EMERGENCY MEDICINE KENYA FOUNDATION
emergencymedicinekenya.org

Analgesia Chart

Drug	Dosage	Equianalgesic dose	Onset/Peak Effect	Duration of Action	Adverse Effects	Comments/Caveats
Morphine	IV - 0.1mg/kg; max. 0.3mg/kg SC - 0.1-0.2mg/kg	10mg	IV - Onset 3-5 mins; Peak effect 15-30 mins SC – Onset 15-30 mins	IV - 3 –4 hrs SC – 4 hrs	Respiratory depression Hypotension partly due to histamine release	**Acute severe pain (trauma)** or **persistent pain.** Morphine is better preferred for **obstetric pain**.
Fentanyl	IV - 0.5 – 3 µg/kg over 3-5mins	100µg	IV - Immediate onset, Peak effect 2-3mins SC – Onset 7 - 15mins	IV – 30 - 45mis SC – 1 – 2 hrs	Chest wall rigidity and respiratory depression may occur with rapid IV administration	**Acute severe pain. (trauma)** Fentanyl is preferred for a **rapid onset of analgesia** in acutely distressed patients. **Fentanyl** is preferred for patients with **hemodynamic instability** or **renal insufficiency**
Pethidine	IV - 0.5-1mg/kg SC - 1-2mg/kg	75 mg	IV - 1-3 mins SC - 30-90 mins	IV – 2 - 4 hrs SC – 3 – 4 hrs	High doses may cause respiratory depression, agitation, muscle fasciculations, seizures or histamine induced hypotension	**Moderate-to-severe pain** (migraine, trauma, acute abdominal pain) It may be used in **obstetric practice** to relieve labour pain. Pethidine has an analgesic potency approximately equal to **one-fifth** that of morphine. Pethidine has an active metabolite (nor-meperidine) that causes neuro excitation (apprehension, tremors, delirium, and seizures) and may interact with antidepressants (contraindicated with MOI and best avoided with SSRIs), so it is **NOT RECOMMENDED** for repetitive use. It is also **highly addictive.**
Tramadol	IV/SC - 50-100mg over 3-5mins Max 400mg/d	80mg	IV/SC – 45 mins	IV/SC - 9 – 10 hrs	**> 400 mg/d** are associated with an **increased risk of seizures.**	**Moderate-to-severe pain.** **Tramadol** is **5 to 10 times less potent** than morphine. There is consequently an absence of respiratory depression, a low sedative effect, and less potential for dependence. There is a **high incidence of nausea and vomiting**. Slow administration over **3 - 5 minutes** decreases the incidence of nausea and vomiting. Tramadol does not promote the release of histamine.
Paracetamol	IV – 15mg/kg	-	IV – 15mins (at end of infusion)	IV – 4hrs		**Mild-to-moderate pain** Can be used to supplement opioid analgesics
Diclofenac	IV – 75mg IM – 75mg	-	IV – 5-10 mins IM – 15mins	IV – 6-8hrs IM – 6-8hrs	• Gastrointestinal bleeding • Bleeding secondary to platelet inhibition, and • Development of renal insufficiency	**Mild-to-moderate pain.** Can be used to supplement opioid analgesics e.g. renal colic **All NSAIDs** elevate SBP (median **5 mmHg**). This effect predisposes to the development of congestive heart failure and may contribute to the risk of accelerated atherothrombotic disease. Patients with hypovolemia or hypo perfusion, the elderly, and those with pre-existing renal impairment may be more susceptible to **NSAID-induced renal injury.**

IM administration is **generally NOT RECOMMENDED** due to its multiple disadvantages: Painful administration, Unpredictable absorption, Complications involving tissue fibrosis and abscesses, and Rapid declines in analgesic effect.
Subcutaneous (SC) administration provides **similar pharmacokinetics** with greater patient comfort. The SC route should replace the **IM** route **for opioids.**