Worcestershire Acute Hospitals NHS Trust

Ketamine infusion for pain relief in Adult patients

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Key Amendments

Date	Amendment	Approved by
January 2023	Document approved with no changes	Anaesthetics Governance/ SCSD Governance meeting

Introduction

The majority of postoperative pain is controlled using simple analgesics, opioids or central neuraxial blockade. Opioids are known to produce tolerance and hyperalgesia. Ketamine is an anaesthetic agent with analgesic properties in sub anaesthetic doses. Ketamine exerts its main analgesic effect by antagonism of NMDA receptors and modulates central sensory processing of pain. Ketamine has been shown to have a potent antihyperalgesic effect and can counteract opioid-induced hyperalgesia and prevent the development of opioid tolerance.(1)
Ketamine infusions can be used in certain circumstances such as surgery associated with high analgesic requirements, refractory neuropathic pain, existing opioid tolerance, allergy to opioids or intolerance of side effects.

Details of Guideline

Ketamine infusions should only be used in the Critical care units or Surgical and Vascular High Dependency Units. Ketamine infusions should be prescribed on an “Injectable Medicines” prescription chart.

A small dose of intravenous ketamine usually 2.5-5mg and no more than 10mg may be administered by an Anaesthetist or member of the Acute Pain team to assess efficacy before commencing an infusion. It is important to inform the patient that they may feel a little strange before administration of the test dose. Most patients notice a spaced out sensation which is tolerated much better if they are pre-warned. If judged to be effective and well tolerated, an infusion is commenced.

200mg ketamine should be made up to 40ml using 0.9% Saline, giving a concentration of 5mg/ml.
Infusion rate is between 0-3ml/hr

Contraindications

Absolute Contraindications:

Allergy to ketamine
Acute Porphyria

Relative Contraindications

Ischaemic heart disease
Uncontrolled hypertension
Raised intracranial pressure
Raised intraocular pressure
Psychosis

Side Effects

Hypertension
Tachycardia
Diplopia
Nystagmus
Rash
Nausea and Vomiting
Hallucinations
Hypersalivation
At higher doses sedation may occur. This is more common when ketamine is prescribed with other sedative agents eg. high doses of opioids, anticonvulsants and benzodiazepines.

Patients may experience a sense of dissociation from reality, dysphoria and rarely vivid dreams or hallucinations. If these symptoms occur, reducing the infusion rate may be effective whilst still providing analgesia. If symptoms persist, discontinue the infusion.