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Aims of Study

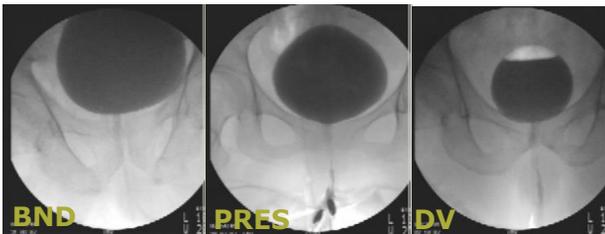
- Interstitial cystitis/bladder pain syndrome (IC/BPS) is a debilitating chronic disease requiring long-term repeated treatment.
- Our recent study has found high prevalence of bladder and bladder outlet dysfunction (BOD) in female IC/BPS by videourodynamic study (VUDS) [1].
- However, little was known about the VUDS findings in male IC/BPS patients.
- We investigated the baseline VUDS diagnoses and determined if the baseline VUDS findings can predict the long-term treatment outcome in male patients with IC/BPS.

Materials and Methods

- Male IC/BPS patients with complete data of a symptom assessment, VUDS, potassium sensitivity test (PST) and cystoscopic hydrodistention were reviewed retrospectively.
- Men with VUDS evidence of benign prostatic obstruction were excluded.
- Those who have history of IC/BPS for more than 5 years were selected and contacted via telephone by a trained assistant.
- O'Leary-Sant Symptom and Problem Index (ICSI, ICPI), pain visual analog scale (VAS) and overall treatment outcome (defined as score -1: worse, 0: 0-25% improvement, 1: 25-50%, 2: >50%, 3: symptom free) were acquired.
- The treatment modalities offered included pentosan polysulfate, hyaluronic acid, hydrodistention, onabotulinumtoxinA injection, electrocautery and platelet rich plasma instillation.
- The baseline clinical and VUDS parameters and diagnoses were analyzed and compared between patients with and without a successful treatment outcome (defined as a score_≥2).

Results

- A total of 48 out of 66 male IC/BPS patients (mean age, 56.5±12.9) were successfully contacted and enrolled in this study.
- Among them, 3 (6.3%) had ulcer type IC/BPS.
- Bladder dysfunction included hypersensitive bladder (HSB) in 37(77.1%) and detrusor overactivity (DO) in 7 (14.6%) patients.
- Bladder outlet dysfunction (BOD) included bladder neck dysfunction (BND) in 6 (12.5%), poor relaxation of external sphincter (PRES) in 20 (41.7%) and dysfunctional voiding (DV) in 1(2.1%) [2].



- 46 (95.8%) men had underwent 2 or more (mean 3.0, range 2-5) treatment methods (Table 1).
- The mean duration of history of IC/BPS was 16.3±9.67(5-46) years.
- The mean ICSI, ICPI and VAS improved significantly (all p=0.000) after long-term treatment (Table 2).
- A successful treatment outcome could be achieved in 19 (39.6%) patients (Table 3).

Disclosures Statement: None

Table 1. The treatment options which have ever been offered in 48 male IC/BPS patients.

Treatment options ^o	No. patients (%) ^o
Sodium pentosan polysulfate ^o	20 (41.7%) ^o
Hyaluronic acid ^o	40 (83.3%) ^o
BOTOX ^o	31 (64.6%) ^o
Enterocystoplasty ^o	2 (4.2%) ^o
Platelet rich plasma ^o	4 (8.3%) ^o
Hydrodistention ^o	47 (97.9%) ^o
No. treatment options ^o	No. patients (%) ^o
1 ^o	2 (4.2%) ^o
2 ^o	12 (25.0%) ^o
3 ^o	19 (39.6%) ^o
4 ^o	14 (29.2%) ^o
5 ^o	1 (2.1%) ^o

Table 2. Changes of IC symptom scores in 27 male IC/BPS patients after long term treatment.

Symptom scores ^o	Baseline ^o	Now ^o	P-value ^o
ICSI ^o	10.3±4.39 ^o	7.41±4.25 ^o	0.000 ^o
ICPI ^o	11.2±4.43 ^o	7.19±4.22 ^o	0.000 ^o
VAS ^o	3.63±2.56 ^o	2.11±2.55 ^o	0.000 ^o

Table 3. The long term treatment outcome in 48 male IC/BPS patients.

Treatment outcome ^o	Score ^o	No. patients (N=48) ^o	% patients ^o
Worse ^o	-1 ^o	4 ^o	8.3 ^o
0-25% improvement ^o	0 ^o	17 ^o	35.4 ^o
25-50% improvement ^o	1 ^o	8 ^o	16.7 ^o
>50% improvement ^o	2 ^o	15 ^o	31.3 ^o
Symptom free ^o	3 ^o	4 ^o	8.3 ^o

The mean baseline postvoid residual urine was significantly smaller in patients with a successful outcome than those without (Table 4).

Nevertheless, there was no significant difference in other clinical or VUDS parameters or diagnoses between the two groups.

