58

Kim J J[1], Chung J W[1], Park J S[1], You H W[1], Cho W J[2], Lee K[1]
1. *Department of Urology, Samsung Medical Center, Sungkyunkwan University School of Medicine,* ***2.*** *Department of Urology, Chosun University School of Medicine*

THE THERAPEUTIC RESPONSE OF HYDRODISTENSION FOR INTERSTITIAL CYSTITIS PATIENTS

Hypothesis / aims of study
To determine the therapeutic efficacy of hydrodistension of the bladder for interstitial cystitis(IC) and identify predictive factors of the presence and duration of the therapeutic response

Study design, materials and methods
The study included 117 consecutive patients (22 male, 95 female) treated by hydrodistention of the bladder for IC diagnosed by urodynamic study, cystoscopy, history taking, physical exam, voiding diary, O'Leary-Sant IC Symptom Index (ICSI), O'Leary-Sant IC Problem Index (ICPI). Hydrodistension was performed under general anaesthesia. The presence of the therapeutic response was defined as decrease of ICSI more than 30% from initial ICSI at 1 month after hydrodistension. The duration of therapeutic response was estimated according to Kaplan-Meier methods for survival curves. The clinical factors influencing the presence and duration of therapeutic response were analysed by univariate and multivariate logistic regression model.

Results
From March 2003 to April 2012, 124 hydodistensions of 117 patients were performed including 7 patients of 2-times repetitive hydrodistension. Mean age was 58.2 (range 51-67). Mean follow-up duration was 18.1 (range 1.0-99.3) months. At 1 month after hydrodistension, response (R) group was 54.8% (68/124) and non-response (NR) group was 45.2% (56/124). Day time frequency (OR=0.895, 95% CI: 0.817-0.979, p=0.016) and nocturia (OR=0.698, 95% CI: 0.533-0.916, p=0.009) were independent factors predicting the therapeutic R group at multivariate logistic regression model. In R group, median duration of the therapeutic response was 4.7 months and the rate of sustained response at 6 months and 12 months were 43.9% and 24.9% from Kaplan-Meier methods for survival curves. Daytime frequency was a predicting factor of the therapeutic response duration at univariate analysis, but not independent factor predicting the duration of response at multivariate models. The smaller maximal cystometric capacity (MCC)≤150cc was the only independent factor predicting prolonged therapeutic response at multivariate model (HR 3.943, 95% CI: 1.413-11.002, p=0.009). No patient of the larger MCC>150cc demonstrated the therapeutic response duration longer than 10 months.

	R group (n=68)	NR group (n=56)	p-value
Age	59.2 ± 11.9	57.08 ± 10.78	0.335
Gender, female	83.8 (57)	76.7 (43)	0.326
Hunner's Ulcer	48.5 (33)	44.6 (25)	0.944
Symptom duration	47.7 ± 45.8	43.1 ± 36.6	0.904
Daytime frequency	12.5 ± 3.9	17.4 ± 7.3	<0.001
Nocturia	2.8 ± 1.3	4.76 ± 3.1	<0.001
MCC	249.0 ± 79.7	214 ± 109.8	0.014
Distension volume	628 ± 169.3	561 ± 235.5	0.023
Pre-HD_ICPI	13.7 ± 2.66	13.5 ± 3.00	0.959
Pre-HD_ICSI	16.3 ± 3.0	16.1 ± 2.9	0.842

Interpretation of results
Among the patients underwent hydrodistension under the diagnosis of IC by detailed examination including urodynamic study and cystoscopy, 45.2% of patients demonstrated the therapeutic response at 1 month after treatment. More daytime frequency and nocturia independently predicted the lower therapeutic response at the univariate and multivariate statistical model. In R group, the patients of the smaller MCC≤150cc demonstrated shorter duration of the therapeutic response after adjusting the influence of the other confounding factors.

Concluding message
More daytime frequency and nocturia predicted the lower therapeutic response and shorter response-duration of hydrodistension for IC diagnosed by detailed examination including urodynamic study and cystoscopy. The smaller MCC≤150cc independently predicted the shorter sustentation of therapeutic efficacy in the response group.

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