

# LIDOCAINE

<b>DRUG CLASSIFICATION</b>	Class Ib Antiarrhythmic Local Anesthetic of Amide Group
<b>MECHANISM OF ACTION</b>	Suppresses automaticity of conduction tissue by increasing electrical stimulation threshold of ventricle, His-Purkinje system, and spontaneous depolarization of the ventricles during diastole via direct action on the tissues. Blocks initiation and conduction of nerve impulses by decreasing neuronal membrane's permeability to sodium ions, resulting in inhibition of depolarization with resultant blockade of conduction.
<b>CLINICAL INDICATIONS</b>	Wide Complex Tachycardia Ventricular Fibrillation / Pulseless Ventricular Tachycardia
<b>STANDARD CONTRAINDICATIONS</b>	Hypersensitivity to Lidocaine, Amide-Type Anesthetics, or Other Relative Components Severe Degrees of SA, AV, or Intraventricular Heart Blocks (Without Functioning Artificial Pacemaker Present) Wolff-Parkinson-White Syndrome Adam-Stokes Syndrome
<b>POTENTIAL ADVERSE EFFECTS</b>	Headache / Bradycardia / Arrhythmias / Hypotension / Agitation / Anxiety / Confusion / Respiratory Depression / Seizures / Edema
<b>GENERAL RISKS &amp; PRECAUTION</b>	<b>1)</b> Serious dose-related arrhythmias may occur in combination with vasoconstrictors, such as epinephrine. <b>2)</b> Use extreme caution in patients with conditions prone to severe bradycardia, severe hypotension, or impaired cardiovascular function. <b>3)</b> MAOIs or tricyclic antidepressants should be used with caution when lidocaine injection used in combination vasopressors. <b>4)</b> Avoid other amide-type local anesthetics including relative antiarrhythmics such as mexiletine or class III antiarrhythmics such as amiodarone. <b>5)</b> Use caution in patients with severe hepatic dysfunction or disease as they are at increased risk of lidocaine toxicity. <b>6)</b> Use caution in patients with pseudocholinesterase deficiency due to the increased risk for lidocaine toxicity.
<b>PROTOCOL INDEX</b>	Adult Monomorphic Tachycardia; Wide Complex (AC-7) Adult Polymorphic Tachycardia; Wide Complex / Torsades de Pointes (AC-8) Ventricular Fibrillation; Pulseless Ventricular Tachycardia (AC-9) Pediatric Ventricular Fibrillation Pulseless Ventricular Tachycardia (PC-7) Pediatric Post Resuscitation (PC-8)

## MEDICATION ADMINISTRATION

### ADULT

### PEDIATRIC

#### Irregular, Monomorphic Wide Complex Tachycardia

1 mg / kg [IV/IO]

If rhythm converts with HR > 60 bpm:

1 – 4 mg / min [IV/IO] Infusion

#### Irregular, Polymorphic Tachycardia with Pulses Present and QT-I < 500 msec.

1 – 1.5 mg / kg [IV/IO]; May repeat 0.75 mg / kg [IV/IO] if refractory.

(Maximum Dose: 3 mg / kg)

#### Ventricular Fibrillation; Pulseless Ventricular Tachycardia

1 – 1.5 mg / kg [IV/IO]; May repeat 0.75 mg / kg [IV/IO] if refractory.

(Maximum Dose: 3 mg / kg)

If rhythm converts and ROSC is achieved with HR > 60:

See AC-9 Notes for Post-Resuscitation Infusion Instructions

#### Parenteral Access: Intraosseous (Step 9)

Paramedic may administer 10 to 20 mg (0.5 to 1 cc) of 2% Lidocaine in adult patients who experience infusion-related pain. This may be repeated prn to a maximum of 60 mg (6 cc).

#### Pediatric VFIB / Pulseless VTACH

1 mg / kg [IV/IO]

May repeat 0.5 mg / kg [IV/IO]

(Maximum total dose 3 mg / kg)

#### Pediatric Post-Resuscitation

20 – 50 mcg / kg / min [IV/IO] Infusion

See PC-8 Notes for Pediatric Post-Resuscitation Infusion Instructions.

*Contact Medical Control for Lidocaine infusion dosing guidance if needed.*