

Cystitis Symptoms/Problems Index from baseline to week 12 among the pentosan-treated patients (median -12 or approximately a 46% reduction) was significantly greater compared to the placebo group (median -5.5 or approximately a 24% reduction,  $p=0.04$ ). At week 18, the treatment group showed statistically significant improvement in all HRQoL domains compared to the baseline ( $p<0.01$ ), while the placebo group showed significant improvement in only 3 HRQoL domains, ( $p<0.05$ ) compared to the baseline.<sup>5</sup>

## References

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In this case, the patient had IC/PBS, which was chronic and significantly distressing to the patient. The diagnosis was confirmed by cystoscopy. The patient also had associated symptoms like dyspareunia. Pentosan was effective in improving symptoms and decreasing dyspareunia significantly and thus improving HRQoL of the patient. Pentosan is safe and effective treatment option in IC/PBS.

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To relieve patients from **Bladder Pain** or **Discomfort**  
**Cystopen**<sup>™</sup>  
 Pentosan Polysulfate Sodium Capsules 100mg  
**Easing lives in IC**

**Abbreviated Prescribing Information for Cystopen**  
 Composition: Pentosan Polysulfate Sodium 100 mg Dosage Form: Capsule Description: Pentosan polysulfate sodium is a semisynthetic sulfated polysaccharide used for the relief of bladder pain or discomfort associated with interstitial cystitis. Indication: For the relief of bladder pain or discomfort associated with interstitial cystitis. Dosing and Administration: One capsule orally three times a day, one hour before or two hours after meals. Contraindications: Known hypersensitivity to the drug or its excipients. Warnings & precautions: Pentosan polysulfate is weak anticoagulant. Rectal hemorrhage and bleeding complications of ecchymosis, epistaxis, and gum hemorrhage reported. Evaluate patients at increased risk for hemorrhage including those undergoing invasive procedures, with signs and symptoms of coagulopathy, or receiving concomitant drugs that affect hemostasis. Use with caution in patients with history of heparin-induced thrombocytopenia. Carefully evaluate patients with thrombocytopenia prior to initiation of therapy. Concomitant Illnesses: Carefully evaluate patients with diseases such as aneurysms, hemophilia, GI ulcerations, polyps, or diverticula prior to initiation of therapy. Hepatic Effects: Mild and usually transient elevations (<2.5 times ULN) of serum aminotransferases, alkaline phosphatase,  $\gamma$ -glutamyl transpeptidase, and LDH concentrations reported in about 1.2% of patients. Alopecia: Alopecia, primarily alopecia areata (limited to single area on scalp), reported; may occur within first 4 weeks of initiation of therapy. Drug Interactions: Potential for increased risk of hemorrhage with concurrent use of drugs that affect hemostasis. Monitor for hemorrhage during concurrent administration. Adverse Reactions: Rectal hemorrhage, alopecia, diarrhea, nausea, headache, blood in stool, rash, dyspepsia, abdominal pain, abnormal liver function tests, dizziness, bruising. Storage: Store below 25°C, Protect from light and moisture. Shelf Life: 36 months

**Amphion**

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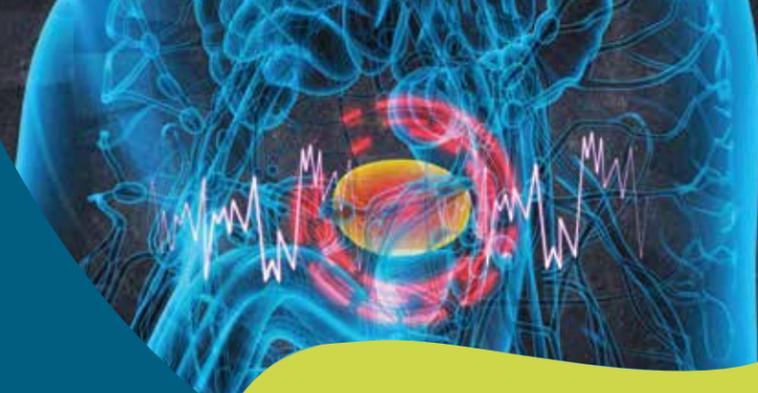
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Issue 3

# Cystopen

## Case Series



## Interstitial cystitis in a 32-year-old lady



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### Case presentation

A 32-year-old normotensive, euglycemic, married woman, presented with complaints of pain in the vulva, suprapubic area, and frequency of urination almost every one hour for the past 4 years.

