

SEVERE PAIN PERCEPTION PREDICT SYSTEMIC PHENOTYPE OF INTERSTITIAL CYSTITIS / BLADDER PAIN SYNDROME (IC/BPS)

Hypothesis / aims of study

Interstitial cystitis/painful bladder syndrome is a pelvic pain condition that has been reported to be associated with other regional and systemic pain syndromes as Irritable bowel syndrome (IBS), fibromyalgia (FM), chronic fatigue syndrome (CFS), and depression. Some study considered that mild IC/PBS at baseline was associated with a mild IC/PBS endpoint and chronic fatigue syndrome (CFS), however, predicted a moderate/severe IC/PBS endpoint. Recently, the result from MAPP study showed systemic IC/BPS had more severe pain symptom than regional IC/BPS. However, there is no objective finding regarding association between voiding diary, anesthetic bladder capacity during cystoscopic hydrodistension and non-bladder conditions. The purpose of this study was to examine association between functional, anesthetic bladder capacity and non-bladder conditions in a physician diagnosed of women with IC/BPS.

Study design, materials and methods

This was a retrospective cross-sectional study. Of 175 female patients who were compatible with AUA/SUFU criteria including unpleasant sensation (pain, pressure, discomfort) perceived to be related to bladder with duration >6 weeks were included. All of IC/BPS patients were assessed by cystoscopic hydrodistension and all of them have different severity of glomerulations. These patients were assessed by validated questionnaire including O'Leary-Sant Symptom (ICSI) and Problem Index (ICPI) was used to objectify subjective symptoms. Pelvic Pain and Urgency/Frequency (PUF) questionnaire and VAS pain and urgent score were also completed. Validated voiding diary and anesthetic bladder capacity during 2-minutes hydrodistension were also measured. All patients completed medical history questionnaire for non-bladder condition. Symptomatic duration was also asked. We separated IC/BPS patients into two groups: pure IC/BPS and IC/BPS with comorbid disease. These data were analyzed using independent T test.

Results

Patient demographics show the average age being 41.9±12.8. The mean symptomatic duration is 8.97±7.80 years. There is no association between symptomatic duration and symptom, voiding diary parameter, and anesthetic bladder capacity. There is no difference between ICSI, ICPI, PUF, urgent score and comorbid disease. However, systemic IC/BPS showed more severe pain perception than pure IC/BPS (6.00 ± 2.61 vs 4.90 ± 3.04 , $P=0.02$) (Table 1).

According to validated voiding diary, the mean value of daytime frequency, daytime average voided volume, nocturnal frequency, and nocturnal average voided volume are 14.58±6.91, 103.74±61.9 ml, 3.92±1.86, 101.96±83.53 ml. Systemic IC/BPS showed more day-time voiding volume than pure IC/BPS (120.38 ± 51.3 ml vs 102.87 ± 63.1 ml, $P=0.05$). However, there is no significant association between daytime, night-time frequency and comorbid disease. During cystoscopic hydrodistension, there is no difference between anesthetic bladder capacity and comorbid disease (Table 2). Multiple linear regression model revealed more severe pain predicted systemic type IC/BPS ($B=0.02$, $P=0.04$).

Interpretation of results

Systemic IC/BPS showed more severe pain perception than pure IC/BPS but as same as lower urinary tract symptoms. It is also demonstrated from evidence of voiding diary that systemic IC/BPS showed as same as day-time and night-time frequency to pure IC/BPS. Moreover, even systemic IC/BPS showed more pain than pure IC/BPS, there is no difference in anesthetic bladder capacity during cystoscopic hydrodistension.

Concluding message

Systemic IC/BPS showed more severe pain perception than pure IC/BPS but not lower urinary tract symptoms. However, systemic IC/BPS did not showed smaller anesthetic bladder capacity than pure IC/BPS.

<Table1> Subjective symptoms between pure and systemic IC/BPS using independent T test

	Pure IC/BPS	Systemic IC/BPS	P value
VAS Pain	4.90 ± 3.04	6.00 ± 2.61	0.02*
VAS Urgency	6.44 ± 2.38	7.02 ± 2.06	0.12
ICSI	13.04 ± 3.46	13.20 ± 3.58	0.78
ICPI	11.57 ± 2.93	12.17 ± 3.44	0.28
PUF	19.44 ± 5.74	20.17 ± 6.09	0.47

<Table2> Objective findings between pure and systemic IC/BPS using independent T test

	Pure IC/BPS	Systemic IC/BPS	P value
Day-time frequency	14.46 ± 6.44	14.00 ± 7.51	0.69
Night-time frequency	2.52 ± 2.64	1.91 ± 1.60	0.06
Day-time voiding volume	102.87 ± 63.1	120.38 ± 51.2	0.05*
Night-time voiding volume	111.35 ± 78.2	129.80 ± 97.2	0.21
Anesthetic bladder capacity (2 min)	594.49 ± 173.4	605.89 ± 187.7	0.70

Disclosures

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