Table 4. Comparisons of baseline clinical and videourodynamic parameters and diagnoses between male IC/BPS patients with and without a long term successful treatment outcome.

Parameters ^o	Outcome ≥ 2 (n=19) ^o	Outcome < 2 (n=29) ^o	P value ^o
Age onset (years) ^o	40.8±17.0 ^o	37.1±9.4 ^o	0.335 ^o
Duration (years) ^o	17.7±16.1 ^o	17.4±8.55 ^o	0.932 ^o
ICSI ^o	Baseline ^o 9.30±4.90 ^o	10.9±4.10 ^o	0.416 ^o
	Now ^o 5.00±3.74* ^o	8.75±3.63*# ^o	
ICPI ^o	Baseline ^o 10.4±5.52 ^o	11.6±3.76 ^o	0.317 ^o
	Now ^o 4.47±3.45* ^o	8.86±3.74*# ^o	
VAS ^o	Baseline ^o 3.40±3.34 ^o	3.76±2.08 ^o	0.579 ^o
	Now ^o 1.94±2.11* ^o	3.79±3.26# ^o	
Comorbidities ≤ 1 ^o	9(47.4%) ^o	13(44.8%) ^o	0.863 ^o
≥ 2 ^o	10(52.6%) ^o	16(55.2%) ^o	
Previous operation ^o	8(42.1%) ^o	11(37.9%) ^o	0.772 ^o
Lost follow up > 5 years ^o	5(26.3%) ^o	6(20.7%) ^o	0.650 ^o
Follow up within 5 years ^o	14(73.7%) ^o	23(79.3%) ^o	
FSF (ml) ^o	114.8±45.6 ^o	148.6±76.8 ^o	0.091 ^o
FD (ml) ^o	192.4±63.2 ^o	231.0±94.0 ^o	0.124 ^o
SD (ml) ^o	263.7±89.1 ^o	266.4±99.3 ^o	0.925 ^o
Pdet (cmH2O) ^o	32.3±16.9 ^o	28.4±10.4 ^o	0.354 ^o
Qmax (ml/s) ^o	13.4±5.68 ^o	11.7±4.85 ^o	0.288 ^o
Volume (ml) ^o	304.3±132.9 ^o	273.6±97.6 ^o	0.372 ^o
PVR (ml) ^o	8.59±15.4 ^o	39.0±55.6 ^o	0.033 ^o
CBC (ml) ^o	317.1±123.6 ^o	312.9±91.1 ^o	0.894 ^o
HSB ^o	14(73.7%) ^o	23(79.3%) ^o	0.732 ^o
DO ^o	4(21.1%) ^o	3(10.3%) ^o	0.412 ^o
BND ^o	4(21.1%) ^o	2(6.9%) ^o	0.197 ^o
PRES ^o	8(42.1%) ^o	12(41.4%) ^o	1.000 ^o
DV ^o	0(0%) ^o	1(3.4%) ^o	1.000 ^o
BOD ^o	11(57.9%) ^o	14(48.3%) ^o	0.566 ^o
Positive PST ^o	12(80.0%) ^o	19(82.6%) ^o	1.000 ^o
MBC (ml) ^o	663.2±195.0 ^o	638.3±159.3 ^o	0.631 ^o
Glomerulation ≤ 1 ^o	7(38.9%) ^o	10(34.5%) ^o	0.766 ^o
≥ 2 ^o	11(61.1%) ^o	19(65.5%) ^o	
Ulcers ^o	1(5.3%) ^o	2(6.9%) ^o	1.000 ^o

*p < 0.05 when compared with baseline.

#p < 0.005 when compared between groups.

ICSI and ICPI: O'Leary-Sant symptom index and problem index. VAS: visual analog scale. FSF: first sensation of bladder filling. FD: first desire to void. SD: strong desire to void. CBC: cystometry bladder capacity. Qmax: maximum flow rate. PVR: postvoid residual volume. Pdet: detrusor pressure at Qmax. HSB: hypersensitive bladder. DO: detrusor overactivity. BND: bladder neck dysfunction. PRES: poor relaxation of external sphincter. DV: dysfunctional voiding. BOD: bladder outlet dysfunction. PST: potassium sensitivity test. MBC: maximal bladder capacity under cystoscopic hydrodistention.

References:

- Kuo YC, Kuo HC. Videourodynamic characteristics of interstitial cystitis/bladder pain syndrome-The role of bladder outlet dysfunction in the pathophysiology. NeuroUrol Urodyn. 2018 Mar 5.
- Kuo HC. Videourodynamic analysis of pathophysiology of men with both storage and voiding lower urinary tract symptoms. Urology. 2007 Aug;70(2):272-6.

Conclusions

- HSB and BOD are common findings of VUDS performed in male IC/BPS patients.
- The ICSI, ICPI and VAS scores improved after long term treatment with multiple modalities with an overall successful rate of 39.6%.
- Male patients with a smaller baseline PVR are more likely to be treated successfully.