
3rd line

GA cystoscopy and hydrodistension (C)
• ↓ urine APF and ↑ HB-EGF towards normal
• Pain & LUTS better in 56%; lasted 2 months¹

TUR or fulguration of Hunner’s lesion (B)
• 259 TURs in 103 patients²
• Pain resolution in 92%
• 40% sustained over 3 years
• Remainder responded to repeat therapy

Neuromodulation / SNS (B)
• Success rates 72% at 61.5 months$^1$
• Explantation rates 20-30%

Botulinum toxin A (C)
• 100IU + hydrodistension every 6 months (x4) (A)
• Pain relief in 61% at 24 months (versus 30% single)
5th line

Cyclosporin A (immunosuppressant) (A)

• Success rates of 68% BPS type 3C (versus 30%)
• Need to monitor BP and U&Es
• Side effects: hair growth, gingival hyperplasia, abdo pain
6th line

- **REFRACTORY DISEASE (A)**
- Urinary diversion (ileal conduit) ± cystectomy
- Supratrigonal, subtrigonal with reconstruction
- Augmentation cystoplasty
  - For small capacity bladders with BPS type 3C
  - Satisfaction rates >90% BPS type 3C vs 13%
- Better results of pain relief with ulcer BPS
- **Warn - may experience persistence of pain**
BPS - Summary

• Heterogeneous disorder
• Exclude other pathologies
• Treat/exclude bacterial infection
• Target the patient phenotype
• Pain clinic essential
• 6 step management