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 ($p \leq 0.01$), while the placebo group showed significant improvement in only 3 HRQoL domains, ($p \leq 0.05$) compared to the baseline.[5]

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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Issue 3

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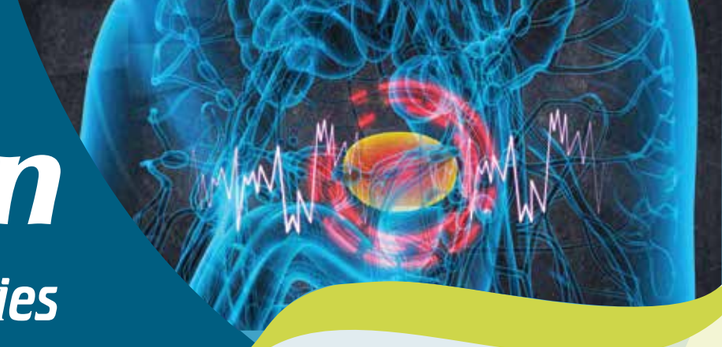
Case Series



Interstitial cystitis in a 32-year-old lady

Dr. Rajesh Taneja
MBBS, MS, MCh. (Urology)
Senior Consultant Urology,
Andrology and Robotic Surgeon,
Indraprastha Apollo Hospitals,
New Delhi.

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

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

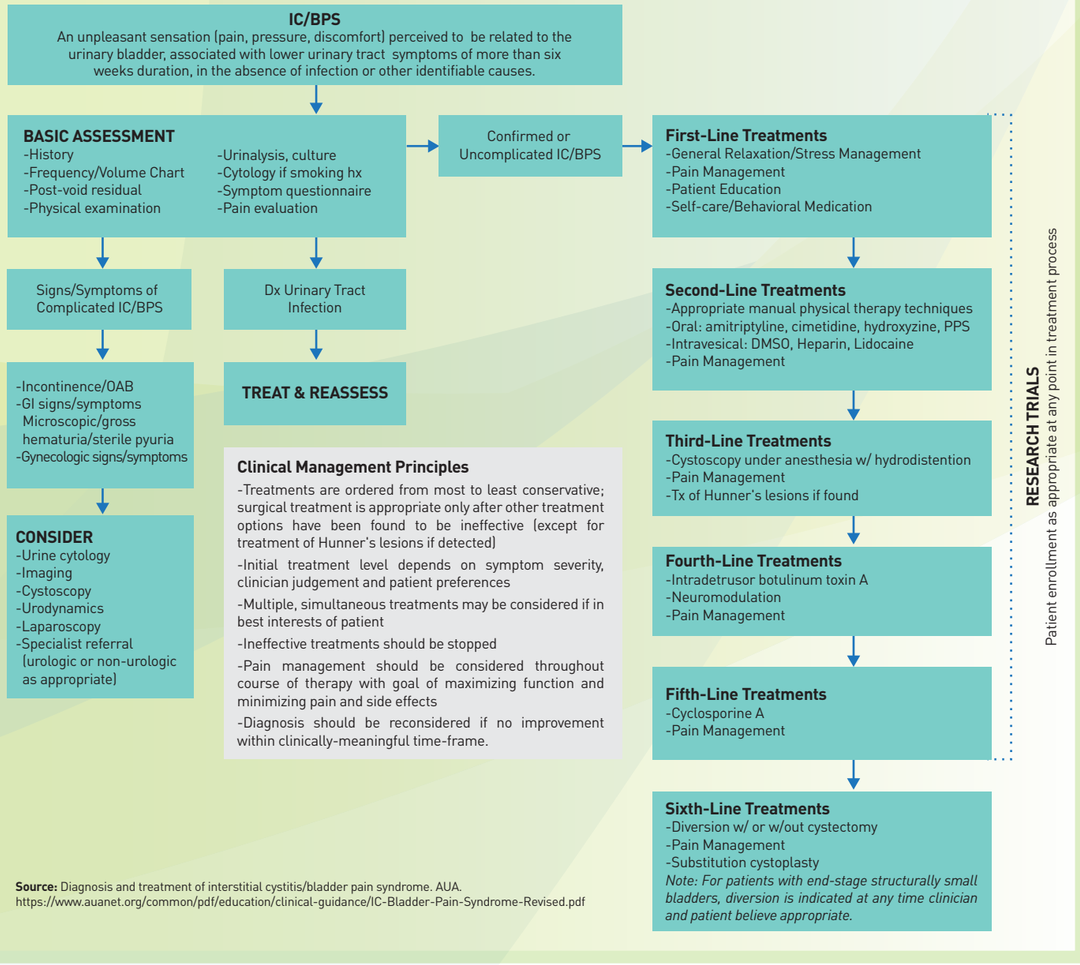
Interstitial cystitis (IC)/painful bladder syndrome (PBS) is a debilitating condition. The diagnosis is difficult and often is one of the exclusions in clinical practice. Cystoscopy is the best way to diagnose IC/PBS. However, treatment can be initiated based on symptoms as well.[1] IC/PBS is distressing 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).[2] Careful diagnosis and personalized treatment in IC/PBS is essential. The American Urology Association (AUA) diagnosis and treatment algorithm is shown in Fig. 1.[3]

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.[3] 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.[3] 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%).[4]

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

Fig. 1. The American Urology Association (AUA) diagnosis and treatment algorithm



Source: Diagnosis and treatment of interstitial cystitis/bladder pain syndrome. AUA. https://www.auanet.org/common/pdf/education/clinical-guidance/IC-Bladder-Pain-Syndrome-Revised.pdf

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