HYDROmorphone

Warnings	Classification	Alternate Names
high alert medication (see Potential Hazards section)	opioid analgesic	DILAUDID

Indications

- symptomatic relief of severe pain
- treatment of opioid use disorder
- Indications and/or prescribing restrictions apply

Reconstitution and Stability

- store vials at room temperature and protect from light
- a yellowish discolouration may develop; this has not been associated with a loss of potency

Compatibility

- compatible with dextrose 5%, sodium chloride 0.9%, dextrose-sodium chloride combinations, and lactated ringers

Preparation and Administration

Administration Route	Approved	Preparation and Administration Instructions	Required Monitoring
Subcutaneous	YES	*opioid use disorder*: ▪ doses less than 25 mg, use 10 mg/mL vial ▪ doses of 25 mg or more, use 50 mg/mL vial	Intermediate Monitoring
Continuous Subcutaneous Infusion	YES	**standard solution concentrations**: 2 mg/mL: 100 mg in 50 mL; 200 mg in 100 mL 10 mg/mL: ○ remove 10 mL from 50 mL bag, then add 500 mg to bag ○ remove 20 mL from 100 mL bag, then add 1000 mg to bag 50 mg/mL: transfer 2500 mg to an empty sterile bag (empty bag obtained from stores or pharmacy) *rate must be controlled with an infusion pump*	Intermediate Monitoring
Intramuscular	YES	*opioid use disorder*: ▪ doses less than 25 mg, use 10 mg/mL vial ▪ doses of 25 mg or more, use 50 mg/mL vial	Intermediate Monitoring

Preparation and Administration table continues on next page. This monograph has 3 pages.

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continuation of Preparation and Administration table

Administration Route	Approved	Preparation and Administration Instructions	Required Monitoring
IV direct	YES	1 mg or less: dilute 2 mg (1 mL from 2 mg/mL vial) with 9 mL NS or SWFI to make a 0.2 mg/mL concentration; discard excess volume in syringe before administration of calculated dose. doses greater than 1 mg: use either 2 mg/mL or 10 mg/mL vial; dilute dose to 5 mL with NS or SWFI administer slowly over at least 2 to 3 minutes ○ *opioid naïve patients,* doses of 0.5 mg or greater should be administered IV intermittent ○ *highly opioid tolerant patients*, 50 mg/mL vial may be used on a case specific basis ○ *opioid use disorder*: ▪ IV doses must be given IV direct ▪ doses less than 25 mg, use 10 mg/mL vial ▪ doses of 25 mg or more, use 50 mg/mL vial ▪ administer undiluted, flush slowly over 2 to 3 minutes: with 10 mL NS flush (for peripheral IV) with 20 mL NS flush (for central line e.g. PICC/CVC)	Intermediate Monitoring
IV intermittent	YES	dilute in 50 mL; infuse over 15 to 30 minutes	Intermediate Monitoring
Continuous IV infusion	YES	**standard solution concentrations**: 0.5 mg/mL: 50 mg in 100 mL 2 mg/mL: 100 mg in 50 mL; 500 mg in 250 mL 10 mg/mL: ○ remove 10 mL from 50 mL bag, then add 500 mg to bag ○ remove 20 mL from 100 mL bag, then add 1000 mg to bag 50 mg/mL: transfer 2500 mg or 5000 mg to an empty sterile bag (empty bag obtained from stores or pharmacy) *rate must be controlled with an IV infusion pump*	Intermediate Monitoring
Patient Controlled Analgesia (PCA)	YES	**syringe standard solution concentration:** 0.6 mg/mL in NS; *rate must be controlled with a PCA pump* **BC Women's Hospital**: 0.2 mg/mL in NS; *via CADD pump*	Intermediate Monitoring or per PCA site protocol
Epidural	YES	**bolus by physician only** or per epidural site protocol continuous epidural infusion - **initiated by physician** (use preservative-free solution) **standard solution concentration:** 10 mcg/mL: in NS 250 mL *rate must be controlled with an epidural pump*	Intermediate Monitoring or per epidural site protocol
Intrathecal	YES	**initiated by physician** (use preservative-free solution) **standard solution concentrations:** 0.1 mg/mL: 10 mg in NS 100 mL 0.2 mg/mL: 20 mg in NS 100 mL	Intermediate Monitoring or per intrathecal site protocol

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Dosage

Dosing is individualized based on patient response and tolerance.

Usual dosing for opioid naïve patient:

- **IV direct**: 0.1 to 0.4 mg every 6 to 10 minutes until analgesia achieved; usual maximum 2 mg/hour
- **subcutaneous and IM**: 0.5 to 1 mg every 3 to 4 hours
- **IV intermittent**: 0.5 to 1 mg every 3 to 4 hours
- **continuous IV infusion or continuous subcutaneous infusion**: 0.1 to 0.6 mg/hour titrated to response; there is no maximum dose (palliative patients may require greater than 20 mg/hour)
- **epidural**: 0.5 to 2 mg; may follow with epidural infusion of 0.1 to 0.2 mg/hour as per site specific protocol
- **intrathecal**: dose as per site protocol.

Opioid tolerant patient:

- *opioid use disorder:*
    - Single doses up to 200 mg or higher IV Direct/IM/SUBCUT and daily total doses of up to 500 mg or higher have been used.
    - Dose is determined based on previous use, and no maximum dose has been established.

Switching from oral to parenteral routes:

- subcutaneous or IM dose is one-half the oral immediate release dose given at the same interval
- continuous IV or subcutaneous infusion dose is one-half the oral dose per 24 hours

Potential Hazards of Parenteral Administration

- respiratory/circulatory depression and orthostatic hypotension (may be increased with rapid IV injection)
- pain and/or burning at the subcutaneous injection site
- mild erythema may occur at the IM injection site
- antidote: naloxone
- **confirm resuscitative equipment is readily available**
- high alert medication:
    - HYDROmorphone vials or ampoules containing more than 2 mg
    - when given by these routes: epidural infusions, intrathecal, patient controlled analgesia

Important Implications

Contraindications/Cautions

- caution in patients with convulsive disorders, cranial injuries, respiratory insufficiency, cardiac arrhythmias, reduced blood volume,
- geriatric or debilitated patients, patients with hepatic dysfunction or severe renal dysfunction and those on other CNS depressants should receive reduced doses and carefully titrated.
- Pregnancy/Lactation: refer to Lexicomp or Micromedex

Side effects

- respiratory depression, circulatory depression and orthostatic hypotension
- restlessness, nightmares, tremors, euphoria, dizziness, confusion
- nausea, vomiting, constipation, pruritis

Monitoring

- severity of pain, time and frequency of breakthrough pain

Other

- HYDROmorphone is at least 5 times more potent than morphine.