



# 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
- $\geq$  one other urinary symptom such as persistent urgency or frequency

- **AUA: symptoms >6 weeks**



- **ICS: BPS/Interstitial Cystitis (IC)**

‘typical cystoscopic and histological features’

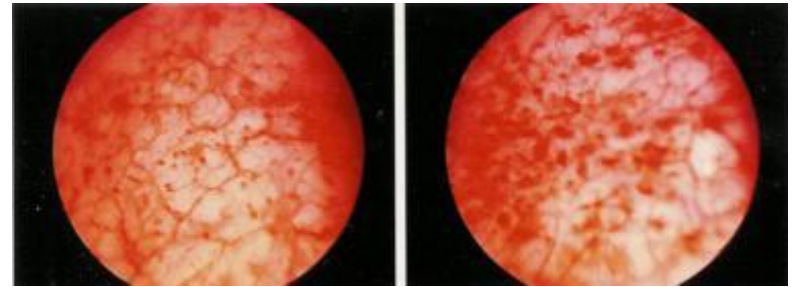


# Classification

- **Bladder normal**  
**BPS type 1A**



- **Glomerulations present**  
**BPS type 2**



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- **Hunner's ulcer present**  
**BPS type 3C**



# Diagnosis

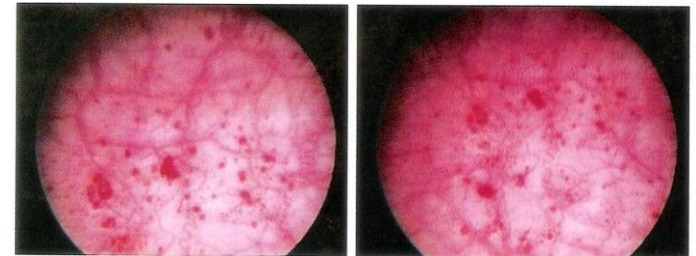
## Diagnosis criteria

- 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 1<sup>st</sup>-degree relatives

