Ketamine: a misunderstood analgesic?

Clinicians shouldn't be put off by its reputation as an anaesthetic and drug of abuse

Ketamine is well known as an intravenous anaesthetic agent with analgesic properties. It is also becoming well known as a drug of abuse. Less well known, however, is the fact that oral ketamine is a useful analgesic agent in cancer and chronic non-malignant pain. Indeed, its reputation as a drug of abuse may be making clinicians overcautious about its use for pain relief.

In anaesthetic practice high plasma and brain concentrations of ketamine result in dissociative anaesthesia, amnesia, a rise in arterial pressure, increased heart rate and cardiac output, and raised intracranial pressure with relative preservation of airway reflexes and respiration. Ketamine became established for use in hypovolaemic patients and in difficult locations such as battlefields because of its safety. Reports have also suggested relatively few serious adverse effects using the oral route or at subanaesthetic doses,[1 2] which is also in keeping with our clinical experience. One of the major factors curtailing the use of oral ketamine is its central nervous system effects (emergent phenomena such as alterations in body image and mood, floating sensations, vivid dreams, hallucinations, delirium and drowsiness).[1–3] These may occur to a lesser extent with subanaesthetic doses given orally.[2]

These central nervous effects, particularly the hallucinatory effects, are what make ketamine attractive as a recreational drug. Known on the street as special K, super K or K, ketamine is pharmacologically similar to lysergic acid diethylamide (LSD) and phencyclidine (PCP or angel dust). Its emergence as a drug of abuse led the UK's Home Office to categorise it as a class C drug at the beginning of 2006.

It is also unlicensed for analgesic and oral use. The lack of licensing has been a problem for many effective analgesics, such as antidepressants and anticonvulsants. Licensing involves a stringent examination of quality, safety, and efficacy that drug companies have to do to be able to market a drug. This costly process may not be worth investing in for an additional, relatively small scale, use for an existing drug. The fact that a drug isn't licensed for analgesic use should lead to extra caution, but it should not prohibit appropriate prescribing.

Because of ketamine's reputation as a drug of abuse and because it is unlicensed for analgesia, most centres managing patients with chronic pain would consider simple analgesics, local treatments, antidepressants, anticonvulsants, and opioids ahead of ketamine. Yet despite these difficulties, ketamine has found a clinical role in the treatment of refractory neuropathic pain, such as post-herpetic neuralgia, post-amputation pain, spinal ischaemia, brachial plexopathy, HIV and cancer neuropathy; it is also effective in nociceptive pain, including myofascial and ischaemic pain.[1–3 4 5] This role is related to its action as an antagonist at the *N*-methyl D-aspartate (NMDA) glutamate receptor[1–3] since activation of this receptor is thought to be important in the pathogenesis of some chronic pain states.[1–3] Clearly vigilance for cognitive and psychotropic disturbance is required, particularly during initiation and the titration phase. The importance of cardiovascular changes in chronic prescribing is uncertain and patients should be monitored regularly.

The question arises whether ketamine is suitable for long term shared care arrangements. There are sound reasons for shared care, including issues of patient safety, clinical effectiveness, prescriber safeguard, risk management, and other clinical governance arrangements. Family practitioners are understandably cautious about entering into shared care agreements, but we have identified centres where arrangements are in place. Ketamine is best initiated in specialist centres because of the complexity of patient assessment, treatment decision making, and initial monitoring. However, once established on ketamine, patients require relatively simple clinical monitoring. Although the prescribing practitioner carries the legal responsibility for a prescribed medicine and must be competent in this task, we suggest that family practitioners may continue to prescribe ketamine to patients already established on it if they are supported well by specialist centres.

There is legitimate concern about the potential for misuse of ketamine and it is stigmatised by its introduction as an anaesthetic agent. Nevertheless, an emerging body of evidence supports oral ketamine as an effective analgesic in cancer and chronic non-malignant pain. While prescribers must remain vigilant, this should not deter appropriate prescribing any more than concern about heroin abuse should deter the use of morphine.

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