

## Ketamine

Quibell R, Prommer EE, Mihalyo M, Twycross R, Wilcock A

### **Quote:**

"The analgesic effects of ketamine have been utilized in a wide range of clinical settings using various regimens and routes of administration.

### **Postoperative analgesia:**

Two systematic reviews of 37 RCTs of subanesthetic doses of ketamine as an adjunct to opioid-based postoperative analgesia concluded that:

- IV and ED ketamine reduce opioid requirements and possibly chronic post-surgical pain
- CIVI (typically 120-600 microgram/kg/h) is best for surgery associated with high opioid requirements, although a single IV dose (typically 150 microgram/kg) may suffice for minor surgery
- adding ketamine to IV patient-controlled analgesia (PCA) is not effective.

### **Chronic non-cancer pain:**

A review of subanesthetic doses of ketamine for chronic non-cancer pain (mostly neuropathic but also ischemic, fibromyalgia, post-whiplash, etc.) identified 29 RCTs and concluded that:

- ketamine provides relief
  - undesirable effects can limit its use
  - because of a lack of data, long-term use should be restricted to a controlled trial.
- There is RCT evidence of benefit in complex regional pain syndrome type 1.

### **Cancer pain:**

A systematic review of ketamine as an adjunct to opioids in cancer pain found only two studies of sufficient quality and concluded that there was insufficient robust evidence to reach a conclusion. Thus, in patients with cancer, evidence of ketamine's efficacy as an analgesic is mainly from case reports, retrospective surveys or uncontrolled studies in patients with refractory neuropathic, bone and mucositis-related pain. Generally, ketamine is used in addition to morphine or an alternative strong opioid when further opioid increments have been ineffective or precluded by unacceptable undesirable effects. When used in this way, ketamine is generally administered PO or SC/CSCI. It also can be administered IM, IV, SL, intranasally, PR and spinally (preservative-free formulation). However, for spinal routes, concerns have been raised about the potential for neurotoxicity with long-term use. Ketamine has been given by CIVI in adults and children in combination with opioids (fentanyl, morphine) and midazolam to control intractable cancer pain and agitation.

### **Miscellaneous:**

Ketamine can provide analgesia during painful procedures, e.g., change of burns dressings. Topical ketamine has been applied to the skin in various non-cancer pains, and used as an oral rinse in radiation-induced mucositis.<sup>53</sup>