

Drug Name: Fentanyl Citrate

Trade Name: Sublimaze,

Class:

Revised: November 18, 2018

- Synthetic Opiate, Narcotic Analgesic
- Opiate
- Schedule II Controlled Substance

Mechanism of Action:

Fentanyl is a powerful synthetic opiate with mechanism of action similar to Morphine. It is considered both faster acting and of shorter duration than Morphine.

Interacts with opiate receptors decreasing pain impulse transmission at the spinal cord level and higher in the CNS. Fentanyl is a potent μ -opiate receptor agonist.

Also causes peripheral vasodilatation increasing venous capacitance and decreases venous return (chemical phlebotomy) by depressing the responsiveness of alpha-adrenergic receptors.

Indications:

- Moderate to Severe Pain
- Adjunct for Intubation

Contraindications:

- Hypovolemia
- Hypotension
- Myasthenia Gravis (causes severe muscle rigidity/)
- Patients who have taken MAOI (Anti-depressants such as Nardil and Parnate) within 14 days. MAOIs may cause paradoxical excitation, and in some cases seizures, hyperthermia, hypertension, and death.
- Hypersensitivity
- Head injury

Precautions:

- Respiratory depression
- Severe heart disease
- Geriatrics
- Pregnancy (C) (*increases to D if used for prolonged periods or high doses close to term*)
- May worsen bradycardia or heart block in inferior MI (*vagotonic effect*)
- Liver Failure/Kidney failure (may prolonged duration)

Dosage:

Doses are highly variable and based on institutional guidelines and patient laboratory values. Double check orders with transferring physician.

Loading Dose:

- IV/IO: 1 - 4 mcg/kg over 5-10 minutes PRN,

Infusion:

- IV/IO: 1 - 5 mcg/kg/hour,
- Titrate in 0.5 mcg/kg/hour increments

Onset:

- IV, IN, IO: 1-3 minutes
- IM:10-20 minutes

Duration:

- 1-2 hours (typical, see precautions)
- Peak effects in 30 minutes

Side Effects:

- Dizziness
- Altered L. O. C.
- Hallucinations
- Euphoria
- Mental impairment
- Hypotension
- Seizures (rare)
- Lightheadedness
- Bradycardia, Tachycardia
- N/V
- CNS Depression
- Respiratory Depression
- Muscle Rigidity

Interactions:

- CNS depressants may enhance effects (antihistamines, antiemetics, sedatives, hypnotics, barbiturates, and alcohol.
- No not mix in line with heparin

PEARLS

Close monitoring of SPO₂, ETCO₂ and respiratory status is required.

Fentanyl infusions are provided multiple different concentrations and volumes. Double check all infusions to prevent a medication error.

- **Fentanyl MUST be given slowly on a pump, as chest wall muscle rigidity, seizures, and hypotension have been associated with rapid administration.**
- Typically supplied in 100 mcg/2 ml concentration, although multiple different concentrations and volumes are available. Double check to prevent medication errors.
 - Infusions are often (but not always) provided in a 4 – 16 mcg/ml mcg/ml. Double check and confirm prior to administration/continuation of infusion.
- Since it decreases both preload and afterload it may decrease myocardial oxygen demand.
- Fentanyl is metabolized in the liver, excreted by the kidneys, and stored in body fat.