octreotide (ok-tree-oh-tide)
SandoSITOST, SandoSITOST LAR

**Classification**
Antidiarrheals, hormones

**Pregnancy Category B**

**Indications**
Treatment of severe diarrhea and flushing episodes in patients with GI endocrine tumors, including metastatic carcinoid tumors and nonmetastatic pancreatic peptide tumors (VIPomas). Treatment of acromegaly. 

**Unlabeled Use:** Treatment of diarrhea in AIDS patients, patients with fistulas, chemotherapy-induced diarrhea, and graft-versus-host disease-induced diarrhea. Treatment of hyperinsulinemic hypoglycemia of infancy. Management of postoperative chylothorax.

**Action**
Suppresses secretion of serotonin and gastrointestinal peptides. Increases absorption of fluid and electrolytes from the GI tract and increases transit time. Decreases levels of serotonin metabolites. Also suppresses growth hormone, insulin, and glucagon.

**Therapeutic Effects:**
Control of severe flushing and diarrhea associated with GI endocrine tumors.

**Pharmacokinetics**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Absorption:</strong></td>
<td>Well absorbed following subcut administration and IM administration of depot form.</td>
</tr>
<tr>
<td><strong>Distribution:</strong></td>
<td>Unknown.</td>
</tr>
<tr>
<td><strong>Protein Binding:</strong></td>
<td>65%.</td>
</tr>
<tr>
<td><strong>Metabolism and Excretion:</strong></td>
<td>Extensive hepatic metabolism; 32% excreted unchanged in urine.</td>
</tr>
<tr>
<td><strong>Half-life:</strong></td>
<td>1.5 hr.</td>
</tr>
</tbody>
</table>

**TIME/ACTION PROFILE** (control of symptoms)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcut, IV</td>
<td>unkown</td>
<td>unkown</td>
<td>up to 1 wk</td>
</tr>
<tr>
<td>IM (LAR)</td>
<td>unkown</td>
<td>1 wk</td>
<td>up to 1 wk</td>
</tr>
</tbody>
</table>

**Contraindications/Precautions**

**Contraindicated in:** Hypersensitivity.

**Use Cautiously in:** Gallbladder disease (risk of stone formation); Renal impairment (dose may be necessary); Hyperglycemia or hypoglycemia (changes in blood glucose may occur); Fat malabsorption (may be aggravated). 

**Adverse Reactions/Side Effects**

**CNS:** Dizziness, drowsiness, fatigue, headache, weakness. 

**EENT:** Visual disturbances. 

**CV:** Bradycardia, edema, orthostatic hypotension, palpitations, GI, kidney, abdominal pain, cholelithiasis, diarrhea, fat malabsorption, nausea, vomiting. 

**Derm:** Flush. 

**Endo:** Hyperglycemia, hypoglycemia, hyperthyroidism. 

**Local:** Injection-site pain. 

**Interactions**
Drug-Drug: May alter requirements for insulin or oral hypoglycemic agents. May alter levels of QTc-prolonging agents.

**Route/Dosage**

**Carcinoid Tumors**

| Subcut, IV (Adults): | Sandostatin— | 100–600 mcg/day in 2–4 divided doses during first 2 wk of therapy (range 50–1500 mcg/day). |
| IM (Adults): | Sandostatin LAR— | 20 mg q 4 wk for 2 mo; dose may be further adjusted. |

**VIPomas**

| Subcut, IV (Adults): | Sandostatin— | 200–300 mcg/day in 2–4 divided doses during first 2 wk of therapy (range 150–750 mcg/day). |
| IM (Adults): | Sandostatin LAR— | 20 mg q 2 wk for 2 mo; dose may be further adjusted. |

**Suppression of Growth Hormone (Acromegaly)**

| Subcut, IV (Adults): | Sandostatin— | 50–100 mcg 5 times daily; titrate to achieve growth hormone levels: ≤5 ng/mL or 8.4 IU/mL (males) or ≤2.2 IU/mL (females) (usual effective dose = 100–200 mcg 5 times daily). |
| IM (Adults): | Sandostatin LAR— | 20 mg q 4 wk for 3 mo, then adjusted on the basis of growth hormone levels. |
**Antidiarrheal**