### History of illness

The symptoms progressed gradually. At the time of presentation, the patient had intense pain over her clitoris, which relieved on passing urine. However, pain often recurred within about half an hour and gradually increased in intensity that was unbearable, thereby prompting her to pass urine.

At night, the frequency of urination was virtually every hour by the clock. She used to wake up with severe pain in hypogastrium and vulva rather than the bladder sensation, so much so that she was scared to fall asleep due to fear of filling of bladder to its capacity and resultant pain.

Mostly, traveling by road was painful for her due to pain that used to occur because of bumpy roads. There was deep dyspareunia that made her marital life in distress apart from the disability, which she was suffering from. Even though she was fortunate to have a caring spouse, she used to feel depressed and share her suicidal thoughts, should the disease be incurable.

### Past medical history

There was no history suggestive of stone disease or haematuria. She did not complain of soreness, itching or vaginal discharge.

### Menstrual history

She had regular menstrual periods without pain or other problems.

### Clinical examination

- Psychological state: She was anxious and evidently depressed
- Built and nutrition: Average
- Afebrile
- No signs and symptoms of systemic disease

For the use of a Registered Medical Practitioner or a Hospital or a Laboratory only

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## Systemic examination

Per abdominal examination: Hypogastrium was tender.

Clinical examination of vulva: Did not reveal any obvious pathological finding. There were no triggering points on clinical examination of perineum and vulva.

## Laboratory examination

### Urinalysis:

- Did not reveal any active sediment or pyuria
- Aerobic culture of specimen: didn't grow any organism

### Haematology

Routine haematological and serum biochemical parameters: Within normal limits.

## Imaging

### Ultrasound examination of urinary tract

An ultrasound examination of urinary tract was essentially normal except a reduced capacity of urinary bladder which was estimated to be almost 100 cc. There was no residual urine after voiding.

## Cystoscopy

Cystoscopy under general anaesthesia revealed a small capacity urinary bladder with areas of redness and oedema over the posterior wall, just proximal to and involving inter-ureteric ridge and dome of the bladder.

## Biopsy

A cold cup biopsy was taken from these areas and the base fulgurated with Bugbee electrode. Hydrodistension was carried out at a pressure of 80 cm of water from the symphysis pubis for a duration of 5 minutes. The bladder was drained with an indwelling foley catheter overnight.

## Diagnosis

Interstitial cystitis

## Treatment after the procedure

After the procedure, the patient was put on pentosan polysulphate, three times a day before meals.

## Follow-up

Patient had a gradual but steady improvement in her symptoms and after a period of 3 months when she visited for follow-up, she was a totally changed lady. The pain in hypogastrium occurred only occasionally and the peak of pain was rated as less than 20% of her previously perceived rest pain.

Her frequency of urination had reduced to once or twice at night and was manageable during day. She had resumed sexual activity and it was not painful. She had a recent holiday at a hill station where she had climbed a hill on a pony back, and back to base camp without much discomfort.