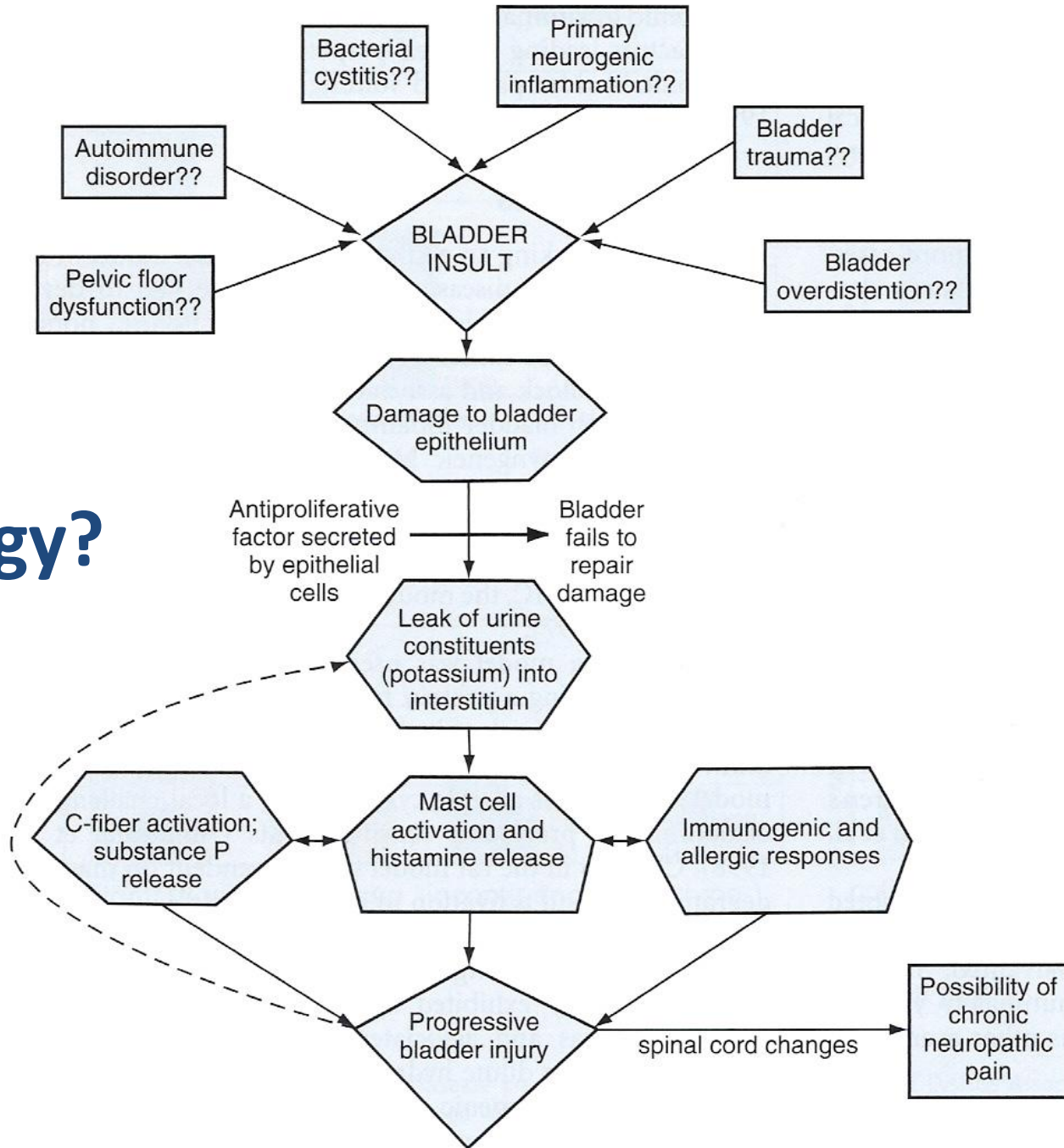




# Associated disorders

Disorder	Prevalence
Inflammatory bowel syndrome	X 100 ↑ risk
Vulval pain	50%
Endometriosis	48%
Allergies	40%
Fibromyalgia	19%
Chronic fatigue syndrome	9%
Overactive bladder	14%
Systemic lupus erythematosus (SLE)	x30 ↑ risk
Chronic prostatitis ♂	17%
Depression	16%

# Aetiology?



# Presentation

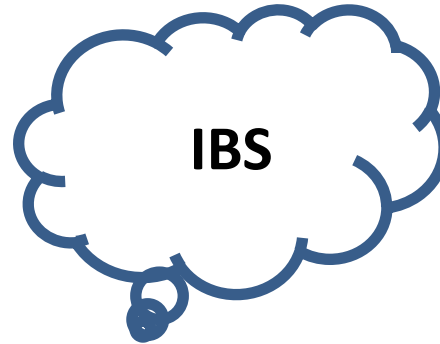
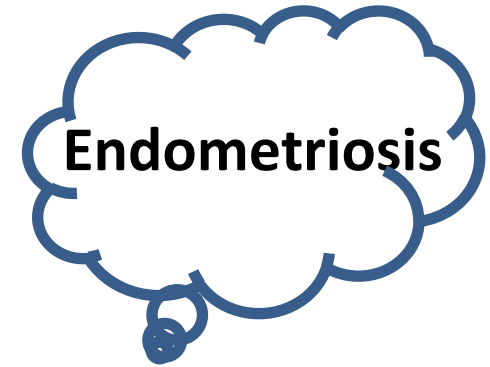


- Female (all ages)
- One bad episode of symptomatic UTI
- Recurrent cystitis
- Dipstick +/- positive
- Had multiple courses of antibiotics
- Overactive bladder symptoms
- Pelvic pain
- Examination globally normal



# History

- **Gynaecological**
  - Dyspareunia
  - Painful or heavy periods
- **Bowel habit**
- **Triggers?**
- **Associated problems**
  - Allergy
  - Chronic fatigue
  - Lupus



# 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** = **U**rinary
- **P** = **P**sychosocial
- **O** = **O**rgan specific
- **I** = **I**nfection
- **N** = **N**eurological/Systemic
- **T** = **M**uscle **T**enderness

