Purpose: Ketamine related cystitis (KC) is an emerging clinical syndrome characterized by severe bladder pain and small bladder capacity in the patients with history of ketamine abuse, but the actual pathophysiology is still unclear. Most previous case reports had revealed inflammation cells infiltration with urothelium denudation in the KC bladders. However, a comprehensive study of histopathology findings of KC bladders is still lacking. We review the histopathology findings of the KC bladder and its correlation with clinical symptoms.

Materials and Methods: KC patients who were admitted to our hospital were recruited. All patients had intractable urinary tract symptoms which were failure to conservative treatment and were scheduled for supratrigonal partial cystectomy with augmentation enterocystoplasty. The history of ketamine abuse, visual analogue scale (VAS) pain score, cystometric bladder capacity (CBC) maximal bladder capacity under anesthesia were recorded. The bladder specimen taken from partial cystectomy were sent to our pathology department. The specimen were classified into 4 area, including mucosa, submucosa, muscle and subserosa layer. A 4-point scale (0-none, 1-mild, 2-moderate and 3-severe) was used to grade submucosa neutrophil, eosinophil, lymphocyte, plasma cells infiltration and nerve hyperplasia. The urothelium denudation were also examined for inflammatory cell infiltration, fibrosis and nerve hypertrophy. The reviewer specimens taken from ureteral reimplantation were also sent to histopathology review. The clinical symptoms and objective parameters were also correlated with the histopathology finding.

Results: A total of 26 bladder specimens and 4 ureter specimens were reviewed. Mucosa denudation was noted in most bladder specimens, and only 3 bladders (11.5%) had intact urothelium. Inflammatory cells infiltration and nerve hyperplasia were involved in all layers of bladder. Fibrinoid necrosis in submucosa was also found in 4 patients (15.4%). The history of ketamine abuse, VAS, CBC and MBC between all kinds of histopathology finding grades did not have significant difference (all p>0.05). Cessation of ketamine for 3 month also was not associated with inflammation or nerve hypertrophy severity. Ureteral inflammation, nerve hyperplasia and fibrosis were noted in all layers.

Conclusion: Long term ketamine abuse could induce all layers inflammation, nerve hyperplasia and fibrosis in the bladders and ureters. Cessation ketamine for 3 months were not enough for inflammation and nerve hyperplasia recovery in the KC bladder.

PD9-5: GRADE OF NORMALCY IMPROVES INTER-RATERS’ AGREEMENT IN THE INTERPRETATION OF UROFLOWMETRY

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Purpose: Because of low inter-raters’ agreement on specific flow pattern and high inter-raters’ agreement on bell vs. non-bell patterns, we developed a novel classification of uroflowmetry to improve inter-raters’ agreement in interpreting uroflowmetry.

Materials and Methods: Uroflowmetry curves are classified as: grade 1 typical bell; grade 2 bell with significant fluctuations; grade 3 probably bell; and grade 4 non-bell which is further classified as interrupted, staccato, obstructive and plateau patterns. Definition of each grade and typical curves were taught to a junior urologist. First 50 consecutive curves were reviewed independently by the junior and senior urologist. Results of interpretation were compared and discussed to reach consensus. Then both reviewed another 50 curves independently again. Difference in one and two grades is regarded as minor and major difference, respectively. Difference in bell vs. non-bell pattern is regarded as major difference, and difference between abnormal patterns is regarded as minor difference.

Results: Mean age of the 100 patients was 67.8±13.1 years. Of the first 50 curves, 12 (24%) and 3 (6%) were minor and major grade difference; 5 and 6 were minor and major pattern difference. Of the second 50 curves 16 (32%) and 0 were minor and major grade difference; 9 (18%) and 7 (14%) were minor and major pattern difference.

Conclusion: Grade of normalcy may improve inter-raters’ agreement. Through teaching and practice, major grade difference can be avoided, while major pattern difference remained.

PD9-6: NEUROTICISM AND REPRESSOR PERSONALITY TYPE MAY HAVE INFLUENCE ON THERAPEUTIC EFFECT IN PATIENTS WITH INTERSTITIAL CYSTITIS / BLADDER PAIN SYNDROME (IC/BPS)

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Purpose: Interstitial Cystitis / Bladder Pain Syndrome (IC/BPS) is a chronic disease characterized by pelvic pain and lower urinary tract symptoms. Recent studies showed that IC/BPS may be associated with other comorbid diseases, such as mental health disorders. Psychological disorder including depression, anxiety, and mood catastrophizing that function outside of the bladder predict a significant impact on IC/BPS symptoms, especially on pain, hallmark symptom of IC/BPS. Other studies also found that repressors in erectile dysfunction (ED) patients tend to report their complaints in a manner that protects their self-worth as less distressed (depression, physical complaints). The purpose of this study is to examine whether the IC/BPS patients with repressive attitude personality were recovered poorly on bladder symptoms than non-repressors with IC/BPS.

Materials and Methods: This was a prospective study. Of 52 IC/BPS 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 these patients completed measures of pain severity (Visual Analog Scale), bladder symptom severity (IC Symptom Index, IC Problem Index) and Pelvic Pain Scale, Urgency Scale (PUF scale). Cystoscopic hydrodistension was performed in all patients and different degrees of glomerulation were also observed. Hunner ulcer was excluded in this study. Maximal bladder capacity (MBC) during 2 minutes cystoscopic hydrodistension was also recorded. In psychological intervention, the personality questionnaire was collected by the validity scales of Millon Clinical Multiaxial Inventory-III (MCMI-III) for distinguishing three personality types, as repressor, neuroticism and normal groups. Beck Depression inventory (BDI) and Beck Anxiety inventory (BAI) were also recorded for emotional status. After hydrodistension, all patients received intravesical hyaluronic acid instillation therapy within 12 weeks. Then we collected symptomatic data to assess symptom severity and improvement before (baseline) and after (post-treatment) spanning a period of 12 weeks. These data were analyzed using point bi-serial correlation for ANOVA and chi-square to evaluate symptoms and personality types in these three patient’s groups. Significance was set at p < 0.05.

Results: According to personality questionnaire, we divided IC/BPS patients to three personality-type groups as repressor (n = 10), neuroticism (n = 16) and normal groups (n = 26). In patient demographic among these groups, there were no differences in age and sex (P > 0.05) among these three groups. In the baseline, repressor group declare the lowest emotional disturbance in depression and anxiety compared to neuroticism and normal groups (P < 0.01). However, there is no statistical difference in baseline bladder symptoms in repressor group compared to normal group. The trend that repressor group showed mild severity of bladder symptoms compared to normal group in IC/BPS patients was noted. Moreover, neuroticism group showed more severe urgency compared to repressor group (P = 0.006). After 12 weeks of intravesical hyaluronic acid instillation therapy, intra-individual approach analysis shows that only normal group had statistically significant differences between pre- and post-treatment in pain variables (P < 0.01). However, repressor and neuroticism group has no significant improvement of pain to treatment.

Conclusion: Repressor and neuroticism group shows less improvement in bladder pain symptoms. It might imply that effect of treatment is affected by individual character, especially personality affect. Therefore, in addition to treating the disease, psychological intervention focus on different personality type should be provided to improve quality of life of IC/BPS patients.