

The Efficacy of Intravesical Cocktail Therapy In Mitigating Symptoms In Painful Bladder Syndrome- A Condition with Unmet Medical Need



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Hypothesis / aims of study

- ❖ The International Continence Society (ICS) defines Painful Bladder Syndrome (PBS) as suprapubic pain during bladder filling, along with increased frequency, without proven infection or clear cause.
- ❖ The prevalence of IC/BPS varies from 0.01% to 2.3%
- ❖ The exact cause of PBS is unknown.
- ❖ The various proposed mechanisms include chronic infection, bladder urothelium issues, mast cell activation, autoimmune factors, and nervous system dysfunction.
- ❖ BPS is associated with other pain syndromes like irritable bowel syndrome, chronic fatigue syndrome, and fibromyalgia, suggesting a unique phenotype within this complex condition.
- ❖ Presents as pelvic discomfort with urinary urgency and frequency. Pain, pressure sensations, burning, throbbing pain are also experienced.
- ❖ Discomfort worsens with bladder filling and lessens with voiding.
- ❖ PBS impacts quality of life through urological symptoms causing sexual dysfunction and psychological disorders.
- ❖ Treatment includes
 - ✓ Conservative therapies including behavior modifications, physiotherapy.
 - ✓ Oral medications like amitriptyline, cimetidine, hydroxyzine, or pentosane polysulfate.
 - ✓ Intravesical bladder instillation
 - ✓ This study aims to determine efficacy of intravesical instillation in Indian population.

Study design, materials and methods

- ❖ Retrospective study conducted at a tertiary hospital in India from January 2022 to July 2023
- ❖ Institutional Review Board approval obtained (No.AIIMSA00009)
- ❖ Written informed consent from all patients
- ❖ 18 patients recruited for cocktail therapy for PBS/IC
- ❖ Case files retrieved for evaluation
- ❖ Pre-treatment evaluation included medical history, urine analysis, and bladder capacity assessment
- ❖ O'Leary-Sant index and VAS pain score used to monitor symptomatic improvement
- ❖ All patients underwent 4 cycles of intravesical cocktail regimen at 4 weeks interval
- ❖ Regimen included:
 - ✓ 40 ml Lignocaine
 - ✓ 4 mg Dexamethasone
 - ✓ 20 ml 8.4% NaHCO3
 - ✓ 80 mg Gentamicin
 - ✓ 10000 IU heparin
- ❖ Treatment lasted for 4 months
- ❖ Solution retained for 30 minutes before voiding
- ❖ Treatment outcomes compared at different time points
 - ✓ First treatment cycle
 - ✓ At 3 months post-treatment
 - ✓ At 6 months post-treatment
- ❖ Success defined as moderate to marked improvement in symptoms
- ❖ Clinical data analyzed using statistical methods in SPSS version 20
- ❖ Significance level set at $p < 0.05$
- ❖ Results presented in mean \pm standard deviation or percentage format
- ❖ Treatment regimen and evaluation methods consistent with previous studies with minor modifications in medication choices.

Results and interpretation

- Painful bladder syndrome is an incapacitating condition that significantly impairs the quality of life for patients.
- Behavioral modifications such as avoiding spicy foods, practicing relaxation exercises or reverse kegel exercise and Amitriptyline 5-10mg at night advised to all patients.
- The average age of the 18 patients diagnosed with IC/BPS at the onset of treatment was 41.5 ± 6.03 years. The mean duration of their symptoms was 4.5 years, ranging from 1 to 11 years prior to receiving therapy.
- Sexual dysfunction was seen in 50%
- In comparison to before treatment, there were notable improvements noticed in frequency, nocturia, bladder capacity, VAS pain score, ICSI (Interstitial cystitis symptom score) and ICPI (Interstitial cystitis problem score) after 4 months of cocktail therapy with sustained improvements lasting up to nine or twelve months post-treatment. Table showing comparision before and after treatment

Urinary symptom and Questionnaire score before and after treatment

Results (Mean \pm Standard Deviation	Initiation	1 month after treatment	3 month after treatment	6 month after treatment	p Value (Initiation and 6 months post treatment)
Frequency	9.66 \pm 2.67	8.27 \pm 1.99	7.5 \pm 1.46	6.27 \pm 1.017	p<0.0001
Urgency	2.1 \pm 2.7	1.6 \pm 2.3	2.1 \pm 3.3	1.5 \pm 3.0	p=0.5324
Nocturia	2.33 \pm 0.97	1.44 \pm 0.51	1.33 \pm 0.48	1.33 \pm 0.48	p=0.0004
VAS pain score	7.5 \pm 1.45	7.055 \pm 1.10	6.30 \pm 1.10	5.2 \pm 0.82	p<0.0001
ICSI	13.33 \pm 1.6	11.2 \pm 1.8	9.55 \pm 1.88	7.16 \pm 1.33	p<0.0001
ICPI	13.05 \pm 1.43	9.94 \pm 1.83	7.5 \pm 1.2	5.2 \pm 0.82	p<0.0001

- At six months following cocktail therapy, a significant majority (72.2%) of patients reported moderately or markedly improved responses; this figure remained high at nine months post-treatment with approximately 77.7% (15) showing improvement in symptom severity levels as well.
- Patients also show improved VAS score with the cocktail regimen.
- One patient relapsed and had to restart on cocktail therapy.
- Two others reported no relief from their symptoms despite treatment..

Response assessment after cocktail therapy

Interval	No response	Mild response	Moderate and marked response
At 6 months treatment	2	3	13 (72.2%)
At 9 months treatment	2	2	14 (77.7%)

Conclusions

- 77.7% of patients diagnosed with PBS experienced amelioration in bladder pain and associated urological symptoms following intravesical instillations of a cocktail solution
- Study was limited by small sample size and brief duration of follow-up
- Additional psychological assessments should be conducted for comprehensive evaluation
- Additional research with longer follow-up is needed to better understand factors and IC's disease specific burden on HRQOL

References

1.Abrams, P. H., Cardozo, L., Fall, M., Griffiths, D., Rosier, P., Ulmsten, U. et al.: The standardisation of terminology of lower urinary tract function: report from the standardisation sub-committee of the international continence society. Neurourology and Urodynamics, 21: 167, 2002.

2.S.S. Patnaik, A.S. Lagana, S.G. Vitale, S. Buttice, M. Noventa, S. Gizzo, et al. Etiology, pathophysiology and biomarkers of interstitial cystitis/painful bladder syndrome.Arch Gynecol Obstet, 295 (6) (2017) pp. 1341-1359.

3.Lukban JC, Whitmore KE, Sant GR. Current management of interstitial cystitis. Urol Clin North Am 2002;29:649-60.