13% have 2 domains

↑ Number of phenotypes

↑ severity and duration

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

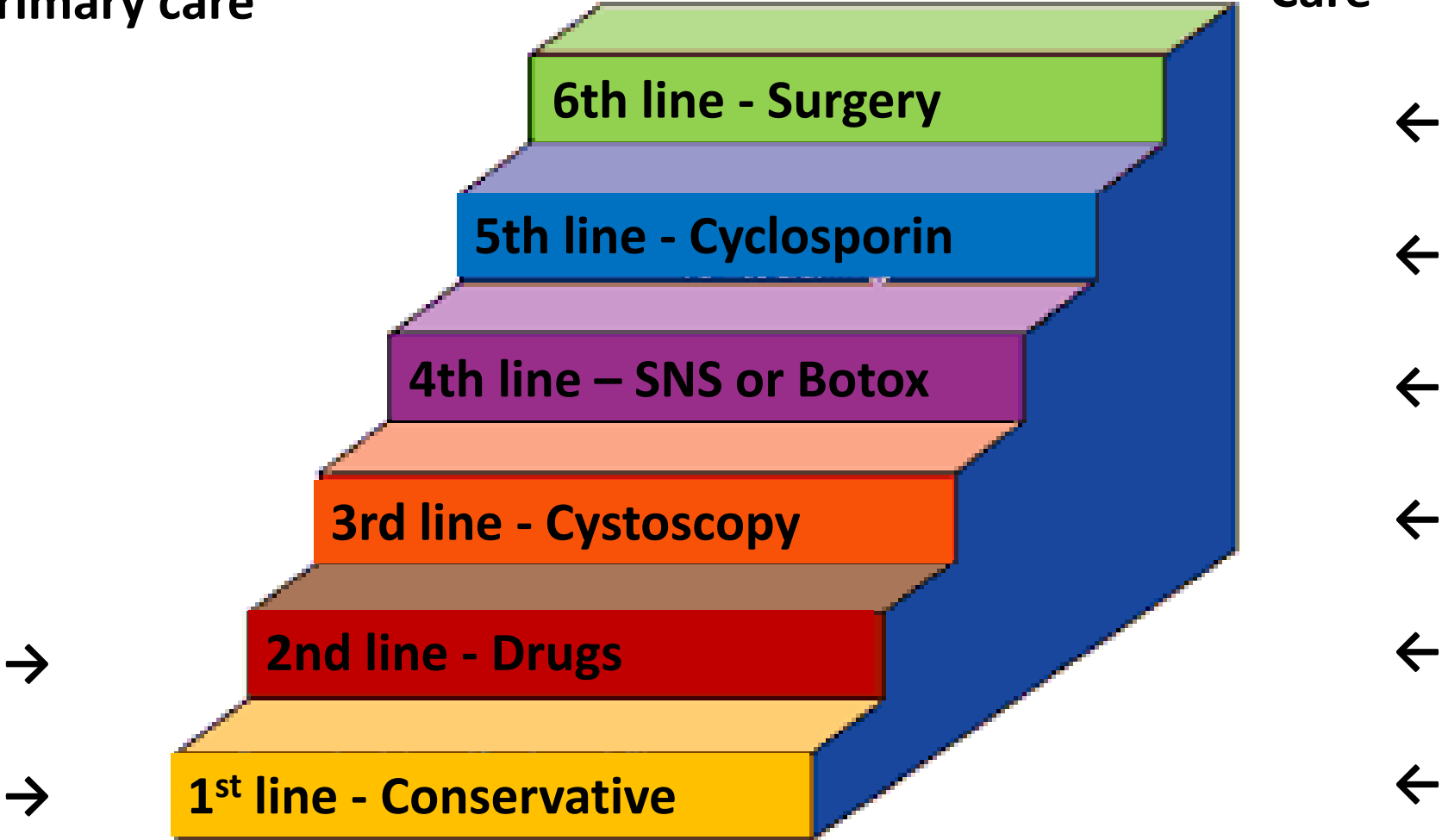


# 6 steps of management



Primary care

Secondary Care





# Principles of management

- Multidisciplinary approach
- Target treatment to phenotype
- Multimodal therapy
- Pain management at all stages +/- pain clinic





Primary Care

# 1st line - conservative



## Encourage realistic patient expectation

- Patient education and psychological support
- Food diary and elimination diet
- Physiotherapy: pelvic floor relaxation
- Simple analgesia
- Acupuncture
- TENS





# 2<sup>nd</sup> line – Oral Drugs



**EAU**

**AUA**

Drug	Study type	Evidence level	Grade	Grade
<b>Amitriptyline</b>	2 x RCTs	1b	A ★	B
<b>Cimetidine</b>	1x RCT	2b	A ★	B
<b>Hydroxyzine</b>	1x RCT	1b Against use		C
<b>PPS /Elmiron</b>	Meta-analysis 3 x RCTs	1a	A ★	B

