

OUTCOMES OF HYDRODISTENSION WITH OR WITHOUT FULGURATION FOR INTERSTITIAL CYSTITIS AND RISK FACTORS PREDICTING THERAPEUTIC FAILURE

Hypothesis / aims of study

Hydrodistension is a first-line non-conservative therapy for interstitial cystitis (IC) without Hunner's lesion. Hydrodistension accompanied by transurethral resection (TUR) is employed for IC with Hunner's lesion. Unfortunately, however, symptoms are likely to recur after these procedures. The aims of this study are to evaluate the outcomes of hydrodistension with and without TUR and to identify risk factors for therapeutic failure.

Study design, materials and methods

IC patients who underwent hydrodistension with or without TUR at our institute from 2007 to 2013 were retrospectively reviewed. All the patients were compatible with NIDDK research criteria and fulfilled three diagnostic requirements of IC recommended by clinical guidelines for interstitial cystitis and hypersensitive bladder: lower urinary tract symptoms, bladder pathology and exclusions of confusable diseases.¹⁾ The symptoms are characterized by bladder hypersensitivity, usually associated with urinary frequency, with or without bladder pain (hypersensitive bladder syndrome symptoms). Bladder pathology was confirmed by Hunner's lesion or glomerulations after hydrodistension. Frequency-voiding chart (FVC) and self-report questionnaires including O'Leary and Sant's symptom index and problem index (OSSI and OSPI) and visual analogue scale for pain (VAS) were used to evaluate severity of symptom. Therapeutic failure was defined as repeating hydrodistension, initiating bladder instillation therapy or using narcotics. Time to therapeutic failure was analysed in relation with comorbidity at the diagnosis and presence of Hunner's lesion. Differences between groups were assessed by t-tests and Mann-Whitney U tests. Log rank test was used to evaluate time to therapeutic failure.

Results

A total of 191 patients were recruited; 126 with Hunner type IC and 65 non-Hunner type IC (Table 1). Failure free rate was higher in Hunner type IC within 15 months; however, it was higher in non-Hunner type IC thereafter and there was no difference between the two types of IC during the whole period (Figure 1).

Prevalence of lumbar spinal canal stenosis (LCS) was higher in non-Hunner type IC (3.9% versus 16.9%, $p=0.002$). The mean time to failure was longer in those without LCS. It was 11 months and 36 months with LCS and without LCS, respectively, in Hunner type IC ($p=0.0087$), and 22 months and 44 months, respectively, in non-Hunner type IC ($p=0.0012$) (Figure 2). There was no concomitant irritable bowel syndrome (IBS) in Hunner type IC and 3 cases (4.6%) in non-Hunner type IC ($p<0.0001$). Time to therapeutic failure was significantly shorter in IBS concomitant cases (Figure 3). About a quarter of patients had history of pelvic surgery in both groups, but the history was not related to time to failure.

Interpretation of results

Hunner type IC is characterized by intense pro-inflammatory reactions in the affected lesion and the whole bladder²⁾, and TUR of Hunner's lesion was reported to produce good outcomes. However our result showed that outcomes fared well until 15 months and turned back in a long term follow-up. In non-Hunner type IC, concomitant LCS and IBS were unfavorable factors. Association of chronic inflammation and comorbidities affecting pelvic sensory system with refractoriness to hydrodistension and/or TUR suggests sensory hyperactivity status in the IC bladder.

Concluding message

Efficacy of fulguration of Hunner's lesion did not last for a long run. Concomitant LCS and IBS are predictive of failure of hydrodistension with or without TUR. These factors should be taken into account in counselling with patients.

Table 1 Patient backgrounds

	HL (n=126)	Non HL (n=65)	P value
Age	65.6	52.6	<0.001
24h frequency	19.0	15.6	0.008
Mean voided volume	99.8ml	121.1ml	0.003
OSSI	15.0	12.5	<0.001
OSPI	12.9	11.6	0.003
VAS	6.7	6.3	0.91
QOL	5.0	5.3	0.9

