Early diagnosis is vital to avoid irreversible bladder damage from ketamine use

Addressing ketamine bladder syndrome

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Ketamine bladder syndrome is a relatively new worldwide phenomenon. First documented in 2007, the syndrome is a reported side-effect to ketamine use. Over the past few years, clinicians in Asia, Canada, the US, Europe and, more recently, the UK have reported treating teenage ketamine misusers who have presented with severe – and in some cases irreversible – bladder damage (Mason et al, 2010; Chu et al, 2008).

Ketamine
Ketamine is a veterinary anaesthetic that has hallucinogenic properties; it also impairs memory so misusers often wake up from a high with no recollection of what they have done. Ketamine can be taken orally, inhaled or injected into muscle. The drug is legitimately prescribed to patients who have severe neuropathic pain or for malignant or end-of-life pain control.

In recreational or criminal use, ketamine is known as a “date rape drug” because of its dissociated amnesia effect. It is now used as a recreational drug among young adults and its increased popularity has led to concerns regarding the long-term health consequences of using it (Mason et al, 2010).

Cottrell and Gillatt (2008) noted that ketamine was as cheap and easy for some teenagers to obtain as cigarettes and alcohol. It is commonly used at rave parties, and is known as a “club drug”; it is often mixed with ecstasy. It has several street names, such as “Cat Valium”, “Jet K”, “Kit Kat”, and “Special K Super K”. Sometimes referred to as poor man’s cocaine, ketamine has gained popularity in the dance scene because of the high and “k-hole” (outer body experience) it can give.

In 2006, the Misuse of Drugs Act made ketamine a class C substance (Cottrell and Gillatt, 2008).

Ketamine bladder syndrome
A delay in the presentation and diagnosis of ketamine bladder syndrome may lead to a worsening of lower urinary tract symptoms (LUTS) and long-term damage to the bladder. Earlier recognition and referral to urologists could prevent deterioration and make treatment or management of ketamine bladder syndrome more effective.

Specialist nurses who run continence clinics need to be particularly vigilant for ketamine bladder syndrome. Information on the impact of ketamine on the bladder is also relevant to a broad range of nurses practising in a variety of settings, including district and practice nurses, and those working in accident and emergency departments. Nurses who work in drug rehabilitation or substance misuse assessment units and genitourinary medicine may also find it useful to know about this condition.

Implications for health professionals
Ketamine use is popular in Asian communities, particularly Chinese. In Hong Kong, the government is educating people about the dangers of the drug by advertising in newspapers and on television, as well as on public transport. Canada also has reports that ketamine misuse is spreading rapidly through its Chinese community in Canada. As use of the drug starts to spread through mainland Europe and it becomes more prevalent across the UK, we can learn from the Asian and Canadian experiences about their preventive strategies and activities they have engaged in to raise awareness of the problems that arise as a result of ketamine misuse.

Misuse of ketamine is likely to be under-reported (Chu et al, 2008). The challenges for both users and health professionals are that people become psychologically dependent on the drug and find it difficult to give it up. It is vital that those who are dependent on ketamine first seek help via local drug teams and rehabilitation...
Urinary tract symptoms

1. Ketamine is a veterinary anaesthetic that has hallucinogenic properties and impairs memory.

2. Bladder symptoms associated with ketamine abuse are consistent with those of interstitial cystitis, ulcerative cystitis and lower urinary tract symptoms.

3. Ketamine abusers are often aware of these side effects but reluctant to seek help.

4. Prompt recognition of the syndrome and referral to urologists could prevent further damage to the bladder and make treatment more effective.

5. A multidisciplinary approach is needed to manage patients with urinary tract pathology associated with ketamine use.

Assessment may involve examining the bladder wall.

International Continence Society standardised terminology of the lower urinary tract has been used to describe the symptoms (Abrams et al, 2002) (Box 1).

Patients may experience some or all of the following symptoms:

- Increased daytime frequency: Voiding too often. Ketamine causes the bladder to shrink and become fibrotic, so it can only hold a small amount of urine at a time.
- Urgency: A sudden, compelling desire to urinate, which is difficult to defer.
- Urge urinary incontinence: Involuntary leakage accompanied by urgency.
- Increased bladder sensation: A persistent desire to void or a constant sensation of fullness in the bladder that is unrelieved by urination.
- Pelvic, bladder and or urethral pain: Suprapubic or urethral pain related to bladder filling. It can develop suddenly and severely, particularly as the bladder fills with urine and on voiding.
- Haematuria: The appearance of blood in the urine, as the bladder can become ulcerated.


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bladder wall (Colebunder and Van Erps, 2008). Bladder capacity is also reduced dramatically. Normal bladder capacity may be 500ml, but some ketamine addicts have developed a small, fibrosed bladder that can hold only 50ml of urine or less.

Treatment
Evidence on the effectiveness of treatments for ketamine bladder syndrome is ambiguous and still emerging.

Experts recommend individuals abstain from ketamine and the use of therapies that can help reduce irritation and inflammations. But Wang et al (2010) argued ketamine dependence appeared to be much more difficult to manage than treating the ketamine-associated bladder dysfunction itself. In a reported case series, only three out of 10 patients successfully managed to quit the habit despite intensive drug rehabilitation. For the three who successfully stopped ketamine use six to 12 months later, their urinary symptoms and discomfort continued to improve (Wang et al, 2010).

But symptom improvement does not always happen. Mason et al (2010) found that one patient required a cystectomy (removal of the bladder) and formation of a neobladder for symptom control, two were managed to have reconstructive surgery and one requested a long-term catheter to manage their symptoms. Urethral indwelling catheters are used in some cases to provide relief from the suprapubic pain and urgency (Cottrell and Gillatt, 2008).

Treatments reported in the literature are often those used for interstitial cystitis. These include oral medications (pentosan polysulfate, amitriptyline, hydroxyzine) and intravesical (bladder) instillations, for example heparin and pentosan polysulfate but are used with variable degrees of success (Tsai et al, 2009).

More research needs to be done to help us understand the underlying pathology and mechanisms of the damage to the bladder caused by ketamine misuse, and to help develop prevention and treatment programmes.

But the literature has reported some success in reducing symptoms and improving voiding through substitution cystoplasty (a neobladder that is a new reservoir created from bowel) (Chu et al, 2008). In Hong Kong and Bristol, there have been reports of how bladder augmentation has been used to expand bladder capacity in severe cases. Unfortunately, for one of the patients who continued ketamine use after surgery, it resulted in more serious complications (Chu et al, 2008).

What is clear from the literature is this problem is complex and there is no clearly defined treatment. Perhaps the most important strategy for health professionals to focus on is prevention they need to take the necessary steps to raise awareness of this distressing problem among multidisciplinary teams.

Conclusion
Early diagnosis is essential to effectively manage ketamine-induced bladder pathology. Researchers have found that, in many cases, symptoms can improve once individuals stop using the drug. These messages, along with the right advice about referral for treatment, need to be disseminated quickly. It is essential that nurses and doctors in primary care or those working with vulnerable teenagers and young adults are encouraged to ask these clients if they have used or are using ketamine.

Drug and substance misuse teams need to develop joint working and inter-referral pathways for clinicians in urology and continence, and vice versa.

Continence services may see a rise in referrals for advice and requests for incontinence pads or devices that aid urine containment. Continence nurses will need to become more familiar with this condition so they can help ketamine users control their symptoms, and support urologists who may be seeing an increase in referrals for ketamine-induced complications.

References