# 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

# 2<sup>nd</sup> line – Intravesical Drugs



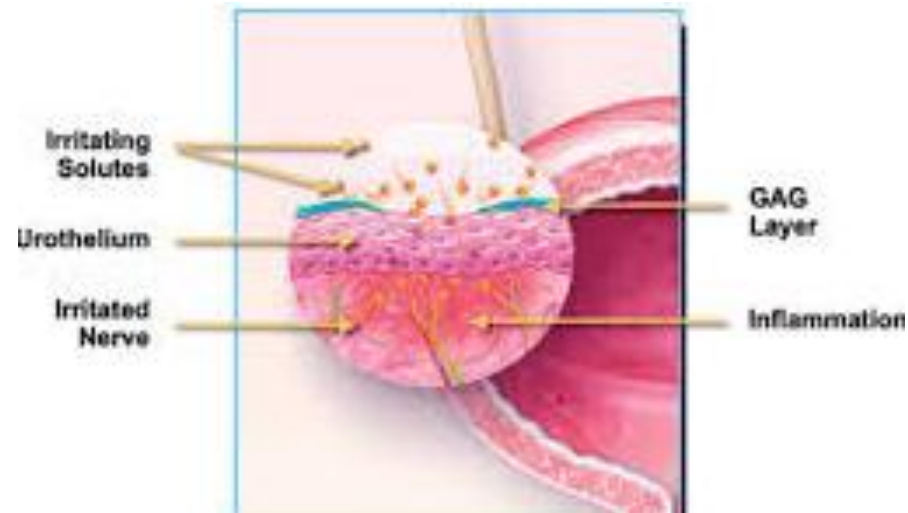
**EAU**

**AUA**

Drug	Study type	Evidence level	Grade	Grade
<b>DMSO</b>	Systematic review	1b	A ★	C
<b>Heparin</b>	1 observational	3	C	C
<b>Lidocaine + bicarbonate</b>	1x RCT in systematic review	1b	A ★	B
<b>PPS ± oral</b>	1 x RCT	1b	A ★	B
<b>Chondroitin</b>	Meta-analysis of individuals (213)	2b	B	

# 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

## 3<sup>rd</sup> line

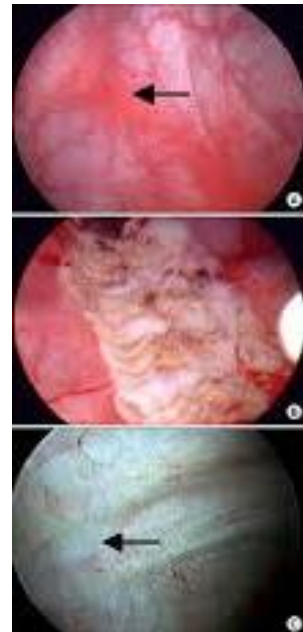


### GA cystoscopy and hydrodistension (C)

- ↓ urine APF and ↑HB-EGF towards normal
- Pain & LUTS better in 56%; lasted 2 months<sup>1</sup>

### TUR or fulguration of Hunner's lesion (B)

- 259 TURs in 103 patients<sup>2</sup>
- Pain resolution in 92%
- 40% sustained over 3 years
- Remainder responded to repeat therapy

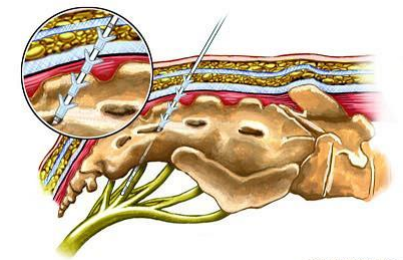
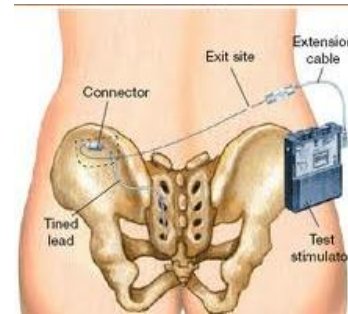


# 4<sup>th</sup> line



## Neuromodulation / SNS (B)

- Success rates 72% at 61.5 months<sup>1</sup>
- 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)





# 5<sup>th</sup> 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



## 6<sup>th</sup> 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

