

Ketamine Uropathy: Clinical Experience in a High Prevalence Centre

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Introduction

Longstanding recreational Ketamine abuse leads to Ketamine uropathy causing significant inflammatory urothelial changes. This leads to:

- Storage LUTS
- Small bladder capacity
- Pelvic pain
- Upper tract involvement – hydronephrosis/strictures

Our unit has a high number of patients with Ketamine uropathy. Data from UK centres is limited, and no formal treatment guidelines exist. Recreational Ketamine use is increasing (1).

Aims

We aim to present our experience over an 11-year period with this patient group who often present significant clinical management challenges.

Methods and Materials

All patients with Ketamine uropathy presenting to our urology area network from 2011-2022 were identified through retrospective screening and a prospectively collected local database. Inclusion criteria required established recreational Ketamine use in the presence of typical lower urinary tract symptoms as diagnosed by a urologist. Data collected included the following:

- Patient numbers and demographics
- Radiological findings including upper tract disease
- Management strategies
- Mortality
- Follow-up and outcomes

Results

In total 81 patients were identified with Ketamine uropathy however a significant proportion presented from 2018 onwards (Fig.1). Baseline demographic data is shown in table 1. A large number of patients were lost to follow-up (21/81, 25.9%) however follow-up was not continuous.

Variable	Value (n = 81)
Gender (male, percentage)	59 (72.8%)
Age (median, IQR)	30 (27-34)
Age at presentation (median, IQR)	26 (23-29)
Follow-up time, months (mean, IQR)	34 (8-46)
Hydronephrosis	20 (24.7%)
Diagnosis of mental health illness	25 (30.9%)

Table 1: baseline data on study population with ketamine uropathy

Initial Management

Encouraging abstinence is the first step. Strategies to improve symptoms included:

- Anticholinergic/ β -3 agonist prescribing (62/81, 75.3%), dual therapy in 31/81 (38.3%)
- Intravesical therapy such as Cystistat/Botox (14/81, 17.3%)
- Cystodistension (60/81, 74.1%)

