

## Class

Antidysrhythmic, Anesthetic

## Pharmacologic Properties

Decreases ventricular automaticity and raises the ventricular fibrillation threshold.

## Indications

- PVC's closely coupled (R on T) [Protocol 9](#).
- Multi-formed PVC's in configuration [Protocol 9](#).
- PVC's occurring in short bursts of two or more in succession [Protocol 9](#).
- Alternative to Amiodarone for ventricular fibrillation/tachycardia [Protocol 9, Protocol 9P](#).
- Local anesthetic for IO infusions of fluids or medications administered to the awake patient [Procedure 14](#).

## Contraindications

- Lidocaine is contraindicated in second-degree heart block, Mobitz II; complete AV block; and Stokes-Adams syndrome.
- Bradycardia with ventricular ectopy. If PVC's occur in conjunction with sinus bradycardia, the bradycardia should be treated first.

## Precautions

- Lidocaine is metabolized in the liver. In patients with liver disease and low cardiac output states, e.g., acute MI, shock, congestive heart failure;
- **Patients older than 70 years, has liver or renal disease, CHF, or in shock, the drip should be run at 1-2 mg/minute or half the regular rate.**

## Adverse Reactions

- Drowsiness, numbness, dizziness, blurred vision, tinnitus, muscle twitching, and seizures.

## Dosage and Administration

### Adult

#### Cardiac Arrest – Pulseless Ventricular Arrhythmias

- 1.5 mg/kg IV/IO Loading Bolus.
  - May repeat dose twice of 0.75 mg/kg IV/IO bolus every 5 – 10 minutes.
  - Max total dose of 3 mg/kg.



Premature Ventricular Complexes (PVCs)/Ventricular Arrhythmias with a Pulse

- 1 mg/kg IV/IO
  - May repeat dose every 5 – 10 minutes up to a max total dose of 3 mg/kg.

Maintenance Infusion

- 2 – 4 mg/min IV/IO.
- Mix 2 gm in 500 mL of NS to yield a concentration of 4 mg/mL and attach a 60 gtt. (micro) set, run at 2 – 4 mg/min. (30 – 60 gtts/sec).
  - > 70 years of age or known hepatic failure/disease, begin at half the regular rate.
- IO Anesthetic
  - 40 mg slow IO bolus over 120 seconds.
    - Additional doses may be repeated as needed for pain management of the administration of medications via IO route on the awake patient.
    - Additional dose – 20 mg slow IO bolus over 60 seconds.

**Pediatric**

- 1 mg/kg IV/IO Loading Bolus (Max dose of 100 mg).
  - May repeat dose 1 mg/kg when maintenance infusion is initiated, and bolus has not been administered within previous 15 minutes.
- Maintenance Infusion
  - 20 – 50 mcg/kg/min.
  - Mix Lidocaine 50 mg into a 50 mL bag of NS to yield a concentration of 1000 mcg/mL and attach a 60 gtt (micro) set, set rate of administration to the desired dose calculated.
- IO Anesthetic
  - 0.5 mg/kg slow IO bolus over 120 seconds (MAX 40 mg).
    - Additional doses may be repeated as needed for pain management of the administration of medications via IO route on the awake patient.
    - Additional dose – 0.25 mg/kg slow IO bolus over 60 seconds (MAX 20 mg).