nateglinide (na-teg-li-nide)

**StaRIA**

**Classification**
Therapeutic: antidiabetics
Pharmacologic: meglitinides

**Pregnancy Category C**

**Indications**
To improve glycemic control in patients with type 2 diabetes (with diet and exercise); may also be used with metformin or a thiazolidinedione (pioglitazone, rosiglitazone).

**Action**
Stimulates the release of insulin from pancreatic beta cells by closing potassium channels, which results in the opening of calcium channels in beta cells. This is followed by release of insulin. Requires functioning pancreatic beta cells.

**Therapeutic Effects:** Lowering of blood glucose.

**Pharmacokinetics**
- **Absorption:** Well absorbed (73%) following oral administration; absorption is rapid.
- **Distribution:** Unknown.
- **Protein Binding:** 98%.
- **Metabolism and Excretion:** Mostly metabolized by the liver (CYP2C9 [70%] and CYP3A4 [30%]); 16% excreted unchanged in urine.
- **Half-life:** 1.5 hr.

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

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>within 20 min</td>
<td>1 hr</td>
<td>4 hr</td>
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**Contraindications/Precautions**
- **Contraindicated in:** Hypersensitivity; Diabetic ketoacidosis; Type 1 diabetes; OB: Insulin recommended to control diabetes during pregnancy; Lactation: Effects on nursing infant unknown.

**Use Cautiously in:** Malnourished patients, patients with pituitary or adrenal insufficiency (susceptibility to hypoglycemia); Stressful physical exercise, insufficient caloric intake (increased risk of hypoglycemia); Autonomic neuropathy (hypoglycemia may be masked); Moderate to severe liver impairment; Fever, infection, trauma, or surgery (may lead to transient loss of glycemic control; insulin may be required);

**Adverse Reactions/Side Effects**
- CNS: Dizziness.
- Resp: Bronchitis, coughing, upper respiratory infection.
- GI: Diarrhea.
- Endo: Hypoglycemia.
- MS: Arthropathy, back pain.
- Misc: Flu symptoms.

**Interactions**
- **Drug-Drug:** Concurrent use with beta blockers may mask hypoglycemia. Alcohol, combination with other antidiabetics, NSAIDs, MAO inhibitors, nonselective beta blockers, amiodarone, fluconazole, miconazole, or omeprazole may increase risk of hypoglycemia. Hypoglycemic effects may be increased by thiazide diuretics, corticosteroids, thyroid supplements, sympathomimetic (adrenergic) agents, somatropin, rifampin, or phenytoin.

**Drug-Food:** Blood levels and effects are significantly increased when administered prior to a liquid meal.

**Route/Dosage**
PO (Adults): 120 mg 3 times daily before meals; patients who are approaching glycemic control may be started at 60 mg 3 times daily.

**NURSING IMPLICATIONS**
- **Assessment:**
  - Observe for signs and symptoms of hypoglycemic reactions (sweating, hunger, weakness, dizziness, tremor, tachycardia, anxiety).
  - **Lab Test Considerations:** Monitor serum glucose and HbA1c periodically during therapy to evaluate effectiveness.
  - **Nursing Considerations:** Monitor serum glucose and HbA1c periodically during therapy to evaluate effectiveness.
  - **Patient/Family Teaching:**
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Potential Nursing Diagnoses

Imbalanced nutrition: more than body requirements (Indications)
Noncompliance (Patient/Family Teaching)

Implementation

● Patients stabilized on a diabetic regimen who are exposed to stress, fever, trauma, infection, or surgery may require administration of nateglinide.

● PO: Administer 1–30 min prior to meals.

● May be administered concurrently with metformin, pioglitazone, or rosiglitazone.

Patient/Family Teaching

● Instruct patient to take medication at same time each day. Take missed doses as soon as remembered unless almost time for next dose. Do not take if unable to eat.

● Explain to patient that this medication controls hyperglycemia but does not cure diabetes. Therapy is long-term.

● Review signs of hypoglycemia and hyperglycemia with patient. If hypoglycemia occurs, advise patient to take a glass of orange juice or 2–3 tsp of sugar, honey, or corn syrup dissolved in water and notify health care professional. Instruct patient in proper testing of serum glucose and ketones. These tests should be closely monitored during periods of stress or illness and health care professional notified if significant changes occur.

● May occasionally cause dizziness. Caution patient to avoid driving or other activities requiring alertness until response is known.

● Advise patient to notify health care professional of all Rx or OTC medications, vitamins, or herbal products being taken and to consult with health care professional before taking other medications, especially aspirin and alcohol.

● Advise patient to inform health care professional of medication regimen prior to treatment or surgery.

● Insulin is the recommended method of controlling blood glucose during pregnancy. Counsel female patients to use a form of contraception other than oral contraceptives and to notify health care professional promptly if pregnancy is planned or suspected.

Evaluation/Desired Outcomes

Control of blood glucose levels without the appearance of hypoglycemic or hyperglycemic episodes.