**Subcut, IV (Adults):** AIDS-related—100–1800 mcg/day (unlabeled).

**Subcut, IV (Children):** 1–10 mcg/kg q 12 hr or 1 mcg/kg IV bolus followed by a continuous infusion of 1 mcg/kg/hr.

**Persistent Hyperinsulinemic Hypoglycemia of Infancy**

**IV (Infants):** Initially 2–10 mcg/kg/day divided q 12 hr up to 40 mcg/kg/day divided q 6–8 hr.

**Chylothorax**

**Subcut (Adults):** 50–100 mcg q 8 hr.

**Subcut (Children):** 40 mcg/kg/day.

**IV (Children):** 0.3–10 mcg/kg/hr continuous infusion.

**NURSING IMPLICATIONS**

**Assessment**

- Assess frequency and consistency of stools and bowel sounds throughout therapy.
- Monitor pulse and BP prior to and periodically during therapy.
- Assess patient's fluid and electrolyte balance and skin turgor for dehydration.
- Monitor diabetic patients for signs of hypoglycemia. May require reduction in requirements for insulin and sulfonylureas and treatment with diazoxide.
- Assess for gallbladder disease; assess for pain and monitor ultrasound examinations of gallbladder and bile ducts prior to and periodically during prolonged therapy.
- Lab Test Considerations: Monitor 5-HIAA (urinary 5-hydroxyindoleacetic acid), plasma serotonin, and plasma substance P in patients with carcinoid; plasma vasoactive intestinal peptide (VIP) in patients with VIPoma; and free T4 and serum glucose concentrations prior to and periodically during therapy in all patients.
- Monitor quantitative 72-hr fecal fat and serum carotene determinations periodically for possible drug-induced aggravations of fat malabsorption.
- May cause a slight increase in liver enzymes.
- May cause a slight decrease in serum thyroxine (T4) concentrations.

**Potential Nursing Diagnoses**

- Diarrhea (Indications)

**Implementation**

- Do not confuse Sandostatin (octreotide) with Sandimmune (cyclosporine).
- Do not use solution that is discolored or contains particulate matter. Ampules should be refrigerated but may be stored at room temperature for the days they will be used. Discard unopened solution.
- Subcut: Administer the smallest volume needed to achieve required dose to prevent pain at injection site. Rotate injection sites; avoid multiple injections in the same site within short periods of time. Preferred injection sites are the hip, thigh, or abdomen.
- Subcutaneous injection between meals and at bedtime to avoid side effects.
- Allow medication to reach room temperature prior to injection to minimize local reactions associated with injection site.
- IV: Mix IV solution by adding diluent included in kit. Administer immediately after mixing into the gluteal muscle. Avoid using deltoid site due to pain of injection.
- Patients with carcinoid tumors and VIPomas should continue to receive subcut dose for 2 wk following switch to IM depot form to maintain therapeutic level.

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**IV Administration**

- Direct IV: Diluent: May be administered undiluted. Rate: Administer over 3 min.
- Continuous Infusion: Diluent: Infuse at 50–200 ml of 0.9% NaCl or D5W. Concentration: 1.5–250 mcg/ml. Rate: Infuse over 15–30 min.
- Y-Site Compatibility: acyclovir, alfentanil, allopurinol, amifostine, amikacin, amoxicillin and amoxicillin/clavulanate, amphotericin B colloidal, amphotericin B lipid complex, amphotericin B liposome, amphotericin B lipid complex, amphotericin B liposome, amphotericin B colloidal, aminophylline, ampicillin, ampicillin/sulbactam, anidulafungin, argatroban, atracurium, aztreomycin, azithromycin, aztreomycin, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azathioprine, azath
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octreotide
cisplatin, cyclophosphamide, doxorubicin, fosphenytoin, imipenem/cilastatin, insulin, irinotecan, isoproterenol, ketorolac, labetalol, leucovorin calcium, leucovorin, leucovorin, levamisole, leuprolide, lenalidomide, loperamide, loperamide, loratadine, losartan, lurasidone, luteinizing hormone-releasing hormone agonist, lysozyme, methotrexate, midazolam, mitomycin, mitoxantrone, morphine, mycophenolate, nafcillin, nalbuphine, naloxone, nesiritide, nicardipine, nitroglycerin, nitroprusside, norepinephrine, ondansetron, oxaliplatin, paclitaxel, palonosetron, pamidronate, pancuronium, pentamidine, pentazocine, pentobarbital, phenobarbital, phentolamine, phenylephrine, piperacillin/tazobactam, potassium acetate, potassium bicarbonate, potassium chloride, potassium phosphates, procainamide, prochlorperazine, promethazine, propranolol, quinapristin/dalfopristin, ranitidine, remifentanyl, rocuronium, sodium acetate, sodium bicarbonate, sodium phosphates, streptozocin, succinylcholine, sufentanil, tacrolimus, teniposide, thiopental, thiotepa, ticarcillin/clavulanate, tigecycline, tirofiban, tobramycin, topotecan, trimethoprim/sulfamethoxazole, vancomycin, vaspertim, vecuronium, verapamil, vinblastine, vincristine, vinorelbine, voriconazole, zidovudine, zoleodronic acid.

● Y-Site Incompatibility: dantrolene, diazepam, micafungin, phenytoin.

Patient/Family Teaching
● May cause dizziness, drowsiness, or visual disturbances. Cautions patient to avoid driving or other activities requiring alertness until response to medication is known.
● Advise patient to change positions slowly to minimize orthostatic hypotension.
● Home Care Issues: Instruct patients administering octreotide at home on correct technique for injection, storage, and disposal of equipment.
● Instruct patient to administer octreotide exactly as directed. If a dose is missed, administer as soon as possible, then return to regular schedule. Do not double doses.

Evaluation/Desired Outcomes
● Decrease in severity of diarrhea and improvement of electrolyte imbalances in patients with carcinoid or VIP-secreting tumors.
● Relief of symptoms and suppressed tumor growth in patients with pituitary tumors associated with acromegaly.
● Management of diarrhea in patients with AIDS.

Why was this drug prescribed for your patient?