

## WHAT ARE THE LONG TERM CONSEQUENCES OF RECREATIONAL KETAMINE MISUSE ON THE URINARY TRACT?

### Hypothesis / aims of study

Regular use of recreational Ketamine causes severe damage to the urinary tract. Patients present with a spectrum of debilitating symptoms including bladder pain, urinary frequency and haematuria. Long-term Ketamine misuse can result in end-stage irreversible renal failure.

The aim of this study was to evaluate management strategies and outcomes in patients undergoing surgical intervention following damage to their urinary tract associated with Ketamine use.

### Study design, materials and methods

A retrospective review of prospectively collected data between 2007 and 2015 was performed. Evaluation included CT urogram, cystoscopic evaluation of bladder capacity +/- biopsy. Indications and outcomes for surgical intervention were assessed.

### Results

42 patients were identified. 63% were male and mean age at presentation was 28.7 (range 23-55). All bladder biopsies confirmed an eosinophilic inflammatory infiltrate. A significant proportion of patients (83.3%) were found to have reduced cystoscopic and functional bladder capacity of <300 ml (mean 190 mls, range 70-550).

29 patients were treated conservatively with a view to symptom resolution. 2 patients underwent dilatation for urethral strictures. 4 patients underwent repeated intra-detrusor onabotulinum toxin injection with minimal subjective symptom relief. 2 of these patients proceeded to have major reconstruction. Indications for urinary tract reconstruction included intractable symptoms and/or evidence of ureteric obstruction.

13 patients underwent reconstruction which included simple cystectomy (5/13), substitution cystoplasty (6/13), augmentation cystoplasty (6/13), ileal conduit diversion (1/13), ureteric interposition using ileum (2/13) and appendix Mitrofanoff formation (6/13). Of these patients 53.8% (7/13) had one or more complications requiring additional intervention

Complications included urine leak (1/7), anastomotic leak (2/7), adhesional small bowel obstruction (1/7), wound necrosis (1/7), ureteric stricture (3/7) and Mitrofanoff stenosis (1/7). One patient was lost to follow up and there was 1 death from pneumonia 5 years following and unrelated to surgery.

### Interpretation of results

Of the 42 patients, 31% (13/42) underwent major reconstructive surgery. Of these patients, 53.8% (7/13) had one or more complications requiring additional intervention; either surgical or radiological.

### Concluding message

In a tertiary, high volume reconstructive unit we found Ketamine patients seemed to be at particular risk of significant perioperative complications. There did not appear to be any other common factor apart from their use of Ketamine, and the significant inflammatory change associated with this.

We recommend meticulous preoperative evaluation and multidisciplinary consultation for all patients to determine optimal treatment strategies.

### References

1. Recreational Ketamine: from pleasure to pain. Wood D, Cottrell A, Baker SC, Southgate J, Harris M, Fulford S, Woodhouse C, Gillatt D. BJU Int. 2011 Jun;107(12):1881-4

### Disclosures

**Funding:** N/A **Clinical Trial:** No **Subjects:** NONE