



# REGIONAL ADULT PARENTERAL DRUG MONOGRAPH

GENERIC NAME

**esmolol**



**Effective Date:** Nov8 2017

**Reviewed Date:** Nov 2024

CLASSIFICATION  
**Antiarrhythmic**  
**Antihypertensive**

OTHER NAMES  
**Brevibloc**

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**ADMINISTRATION POLICY:**

- IV Infusion – **May be administered by a nurse experienced in ED/Cardiac room/OR/ICU/PACU**
- IV Bolus – **May be administered by a nurse experienced in ED/Cardiac room/OR/ICU/PACU**
- IM Injection – *Not to be administered*

**RECONSTITUTION/DILUTION/ADMINISTRATION:**

**Available as:** 10 mg/mL – 10 mL vial

**IV Bolus:** Administer undiluted over 1 minute

**IV infusion: Pump Library:**

Drug Library	Dose Rate	Short Name	Care Unit
Yes	mcg/kg/min	Esmo1000	Critical Care
Drug	Diluent	Final Volume (VTBI)	Final Concentration
1000 mg (100mL of 10mg/mL)	100mL empty IV bag	100mL	10mg/mL
Clinical Advisory: High Alert			
Soft Low Dose Limit: 25 mcg/kg/min		Soft High Dose Limit: 300 mcg/kg/min	

**DOSAGE:**

**Loading dose:** **IV Bolus:** 250 to 500 mcg/kg

**Maintenance dose: IV infusion:** Follow with a 25 to 50 mcg/kg/min infusion for 4 minutes; infusion may be continued at 50 mcg/kg/min or, if response is inadequate, titrate by 25 to 50 mcg/kg/min increments (increased no more frequently than every 4 minutes) titrate to desired response

**NOTE:** May repeat loading dose before each rate increase

**Maximum single dose:** 500 mcg/kg

**Maximum rate:** IV bolus: 30 seconds  
IV infusion: 300 mcg/kg/minute

**Maximum concentration:** 10 mg/mL

**STABILITY/COMPATIBILITY:**

**Stability of Final Admixture:** 24 hours at room temperature

**Compatibility:** Compatible with normal saline, D5W, combination dextrose-saline solutions, Lactated Ringer



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**PRECAUTIONS, POTENTIAL ADVERSE REACTIONS:**

- Hypotension, bradycardia, diaphoresis, chest pain, cardiac failure, hyperkalemia
- Dizziness, somnolence, headache, confusion, agitation
- Nausea, bronchospasm inflammation/irritation at injection sites, avoid extravasation
- May precipitate or aggravate symptoms of arterial insufficiency in patients with Peripheral Vascular Disease and Raynaud’s Disease
- Do not use within 24 hours of calcium channel blockers i.e. verapamil, diltiazem

**ADDITIONAL NOTES AND NURSING CONSIDERATIONS:**

- Cardiac and blood pressure monitoring required for continuous IV administration or repeated IV bolus administration
- Monitor blood pressure and heart rate
- Indicated only for short term rate control. Limited data for use beyond 24 hours.
- To test patient’s tolerance to beta-blockade prior to switch to long acting agent such as metoprolol IV or PO.
- Administer with caution to patients with impaired renal function.
- Monitor for changes in level of consciousness, breathing or EKG changes (ischemic changes)
- May mask common signs of shock and hypoglycemia
- Overdose may respond to IV glucagon, atropine, epinephrine or pacing
- Elderly patients: Lower doses may be required