

**TRADE NAMES: XYLOCAINE®**

**UPDATE Effective March 20, 2025. If amiodarone is unavailable, lidocaine may be used for Indications 1-3 at Dosages 1-4.**

**a) Pharmacology**

- (1) Antiarrhythmic
- (2) Local anesthetic

**b) Pharmacokinetics**

- (1) Extremely rapid (within minutes) onset following IV administration and lasts approximately 10–20 minutes
- (2) Mucosal anesthesia with onset in 1–5 minutes

**c) Indications**

- (1) Ventricular tachycardia (VT)
- (2) Ventricular fibrillation (VF)
- (3) Prevent recurrence of VF/VT after defibrillation and conversion to supraventricular rhythm
- (4) Anesthesia for IO infusions
- (5) Nasotracheal intubation

**d) Contraindications**

- (1) AV blocks
- (2) Sensitivity to lidocaine
- (3) Idioventricular escape rhythms
- (4) Accelerated idioventricular rhythm
- (5) Sinus bradycardia or arrest or block
- (6) Hypotension
- (7) Shock
- (8) Ventricular conduction defects

**e) Adverse Effects**

- (1) Lidocaine may cause clinical evidence of toxicity usually related to the central nervous system.
- (2) Toxicity:
  - (a) Early: muscle twitching, slurred speech, altered mental status, decreased hearing, paresthesia (pins and needles), anxiety, apprehension, visual disturbances, nausea, numbness, difficulty breathing or swallowing, decreased heart rate
  - (b) Late: convulsions, hypotension, coma, widening of QRS complex, prolongation of the P-R interval, hearing loss, hallucinations

**f) Precautions**


- (1) Reduce the dosage in patients with decreased cardiac output, liver dysfunction, and patients over age 70.
- (2) Bolus doses should be administered over a 1-minute period, except in VF/VT, when they are administered IVP.

**g) Dosage**

- (1) Adult with pulse: Administer 1–1.5 mg/kg IVP/IO bolus followed by 0.5–0.75 mg/kg every 8–10 minutes, as needed, up to 3 mg/kg total.
- (2) Adult without pulse: Administer 1.5 mg/kg IVP/IO bolus initially followed by an additional 1.5 mg/kg IVP bolus in 3–5 minutes, as needed, to a maximum of 3 mg/kg.
- (3) Pediatric with pulse: Administer 1 mg/kg initial bolus and 0.5 mg/kg IVP/IO bolus every 8–10 minutes, as needed, to a maximum of 3 mg/kg total.
- (4) Pediatric without pulse: Administer 1 mg/kg initial bolus IVP/IO bolus followed by 1 mg/kg IVP boluses in 3–5 minutes to a maximum of 3 mg/kg.
- (5) Adult/Adolescent with an IO infusion: To prevent or treat pain during an IO infusion in patients greater than or equal to 13 years of age, administer 20–40 mg (1–2 mL) of 2% (preservative-free) lidocaine IO.

**Pediatric Lidocaine 2%**

Age	Weight	Lidocaine
Less than 5 years	10-20 kg	Contraindicated
5-12 years	20-40 kg	10 mg (0.5 mL)
13-17 years	40-80 kg	20 mg (1 mL)
Greater than 18 years	Greater than 80 kg	Refer to adult dosing

- (6)  IO infusion in patients less than 13 years of age: To prevent or treat pain during an IO infusion for patients under 13 years of age, consult a Pediatric Base Station.
- (7) Nasal Pharyngeal Anesthesia (age 13 years and greater)  
Draw up 4 mL of lidocaine 4% (40 mg/mL) and using mucosal atomization device, administer 2 mL per nare. The patient IV, gel, and intranasal dosing should not exceed 3 mg/kg.

**h) Interfacility Transport Only**

- (1) IV Infusion
- (2) Maintain the IV infusion of lidocaine at the rate established by the sending physician and record vital signs every 15 minutes.  
(See *Lidocaine Infusion for Interfacility Transport.*)