## Discussion

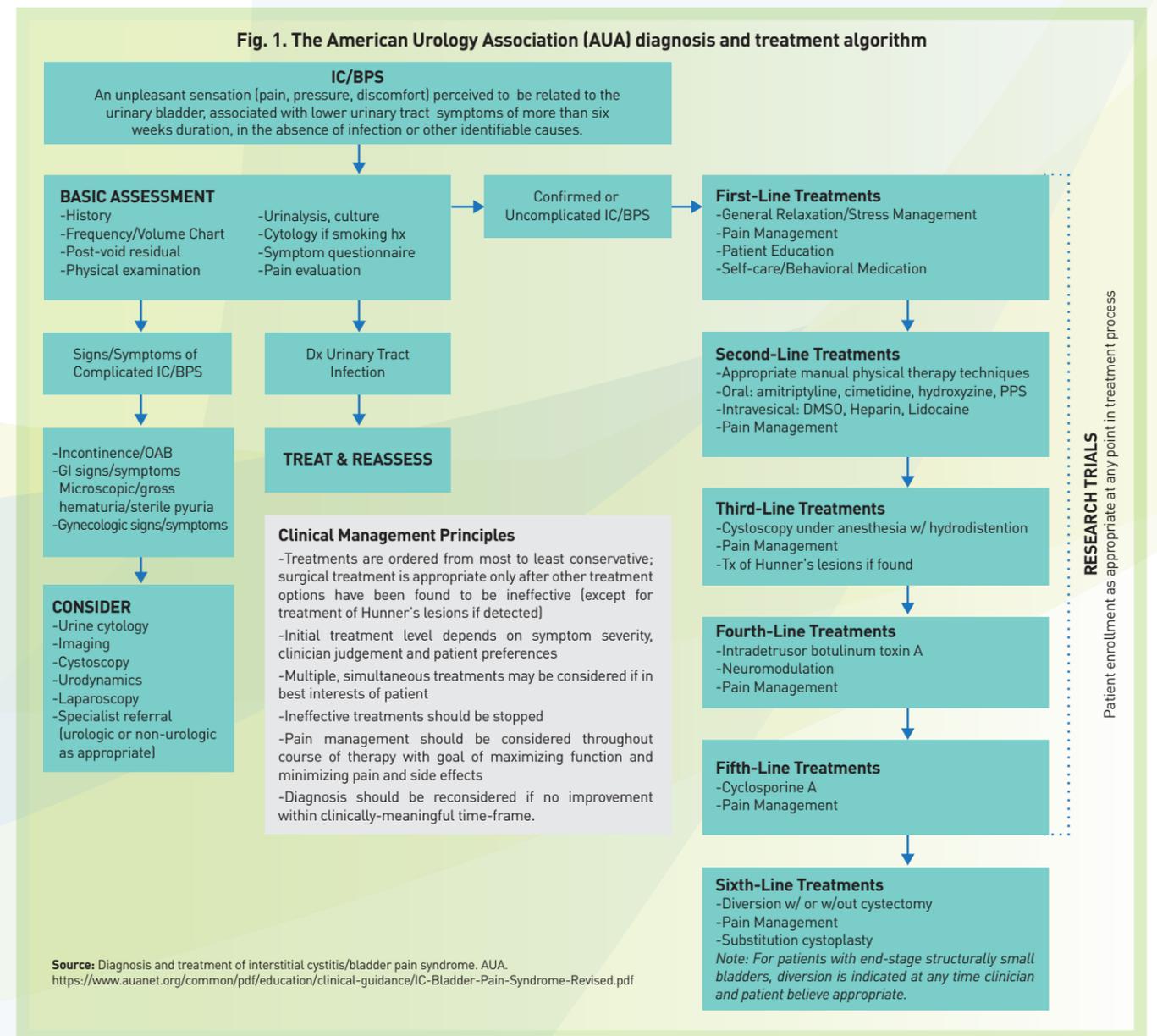
Interstitial cystitis (IC)/painful bladder syndrome (PBS) is a debilitating condition. The diagnosis is difficult and often is one of the exclusions in clinical practice. Cystoscopy is the best way to diagnose IC/PBS. However, treatment can be initiated based on symptoms as well.<sup>1</sup> IC/PBS is distressing to patients; significant higher incidence rate of anxiety, depression, and insomnia are observed in IC/PBS patients vs. matched controls (92.9 vs. 38.4, 101.0 vs. 42.2, 47.5 vs. 23.0; per 10,000 person-year).<sup>2</sup> Careful diagnosis and personalized treatment in IC/PBS is essential. The American Urology Association (AUA) diagnosis and treatment algorithm is shown in Fig. 1.<sup>3</sup>

**Significant higher incidence rate of anxiety, depression, and insomnia are observed in IC/PBS patients vs. matched controls**

Pentosan is one of the effective treatment options in IC/PBS and is recommended by AUA.<sup>3</sup> Pentosan acts by substituting the deficiency in the glycosaminoglycan (GAG) layer of the urinary bladder, thereby relieving symptoms. Various studies have shown the efficacy of pentosan in IC/PBS.<sup>3</sup> In a study by Ali *et al.*, 54.2% reported over 50% improvement using the global response assessment scale (GRA). The reported

efficacy was higher in group of patients taking the drug for more than 12 months (60%).<sup>4</sup>

In a randomized controlled trial by Davis *et al.*, pentosan resulted in significant improvement in higher symptoms and health-related quality of life (HRQoL) when compared to placebo. In the study, the change in the total score of O'Leary-Sant Interstitial



IC/BPS: Interstitial cystitis/bladder pain syndrome; OAB: Overactive bladder; GI: Gastrointestinal; PPS: Pentosan polysulfate; DMSO: Di-methyl sulfoxide;