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levorphanol (lee-vor-fan-o-l)

Lev-Dromoran

Classification

Therapeutic: opioid agonists

Pharmacologic: opioid analgesics

Schedule II

Pregnancy Category C

Indications

Moderate to severe pain.

Action

Binds to opiate receptors in the CNS, altering perception of and response to pain. Produces generalized CNS depression. Therapeutic Effects: Decreased pain.

Pharmacokinetics

Absorption: Well absorbed following oral and subcut administration.

Distribution: Extensive.

Metabolism and Excretion: Mostly metabolized by the liver.

Half-life: 12–16 hr; may be as long as 30 hr with chronic dosing.

TIME/ACTION PROFILE (analgesic effect)

ROUTE ONSET PEAK DURATION
PO 10–60 min 90–120 min 4–5 hr
Subcut unknown 60–90 min 4–5 hr
IV unknown within 20 min 4–5 hr

Contraindications/Precautions

Contraindicated in: Hypersensitivity; OB, Lactation: Avoid chronic use during pregnancy or lactation.

Use Cautiously in: Head trauma; Increased intracranial pressure; Severe renal, hepatic, or pulmonary disease; Hypothyroidism; Adrenal insufficiency; Alcoholism; Undiagnosed abdominal pain; Prostatic hyperplasia; Geri: Geriatric or debilitated patients (dose suggested).

NURSING IMPLICATIONS

Assessment

● Assess type, location, and intensity of pain prior to and 90–120 min following PO, 60–90 min following subcut, and 20 min (peak) following IV administration. When titrating opioid doses, increases of 25–50% should be administered until there is either a 50% reduction in the patient’s pain rating on a numerical or visual analogue scale or the patient reports satisfactory pain relief. A repeat dose can be safely administered at the time of the peak if previous dose is ineffective and side effects are minimal.

● Use caution (see Appendix B) should be used when changing routes or when changing from one opioid to another.

Concurrent use of levorphanol with sedatives, hypnotics, and/or alcohol increases the risk of respiratory depression, coma, and death. The patient should be observed closely for evidence of drug accumulation, and the dose of levorphanol should be reduced or the dose interval increased to avoid clinical drug accumulation. In the event of drug accumulation, respiratory depression may be reversed with naloxone (Narcan) or pentazocine (Talwin). Naloxone and pentazocine are partial agonists at opioid receptors and are capable of precipitating withdrawal in physically dependent patients. Naloxone can reverse respiratory depression, cardiac depression, and mental status changes associated with overdose. Naloxone and pentazocine also precipitate withdrawal in opioid-dependent patients. The use of naloxone and pentazocine in overdose situations has been associated with seizures in physically dependent patients.

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Assess BP, pulse, and respirations before and periodically during administration. If respiratory rate < 10/min, assess level of sedation. Dose may need to be decreased by 25–50%. Initial drowsiness will diminish with continued use.

Assess bowel function routinely. Prevention of constipation should be instituted with increased intake of fluids and bulk and with laxatives to minimize constipating effects. Stimulant laxatives should be administered routinely if opioid use exceeds 2–3 days, unless contraindicated.

Lab Test Considerations: May q1-2 plasma amylase and lipase concentrations.

Toxicity and Overdose: If an opioid antagonist is required to reverse respiratory depression or coma, naloxone (Narcan) is the antidote. Dilute the 0.4-mg ampule of naloxone in 10 mL of 0.9% NaCl and administer 0.5 mL (0.02 mg) by direct IV push every 2 min. For children and patients weighing > 40 kg, dilute 0.1 mg of naloxone in 10 mL of 0.9% NaCl for a concentration of 10 mcg/mL and administer 0.5 mcg/kg every 2 min. Titrate dose to avoid withdrawal, seizures, and severe pain.

Potential Nursing Diagnoses

Acute pain (Indications)
Disturbed sensory perception visual, auditory (Side Effects)
Risk for injury (Side Effects)

Implementation

High Alert: Accidental overdose of opioid analgesics has resulted in fatalities. Before administering, clarify all ambiguous orders; have second practitioner independently check original order, dose calculations, and infusion pump settings.

Explain therapeutic value of medication prior to administration to enhance the analgesic effect.

Regularly administered doses may be more effective than prn administration. An algesic is more effective if given before pain becomes severe.

Coadministration with nonopioid analgesics may have additive analgesic effects and permit lower opioid doses.

Medication should be discontinued gradually after long-term use to prevent withdrawal symptoms.

PD: May be administered with food or milk to minimize GI irritation.

IV: Subcut: Patients receiving parenteral therapy should be lying down and remain recumbent to minimize side effects for at least 30–60 min.

Administration

Direct IV: Diluent: May be administered undiluted. Rate: Administer slowly, over 3–5 min. Rapid administration may lead to increased respiratory depression, hypotension, and circulatory collapse.

Storage Compatibility: Glucopentose.

Y-Site Compatibility: aminocaproic acid, amphotericin B liposome, bleomycin, carboplatin, cisplatin, cyclophosphamide, cytarabine, docetaxel, doxorubicin hydrochloride, epinephrine, etoposide, epothilone, estramustine, estradiol, etoposide phosphate, fenoldopam, fludarabine, fluorouracil, idarubicin, ifosfamide, irinotecan, levofloxacin, methotrexate, mitoxantrone, oxaliplatin, paclitaxel, pamidronate, propofol, quinupristin/dalfopristin, rituximab, rocuronium, sodium acetate, tacrolimus, vincristine, virofene.

Y-Site Incompatibility: pantoprazole, trastuzumab.

Patient/Family Teaching

Instruct patient on how and when to ask for pain medication.

Instruct patient to take levorphanol as directed. If dose is less effective after a few weeks, do not increase dose without consulting health care professional.

Medication may cause drowsiness or dizziness. Advise patient to call for assistance when ambulating or smoking. Caution patient to avoid driving or other activities that require alertness until response to the medication is known.

Advise patients to change positions slowly to minimize orthostatic hypotension.

Advise patients to avoid concurrent use of alcohol or other CNS depressants.

Advise ambulatory patients that nausea and vomiting may be decreased by lying down.

Encourage patient to turn, cough, and breathe deeply every 2 hr to prevent atelectasis.

Evaluation/Desired Outcomes

Decrease in severity of pain without a significant alteration in level of consciousness or respiratory status.

Why was this drug prescribed for your patient?