

### **Protocol for the use of ketamine in palliative care.**

**Route:** Continuous subcutaneous infusion (CSCI) is preferred. Intravenous infusion (IV) may be used if site intolerance develops, or special patient needs.

**Dose:** Starting dose of ketamine is 2mg /hr for both CSCI and IV routes.

**Titration:** Ketamine dose may be adjusted every 12 to 24 hours until adequate pain control is achieved or intolerable side effects.

1. *Pain control inadequate, no side effects or s.c. site problems:* Increase by 1 mg /hr until at 4mg /hr, thereafter ketamine dose increases can be 1-2 mg /hr.
2. *Pain control inadequate/ s.c. site problems:* If not cleared by daily s.c. site rotations then change to IV route at same dose.
3. *Pain control adequate but experiencing side effects attributable to Ketamine:* if side effects mild, then reduce ketamine by 50%, and titrate upwards once tolerance to side effects has developed. If side effects severe i.e respiratory depression, hallucinations, excess salivation, hypertension, agitation, then stop ketamine infusion until side effects dissipate. Ketamine may be restarted once side effects dissipate at 50% of previous dose. If side effects continue at doses < 1mg/hr then ketamine should be discontinued.

**Opioid dosing:** For all patients consider reducing opioid dose when starting ketamine

1. If patient on stable opioid doses with < 3 breakthrough analgesic doses /24hours reduce opioid dose by 25-50%.
2. If patient receiving > 6 breakthrough analgesia doses over 24 hours then initially reduce opioid by 10%. Reassess opioid dose every 24 hours.

**Prophylaxis of psychotomimetic side effects:** Haloperidol 1mg b.d s.c. or PO. Or a benzodiazepine e.g Clonazepam 0.5 to 1 mg h.s, or Midazolam infusion. Reassess need for prophylaxis after 5 days of ketamine infusion.

**Monitoring:** (1) Respiratory rate, Heart rate, Blood pressure,  
(2) Mental status and level of sedation.  
(3) Pain score on VAS.

Evaluate at time zero, then q20 minutes for 1<sup>st</sup> hour (after each dose titration monitor q30 minutes for first hour). Once the dose of ketamine is stabilized routine monitoring at the discretion of the nurse/physician is sufficient.

**Stop ketamine** infusion and notify physician if:

- (1) Systolic blood pressure drops by more than 30%.
- (2) Respiratory rate drops to less than 8 /minute.
- (3) Patient has profound sedation.

**Notify Physician:** if patient experiences: Vomiting, hallucinations, irrational behaviour, excess salivation. Increase in systolic blood pressure by > 30% of baseline.

