**SUFentanil (soo-fen-ta-nil)**

**Sufenta**

**Classification**

Therapeutic: opioid analgesics, anesthetic adjuncts

Pharmacologic: opioid agonists

**Schedule II**

Pregnancy Category C

**Indications**

IV: Analgesic supplement to general anesthesia, usually with other agents (short-acting barbiturates, neuromuscular blockers, and inhalation anesthetics) to produce balanced anesthesia in patients who are intubated and ventilated. Indications for maintenance of anesthesia (with oxygen or oxygen/nitrous oxide and a neuromuscular blocker).

Epidural: Obstetrical pain during labor and vaginal delivery (in combination with local anesthetics).

**Postoperative pain.**

**Action**

Binds to opioid receptors in the CNS, altering the response to and perception of pain.

**Therapeutic Effects:**

Supplement in anesthesia. Decreased pain.

**Pharmacokinetics**

**Absorption:** IV administration results in complete bioavailability.

**Distribution:** Does not readily penetrate adipose tissue; crosses the placenta, enters breast milk.

**Metabolism and Excretion:** Mostly metabolized by the liver; some metabolism in small intestine; in neonates, further in neonates with cardiovascular disease.

**Half-life:** 2.7 hr (during cardiopulmonary bypass); in neonates, further in neonates with cardiovascular disease.

**TIME/ACTION PROFILE (analgesia†)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
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<tbody>
<tr>
<td>IV</td>
<td>within 1 min</td>
<td>unknown</td>
<td>5 min</td>
</tr>
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</table>

†Respiratory depression may last longer than analgesia

**Contraindications/Precautions**

**Contraindicated in:** Hypersensitivity, cross-sensitivity among agents may occur; known intolerance.

**Use Cautiously in:** Diabetes; Severe pulmonary or hepatic disease; CNS tumors; intracranial pressure; Head trauma; Adrenal insufficiency; Uremia; Chronic alcoholism; renal failure; Hypoventilation; depression; arrhythmias; hypertension; hypotension; Myasthenia gravis.

**Adverse Reactions/Side Effects**

**CNS:** confusion, postoperative delirium, postoperative depression, postoperative hangover, CNS depression, respiratory depression, bradycardia, circulatory depression, hypotension, bradycardia, cardiac arrest.

**EENT:** blurred/double vision.

**Resp:** apnea, bronchoconstriction, allergic bronchospasm, respiratory depression.

**CV:** tachycardia, arrhythmias, bradycardia, circulatory depression, hypotension.

**GI:** nausea, vomiting, constipation.

**Derm:** facial itching.

**MS:** skeletal and thoracic muscle rigidity.

**Misc:** allergic reactions including ANAPHYLAXIS.

**Interactions**

**Drug-Drug:** Avoid use in patients who have received MAO inhibitors within the previous 14 days (may produce unpredictable, potentially fatal reactions).

CNS and respiratory depression with other CNS depressants, including alcohol, antihistamines, antidepressants, other sedative/hypnotics, and other opioids.

Risk of hypotension with benzodiazepines, cimetidine, erythromycin, or other agents that decrease hepatic metabolism may prolong duration of recovery.

**Route/Dosage**

**Low-Dose Anesthesia Adjunct**

**IV (Adults):** 0.5–2 mcg/kg initially, supplemental doses of 10–25 mcg may be given as needed (not to exceed 1 mcg/kg/hr when administered with nitrous oxide and oxygen).

**Moderate-Dose Anesthesia Adjunct**

**IV (Adults):** 2–8 mcg/kg initially, supplemental doses of 10–50 mcg may be given as needed (not to exceed 1 mcg/kg/hr when administered with nitrous oxide and oxygen).
Primary Anesthesia (with 100% Oxygen)

**IV (Adults):** 8–30 mcg/kg initially; supplemental doses of 25–50 mcg may be given as needed or a continuous infusion may be used.

**IV (Children):** Cardiac surgery—10–25 mcg/kg initially, followed by maintenance doses of up to 25–50 mcg; clearance in neonates is lower, adjust dose accordingly.

