pramlintide (pram-lin-tide)

**High Alert**

**Therapeutic Class:** antidiabetics

**Pharmacologic Class:** hormones

**Pregnancy Category:** C

**Indications**

Used with mealtime insulin in the management of diabetics whose blood sugar cannot be controlled by optimal insulin therapy; can be used with other agents (sulfonylureas, metformin).

**Action**

Acts as a synthetic analogue of amylin, an endogenous pancreatic hormone that helps to control postprandial hyperglycemia; effects include slowed gastric emptying, suppression of glucagon secretion and regulation of food intake.

**Therapeutic Effects:** Improved control of postprandial hyperglycemia.

**Pharmacokinetics**

**Absorption:** 30–40% absorbed following subcutaneous administration.

**Distribution:** Does not appear to significantly cross the placenta.

**Metabolism and Excretion:** Metabolized by the kidneys; major metabolite has pharmacologic properties similar to the parent compound.

**Half-life:** 48 min.

**TIME/ACTION PROFILE (effect on blood sugar*)

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<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
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<tbody>
<tr>
<td>Subcut</td>
<td>rapid</td>
<td>20 min</td>
<td>3 hr</td>
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**Contraindications/Precautions**

**Contraindicated in:** Hypersensitivity, inability to identify hypoglycemia, gastropaaresis or need for medications to stimulate gastric motility, poor compliance with current insulin regimens or self-monitoring, HbA1c > 9%. Reacting severe hyperglycemia with insulin within the last 6 mo, requiring treatment; GI: Insulin is the drug of choice for blood glucose control during pregnancy; **Pedi:** Safety not established.

**Use Cautiously in:** Lactation.

**Adverse Reactions/Side Effects**

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

**Resp:** Cough.

**GI:** Nausea, abdominal pain, anorexia, vomiting.

**Endo:** Hyperglycemia.

**Derm:** Local allergy.

**MS:** Arthralgia.

**Misc:** Injection site reactions, systemic allergic reactions.

**Interactions**

**Drug-Drug:** Increased likelihood of hypoglycemia with short-acting insulin; qd of short-acting pre-meal insulin by 50%. Avoid concurrent use with other agents that inhibit GI motility, including atropine and other anticholinergics. Avoid concurrent use with other agents that inhibit absorption of nutrients, including α-glucosidase inhibitors including acarbose and miglitol. May delay oral absorption of concurrently administered drugs; if prompt absorption is desired, administer 1 hr before or 2 hr after pramlintide.

**Route/Dosage**

**Insulin-using Type 2 Diabetes**

- **Subcut (Adults):** 60 mcg, immediately prior to major meals initially, if no significant nausea occurs, dose may be qd to 120 mcg.

**Type 1 Diabetes**

- **Subcut (Adults):** 15 mcg, immediately prior to major meals initially, if no significant nausea occurs, dose may be qd by 15 mcg every 3 days up to 60 mcg.

**NURSING IMPLICATIONS**

- **Assessment:** Monitor hemoglobin A1C, recent blood glucose monitoring data, history of insulin-induced hyperglycemia, current insulin regimen, and body weight prior to initiation of therapy.
- **Nursing Considerations:** Monitor for signs and symptoms of hypoglycemia (tremor, headache, sweating, tremor, irritability, difficulty concentrating, loss of consciousness, coma, seizure), occurs within 3 hr of injection. Pramlintide alone does not cause hypoglycemia, may increase risk when administered with insulin.
Lab Test Considerations: Monitor blood glucose frequently, including pre- and post-meals and at bedtime.

Potential Nursing Diagnoses: Noncompliance (Patient/Family Teaching)

Implementation
- **High alert:** Dose errors are a potential problem with administration of pramlintide. Pramlintide is available in a concentration of 0.6 mg/mL, dosing is in mcg, and insulin is in units. Carefully review dosing and conversion table prior to administration.
- Administer pramlintide and insulin as separate injections; do not mix.
- Adjust insulin doses to optimize glycemic control once target dose of pramlintide is achieved and nausea has subsided.
- **Subcut:** Administer immediately prior to major meals (250 kcal or containing 30 g of carbohydrate). Reduce preprandial rapid-acting, short-acting, and fixed-mix insulin doses by 50%. Use a U-100 syringe (preferably a 0.3 mL size) for optimal accuracy. Administer into abdomen or thigh, rotating injection sites. Do not administer solutions that are cloudy. Store unopened vials in refrigerator. Opened vials may be refrigerated or kept at room temperature for up to 28 days.

Patient/Family Teaching
- Instruct patient in proper use of pramlintide (injection technique, timing of doses, storage, and disposal of equipment). Make sure patient understands dosing and preparation of correct dose. Emphasize importance of adherence to meal planning, physical activity, recognition and management of hypoglycemia and hyperglycemia, and assessment of diabetes complications. Advise patients to read the Medication Guide before use and with each refill for new information.
- Review with patient how to handle illness or stress, substitute or omit insulin doses, and make changes in insulin treatment or diet. If a dose is missed, wait until the next meal and take usual dose; do not give an additional injection.
- Instruct patient to contact health care professional at least once a week until target dose of pramlintide is achieved, pramlintide is well-tolerated, and blood glucose concentrations are stable.
- May cause difficulty concentrating. Caution patient to avoid driving or other activities requiring alertness until response to medication is known.

*Why was this drug prescribed for your patient?*