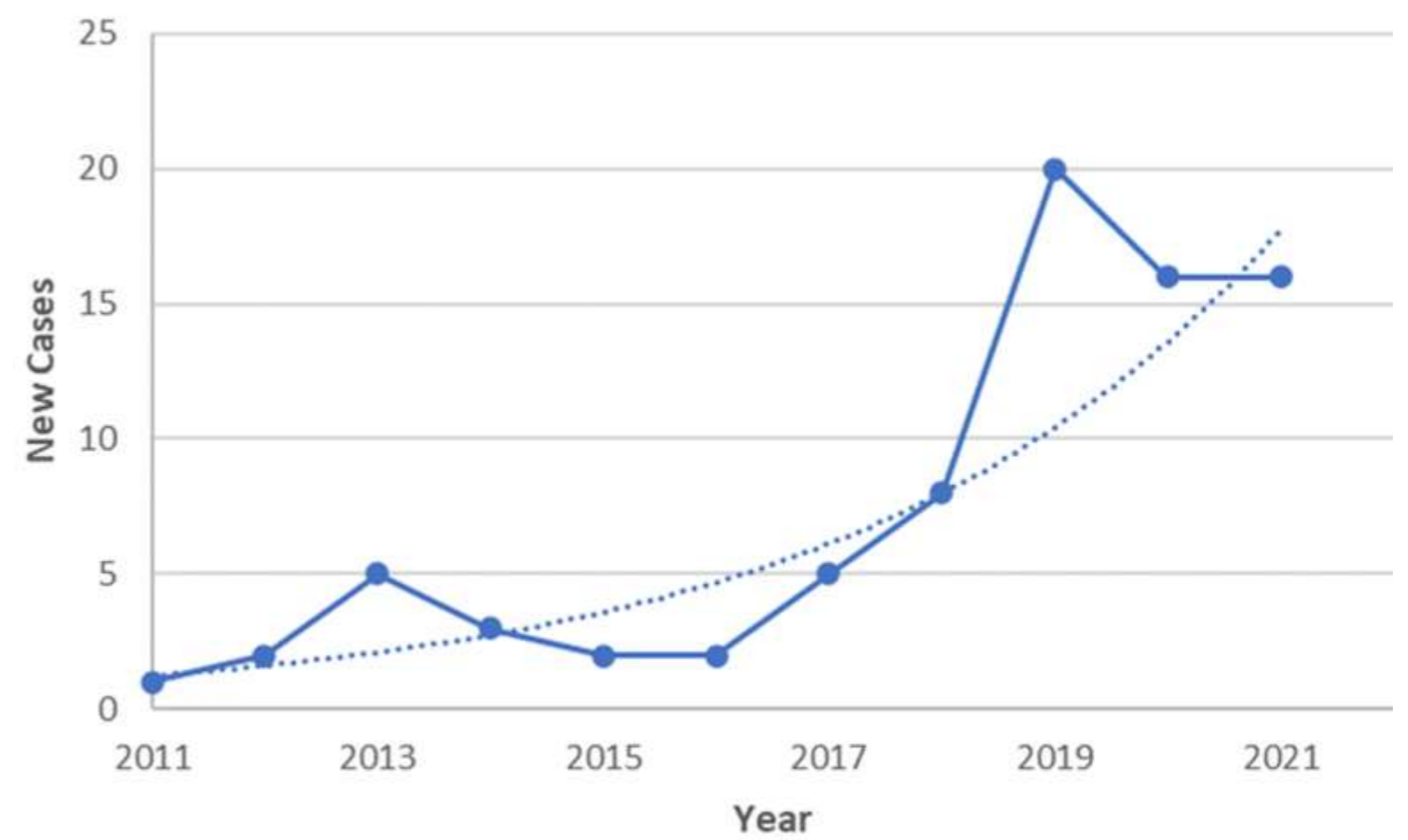


Figure 1: incidence of new diagnoses of ketamine uropathy per year (2011-2021)

Upper-tract Disease

There was hydronephrosis in 20/81 (24.7%) of patients and nephrostomy insertion was required in six. Total length of follow-up and raised GGT were associated with hydronephrosis (Table 2). Four patients have developed ureteric strictures. One patient underwent subtotal cystectomy and substitution cystoplasty.

Variable	No Hydronephrosis (n=50)	Hydronephrosis (n=20)	p-value
Gender - male	38 (76%)	11 (55%)	0.076
Age	29.8 \pm 4.37	31.2 \pm 4.93	0.131
Age at presentation	26.2 \pm 4.36	27.4 \pm 4.44	0.152
Follow-up time (months)	27.2 \pm 22.9	56.2 \pm 39.9	0.003
Serum GGT (U/L)	339 \pm 320	1188 \pm 1526	0.012
Serum ALT(U/L)	105 \pm 102	197 \pm 180	0.021
eGFR (ml/min/1.73 m²)	88.8 \pm 5.59	65.4 \pm 30.4	0.001
Bladder capacity (ml)	270 \pm 126	235 \pm 123	0.202

Table 2: Univariate analysis comparing patients with and without hydronephrosis. Figures represented as mean \pm standard deviation or a percentage value for categorical data

Mortality

Two patients (2.5%)

- Hepatic failure due to Ketamine cholangiopathy
- Sepsis secondary to pyelonephritis, hydronephrosis and renal abscess

Conclusions

- We present a large cohort of patients with Ketamine uropathy from a small town in the UK which is unusual
- The incidence is rising, in-keeping with increasing recreational Ketamine use and should be of concern to urologists nationally
- Abstinence is a key
- Many patients are lost to follow-up

Limitations

- Data collection mostly retrospective and from cystodistension
- Many patients lost to follow-up
- Lack of validated symptom score

References

1. Drug misuse in England and Wales: year ending March 2020 - Office for National Statistics [Internet]. [cited 2022 Sep 12].