**Argatroban (arg-atro-ban)**

**Classifications**
- Therapy: anticoagulants
- Pharmacologic: thrombin inhibitors

**Pregnancy Category** B

**Indications**
Prophylaxis or treatment of thrombus in patients with heparin-induced thrombocytopenia. As an anticoagulant in patients with or at risk for heparin-induced thrombocytopenia who are undergoing percutaneous coronary intervention (PCI).

**Action**
Inhibits thrombin by binding to its receptor sites. Inhibition of thrombin prevents activation of factors V, VIII, and XII; the conversion of fibrinogen to fibrin; platelet adhesion and aggregation.

**Therapeutic Effects:** Decreased thrombus formation and extension with decreased sequelae of thrombosis (emboli, postphlebitic syndrome).

**Pharmacokinetics**
- **Absorption:** IV administration results in complete bioavailability.
- **Distribution:** Unknown.
- **Metabolism and Excretion:** Mostly metabolized by the liver; excreted primarily in feces via biliary excretion. 16% excreted unchanged in urine, 14% excreted unchanged in feces.
- **Half-life:** 39–51 min (increased in hepatic impairment).

**TIME/ACTION PROFILE (anticoagulant effect)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV</td>
<td>immediate</td>
<td>1–3 hr</td>
<td>2–4 hr</td>
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</tbody>
</table>

**Contraindications/Precautions**
- **Contraindicated in:** Major bleeding, hypersensitivity, Lebanon, Lebanon

- **Use Cautiously in:** Hepatic impairment, OB, Pedi. Use only if clearly needed; fetal safety not established.

- **Geriatric:** Use only if clearly needed.

- **Pediatric:** Use only if clearly needed.

- **Renal Impairment:** Use only if clearly needed.

- **Hepatic Impairment:** Use only if clearly needed.

**Adverse Reactions/Side Effects**

**Interactions**
- **Drug-Drug:** Risk of bleeding may be increased by concurrent use of antiplatelet agents, thrombolytic agents, or other anticoagulants.

**Drug-Natural Products:** Risk of bleeding may be increased by anise, arnica, chamomile, clove, feverfew, garlic, ginger, ginkgo, Panax ginseng, and others.

**Route/Dosage**
- **IV (Adults):** 2 mcg/kg/min as a continuous infusion; adjust infusion rate on the basis of activated partial thromboplastin time (aPTT). Patients undergoing PCI—350 mcg/kg bolus followed by infusion at 25 mcg/kg/hour. Activated clotting time (ACT) should be assessed 5–10 min later. If ACT is >300–450 sec, procedure may be started. If ACT >150 sec, give additional bolus of 150 mcg/kg and infusion rate to 30 mcg/kg/hour. If ACT >600 sec, infusion rate should be increased by 15 mcg/kg/hour and ACT rechecked after 5–10 min. If thrombotic complications occur or ACT drops to <250 sec, an additional bolus of 150 mcg/kg may be given and the infusion rate set to 40 mcg/kg/hour followed by ACT monitoring. If anticoagulation is required after surgery, lower infusion rates should be used.

- **Hemodialysis:** None established.

**NURSING IMPLICATIONS**

**Assessment**
- Monitor vital signs periodically during therapy. Unexplained decreases in BP may indicate hemorrhage. Assess patient for bleeding. Assess for bleeding, venous punctures, IM injections, and use of urinary catheters. Monitor for bleeding and bruising and for postphlebitic syndrome. Monitor for evidence of ischemia, low back pain, or burning on urination. If bleeding cannot be controlled with pressure, decrease dose or discontinue argatroban immediately.

**Nursing Considerations**
- Monitor for signs of anaphylaxis (rash, coughing, dyspnea) throughout therapy.

- Use only if clearly needed; fetal safety not established.

- Use with caution in patients with hepatic impairment, renal impairment, OB, and Pedi.

- Use only if clearly needed in OB.

- Use in OB only if clearly needed, fetal safety not established.
All parenteral anticoagulants should be discontinued before argatroban therapy is started. Do not confuse argatroban with Aggrastat.

**Implementation**

**Ineffective tissue perfusion (Indications)**

**Potential Nursing Diagnoses**

Indications for tissue perfusion failure may be present in a variety of conditions, such as shock, sepsis, and hypotension. Nursing interventions may include monitoring vital signs, assessing for signs of perfusion failure, and collaborating with the healthcare team to implement appropriate therapies.

**Lab Test Considerations:** Monitor aPTT prior to initiation of continuous infusion, 2 hours after initiation of therapy, and periodically during therapy to confirm aPTT is within desired therapeutic range. For patients undergoing PCI, monitor ACT as described in Route and Dose section.

**Assess hemoglobin, hematocrit, and platelet count prior to, and periodically during, argatroban therapy.** May cause hemolysis and hematocrit unexplained hematocrit changes indicate hemolysis.

**Use of argatroban concurrently with multiple doses of warfarin will result in more prolonged anticoagulation than when argatroban is used alone. Monitor INR daily during concurrent therapy. Repeat INR 4–6 hr after argatroban dose is changed.** If the repeat value is below the desired therapeutic range for warfarin alone, reconstitute argatroban therapy and continue until the desired therapeutic range for warfarin alone is reached. To obtain the INR for warfarin alone when the dose of argatroban is <2 mcg/kg/min the argatroban dose should be temporarily reduced to 2 mcg/kg/min; the INR for combined therapy may then be obtained 4–6 hr after argatroban dose was reduced.

argatroban

- ranitidine, remifentanil, rocuronium, sodium acetate, sodium bicarbonate, sodium phosphates, succinylcholine, temazepam, thioridazine, tobramycin, trimethoprim/sulfamethoxazole, vancomycin, vaspessin, vincristine, vincristine sulfate, vinorelbine, verapamil, vinblastine, vincristine, vinorelbine, voriconazole, zidovudine, zoledronic acid.

Y-Site Incompatibility: calcium, dopamine, diazepam, phenytoin.

Patient/Family Teaching
- Instruct patient to notify health care professional immediately if any bleeding is noted.

Evaluation/Desired Outcomes
- Decreased thrombus formation and extension.
- Decreased sequelae of thrombosis (emboli, post-phlebitic syndrome).

Why was this drug prescribed for your patient?