Obstetrical analgesia

**Epidural (Adults):** 70–15 mcg in combination with 10 mL of 0.0125% bupivacaine, may be repeated after one hour for two additional doses.

Postoperative pain (unlabeled)

**Epidural (Adults):** 10–15 mcg in 10 mL of 0.9% sodium chloride; may be repeated after one hour for two additional doses.

**Epidural (Children):** Cardiovascular surgery—10–25 mcg/kg initially, followed by maintenance doses of up to 25–50 mcg; clearance in neonates is lower, adjust dose accordingly.

NURSING IMPLICATIONS

**Assessment**
- Monitor respiratory rate and BP frequently throughout therapy. Report significant changes immediately. The respiratory depressant effects of sufentanil may last longer than the analgesic effects. Monitor closely.
- IV, Epidural: Assess type, location, and intensity of pain before and 3–5 min after IV administration when sufentanil is used to treat pain.
- Lab Test Considerations: May cause q4 serum amylase and lipase concentrations.
- Toxicity and Overdose: Symptoms of toxicity include respiratory depression, hypertension, arrhythmias, bradycardia, and asystole. Atropine may be used to treat bradycardia. If respiratory depression persists after surgery, prolonged mechanical ventilation may be required. 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 over 40 kg, dilute 0.1 mg of naloxone in 10 mL of 0.9% NaCl for a concentration of 10 mcg/mL and administer 0.02 mg/kg every 1–2 min. Titrate dose to avoid withdrawal, seizures, and severe pain. Administration of naloxone in these circumstances, especially in cardiac patients, has resulted in hypotension and tachycardia, occasionally causing left ventricular failure and pulmonary edema.

**Implementation**
- **High alert:** Accidental overdosage of opioid analgesics has resulted in fatalities. Before administration, clarify all ambiguous orders; have second practitioner independently check original order, dose calculations, and infusion pump settings.
- **Do not confuse sufentanil with fentanyl.**
- **Benzodiazepines may be administered before or after administration of sufentanil to reduce the induction dose requirements, decrease the time to loss of consciousness, and produce amnesia. This combination may also increase the risk of hypotension.**
- **High alert:** Opioid antagonists, oxygen, and resuscitative equipment should be readily available during the administration of sufentanil. Sufentanil should be administered IV only in monitored anesthesia care settings (operating room, emergency department, ICU) with immediate access to life support equipment and should be administered only by personnel trained in resuscitation and emergency airway management.

**IV Administration**
- **Direct IV:** Diluent: Administer undiluted. Rate: Administer slowly over 1–3 min. Slow IV administration may reduce the incidence and severity of muscle rigidity, bradycardia, or hypotension. Neuromuscular blocking agents may be administered concurrently to decrease muscle rigidity.
- **Y-Site Compatibility:** aclizumab, alemtuzumab, alfentanil, amikacin, amphotericin B cholesteryl, amphotericin B lipid complex, amphotericin B liposome, anidulafungin, argatroban, ascorbic acid, aztreonam, aztreonam, buprenorphine, butorphanol, calcium chloride, calcium gluconate, calcium chloride, calcium gluconate.
CONTINUED

SUfentanil

carboplatin, carmustine, cyclophosphamide, cisplatin, cytarabine, doxorubicin, etopo-
dine, epirubicin, fosfomycin, gemcitabine, gemcitabine, fludarabine, fluorouracil, fol-
ate, fluorouracil, folic acid, furosemide, ganciclovir, gentamicin, gemcitabine, genta-
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Patient/Family Teaching

- Discuss the use of anesthetic agents and the sensations to expect with the patient before surgery.
- Explain pain assessment scale to patient.
- Caution patient to change positions slowly to minimize orthostatic hypotension.
- May cause dizziness and drowsiness. Advise patient to call for assistance during ambulation and transfer or avoid driving or other activities requiring alertness for 24 hr after administration during outpatient surgery.
- Instruct patient to avoid alcohol or other CNS depressants for 24 hr after administration for outpatient surgery.

Evaluation/Desired Outcomes

- General anesthesia.
- Reduced motor activity.
- Pronounced analgesia.

Why was this drug prescribed for your patient?