

Southern Illinois Regional EMS System

JJ-17 LIDOCAINE

1. Class:
 - 1.1. Antidysrhythmic (Class I-B), local anesthetic.
2. Description:
 - 2.1. Lidocaine decreases phase 4 diastolic depolarization (which decreases automaticity) and has been shown to be effective in suppressing premature ventricular complexes. In addition, Lidocaine is used to treat ventricular tachycardia and some cases of ventricular fibrillation. Lidocaine also raises the ventricular fibrillation threshold.
3. Onset and Duration:
 - 3.1. Onset 30-90 seconds.
 - 3.2. Duration: 10-20 minutes.
4. Indications:
 - 4.1. Ventricular tachycardia.
 - 4.2. Ventricular fibrillation.
 - 4.3. Wide-complex tachycardia of uncertain origin.
 - 4.4. Significant ventricular ectopy in the setting of myocardial ischemia/infarction.
5. Contraindications:
 - 5.1. Hypersensitivity.
 - 5.2. Adams-Stokes syndrome.
 - 5.3. Second- or third-degree heart block in the absence of an artificial pacemaker.
6. Adverse Reactions:
 - 6.1. Light-headedness.
 - 6.2. Confusion.
 - 6.3. Blurred vision.
 - 6.4. Hypotension.
 - 6.5. Cardiovascular collapse.
 - 6.6. Bradycardia.
 - 6.7. Altered level of consciousness, irritability, muscle twitching, seizures with high doses.
7. Drug Interactions:
 - 7.1. Metabolic clearance of Lidocaine may be decreased in patients taking beta-adrenergic blockers or in patients with decreased cardiac output or liver dysfunction.
 - 7.2. Apnea induced with succinylcholine may be prolonged with large doses of Lidocaine.
 - 7.3. Cardiac depression may occur if Lidocaine is given concomitantly with IV phenytoin.
 - 7.4. Additive neurological effects may occur with procainamide and tocainide.
8. How Supplied:
 - 8.1. Prefilled syringes, 100mg in 5ml of solution.
 - 8.2. 1 and 2 gram additive syringes.
 - 8.3. Ampules, 100mg in 5ml solution.
 - 8.4. 1 and 2 gram vials in 30ml of solution.
 - 8.5. 5ml containing 100mg/ml.

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LIDOCAINE (XYLOCAINE)

(continued)

9. Dosage and Administration:

9.1. Ventricular Tachycardia/Ventricular Fibrillation/Cardiac Arrest:

9.1.1. Adult:

9.1.1.1. 1-1.5mg/kg IV bolus or:

9.1.1.2. Endotracheal tube at 2-2.5 times the IV dose.

9.1.1.3. Consider repeat in 3-5 minutes.

9.1.1.4. Maximum total dose of 3mg/kg.

9.1.1.5. A single dose of 1.5mg/kg is acceptable.

9.1.1.6. To refractory ventricular tachycardia/ventricular fibrillation, an additional bolus of 0.5-0.7mg/kg can be given.

9.1.1.7. Repeat in 5-20 minutes of necessary.

9.1.2. Pediatric:

9.1.2.1. 1mg/kg IV/IO or endotracheal tube (diluted to 3-5ml).

9.2. Maintenance Infusion after Resuscitation from Ventricular Tachycardia/Ventricular Fibrillation/Cardiac Arrest:

9.2.1. Adult 1-4mg/minute.

9.2.2. Pediatric 20-50mcg/kg/minute (1-2.5ml/kg/hour).

9.3. Wide complex Paroxysmal Supraventricular Tachycardia/Wide Complex Tachycardia of Uncertain Type/Stable Ventricular Tachycardia:

9.3.1. Adult:

9.3.1.1. Initial loading dose of 1-1.5mg/kg IV.

9.3.1.2. If needed give 0.5-0.7mg/kg in 5-10 minutes (maximum total dose of 3mg/kg).

9.3.1.3. After conversion, start a Lidocaine drip (1-4mg/min).

9.3.2. Pediatric:

9.3.2.1. Initial loading dose of 1mg/kg IV/IO:

9.3.2.2. Followed by an infusion of 20-50mcg/kg/minute.

10. Special Considerations:

10.1. Pregnancy Category B.

10.2. A 75-100mg bolus will maintain adequate blood levels for only 20 minutes (in absence of shock).

10.3. If bradycardia occurs along with premature ventricular contractions, always treat the bradycardia first with atropine.

10.4. Exceedingly high doses of Lidocaine can result in coma or death.

10.5. Decrease dose in the elderly.

10.6. Avoid Lidocaine for reperfusion dysrhythmias following fibrinolytic therapy.

10.7. Use extreme caution in patients with hepatic disease, heart failure, marked hypoxia, severe respiratory depression, hypovolemia or shock, incomplete heart block, or bradycardia and atrial fibrillation.