

COMBINATION WITH CYSTOSCOPIC HYDRODISTENSION AND DIAGNOSTIC LAPAROSCOPY CAN GIVE MORE CLUES ABOUT OUTER AND INNER BLADDER CONDITION IN PATIENTS WITH KETAMINE INDUCED CYSTITIS

Hypothesis / aims of study

The symptoms of ketamine-induced cystitis (KIC) include a range of lower urinary tract symptoms (LUTS) mainly irritative in nature and the patients will complain of intense urgency, extreme frequency and intractable dysuria. Studies suggested that cystoscopy showed ketamine-induced cystitis with ulcerative bladder mucosa and was similar to cystoscopic findings in patients with interstitial cystitis(IC). However, we did not find any publications that reported laparoscopic findings and correlations with cystoscopic hydrodistension in patients with KIC. The aim of this study is to investigate the inner and outer findings of bladder using hydrodistension and laparoscopy

Study design, materials and methods

Six patients compatible with irritative symptoms including frequency, urgency, nocturia, chronic pain, decreased voiding volume accompanied with occasional hematuria were included with ketamine abuse history. 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 was also completed. We practiced the standardized consecutive filling cystometry and we recorded volume at first desire to void (FDV), normal desire to void (NDV), strong desire to void (SDV) and maximum cystometric capacity (MCC). All patients have undergone hydrodistention and cystoscopic maximal bladder capacity (MBC). Cystoscopic hydrodistension with laparoscopy was performed in all patients. The degree of glomerulations and maximal bladder capacity (MBC) under cystoscopic hydrodistention at the intravesical pressure of 80 cm H₂O were also measured. The ovarian, uterine, bladder and pelvic inflammatory condition were also recorded by laparoscopy.

Results

The demographics of the six patients with KIC were a mean age of 25.5±5.3 years. The subjective symptom scores showed severe lower urinary tract symptoms (LUTS) and chronic pelvic pain in the six patients (ICSI:10~20, ICPI:8~16, and PUF:18~30) (Table1). Decreased bladder capacity was noted during urodynamic examination and anesthetic state cystoscopy. Highly significant decreased of values for FDV, NDV, SDV, and MCC in the patients with KIC were observed (49.6±40.1, 60.4±51.1, 72.3±56.1, 93.2±68.9) (Table2). All patients have severe degree of glomerulation. Diagnostic laparoscopy revealed constrictive bladder with adhesion band around bladder and uterine. Our study revealed that the patients with KIC have significant decrease of bladder capacity and constrictive bladder shape by laparoscopy (Figure1).

Interpretation of results

There is not only urothelial inflammation with contact bleeding in cystoscopy but also constrictive bladder shape with some fluid accumulation over Cu-De sac when performing cystoscopic hydrodistension in KIC bladder.

Concluding message

The patients with ketamine-induced cystitis have not only denuded bladder mucosa but also constrictive bladder. These findings may explain why poor therapeutic effect of intravesical therapy was noted.

Table 1 Subjective Symptoms in KIC patients

| Age: 25.5±5.3 years | | | | | | |
|---------------------|-----|------------|--------------|------|------|-----|
| | Age | Pain score | Urgent score | ICSI | ICPI | PUF |
| Case 1 | 23 | 9 | 9 | 20 | 16 | 18 |
| Case 2 | 27 | 7 | 7 | 15 | 16 | 29 |
| Case 3 | 31 | 8 | 8 | 18 | 15 | 30 |
| Case 4 | 24 | 9 | 8 | 15 | 12 | 22 |
| Case 5 | 20 | 10 | 10 | 18 | 14 | 28 |
| Case 6 | 28 | 9 | 9 | 10 | 8 | 23 |

Table 2 Urodynamic and hydrodistension bladder capacity in KIC patients

| Urodynamic exam / Hydrodistension | KIC group |
|---|-------------------|
| FDV | 49.60 ± 40.1 ml |
| NDV | 60.42 ± 51.1 ml |
| SDV | 72.33 ± 56.1 ml |
| MCC | 93.27 ± 68.9 ml |
| Anesthetic maximal bladder capacity 2" | 268.70 ± 168.2 ml |
| Anesthetic maximal bladder capacity 10" | 351.36 ± 216.2 ml |

Figure 1 Constrictive bladder when performing diagnostic laparoscopy



Disclosures

Funding: No **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Committee of Feng-Yuan Hospital **Helsinki:** Yes
Informed Consent: Yes