Table 2 Comorbidities

	HL (n=126)	Non HL (n=65)	P value
Diabetes Mellitus	6 (4.76%)	5 (7.69%)	0.375
Spinal canal stenosis	5 (3.97%)	12 (18.5%)	0.0041*
Cerebral infarction	15 (11.9%)	1 (1.54%)	0.01*
allergy	10 (7.94%)	5 (7.69%)	0.88
Sjogren syndrome	13 (10.3%)	3 (4.62%)	0.22
Other collagen disease	3 (2.38%)	0 (0%)	0.13
Rheumatoid Arthritis	1 (0.79%)	0 (0%)	0.29
Neurodegenerative disease	3 (2.38%)	3 (4.62%)	0.374
History of pelvic surgery	8 (6.35%)	11 (16.9%)	0.018*
Antecedent urinary tract infection	31 (24.6%)	5 (7.69%)	0.0061*
endometriosis	5 (3.97%)	2 (3.07%)	0.864
Irritable bowel syndrome	0 (0%)	3 (4.62%)	0.011*

Figure 1 Failure free rate after hydrodistention in Hunner type and non-Hunner type IC

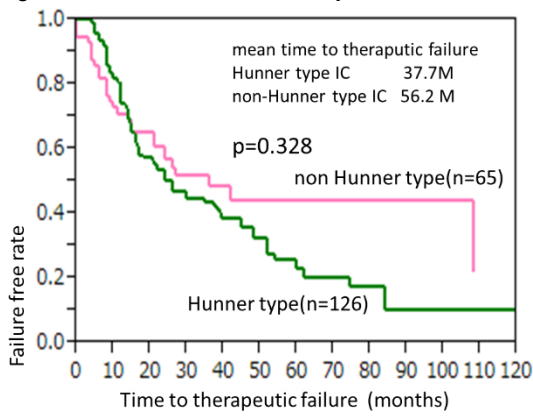


Figure 2 Failure free rate in patients with and without lumbar canal stenosis (LCS)

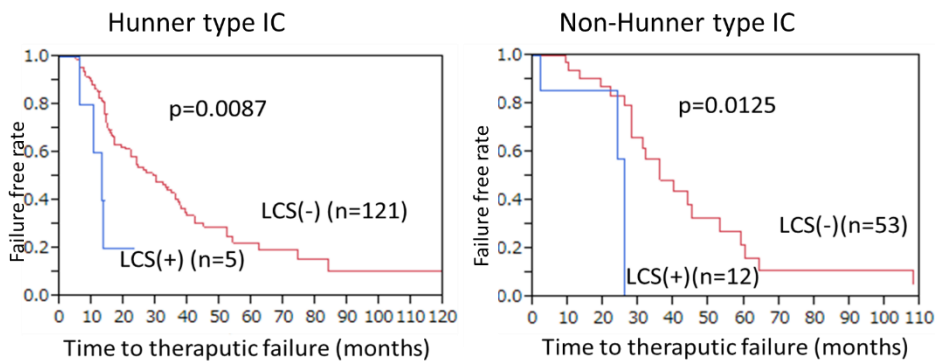
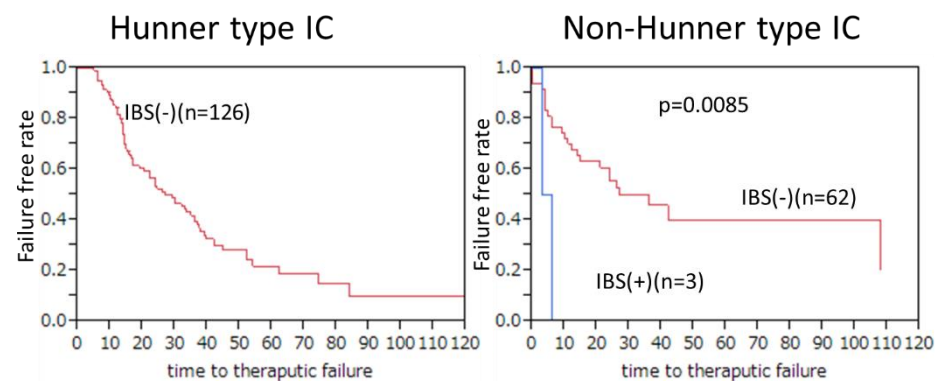


Figure 3 Failure free rate in patients with and without irritable bowel syndrome (IBS)



References

1. Homma Y, et al. Clinical guidelines for interstitial cystitis and hypersensitive bladder syndrome. *Int J Urol.* 16(7):597-615,2009
2. Homma Y, Nomiya A, Igawa Y et al. Increased mRNA expression of genes involved in pronociceptive inflammatory reactions in bladder tissue of interstitial cystitis. *J Urol.*190(5):1925-31,2013

Disclosures

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