

LIDOCAINE

PHARMACOLOGY & MECHANISM OF ACTIONS:

- ❑ Antiarrhythmic
- ❑ Lidocaine depresses the automaticity of purkinje fibers; therefore, raises stimulation threshold in the ventricular muscle fibers (makes ventricles less likely to fibrillate).
- ❑ Lidocaine causes CNS stimulation including: tremors, restlessness and clonic convulsions (rare) followed by depression and respiratory failure at higher doses.
- ❑ Cardiovascular effect: Decreased conduction rate and force of contraction, mainly at toxic levels. The effect on the heart of a single bolus disappears in 10-20 minutes.
- ❑ Metabolic half-life is about 2 hours; toxicity develops with repeated doses.

INDICATIONS:

- ❑ Premedication for rapid sequence intubation
- ❑ Anesthetic for IO placement

CONTRAINDICATIONS:

- ❑ Hypersensitivity
- ❑ Second and third degree AV block

ADMINISTRATION:

ADULT	PEDIATRIC
<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: #6aa84f; color: white; padding: 5px; font-weight: bold;">EMT-I</div> <div style="flex-grow: 1; padding: 5px;"> <p><i>ANESTHETIC FOR IO PLACEMENT</i></p> <ul style="list-style-type: none"> ❑ 40 mg IO ❑ Wait 1-2 minutes prior to other fluid administration <p><i>STABLE WIDE COMPLEX TACHYCARDIA</i></p> <ul style="list-style-type: none"> ❑ 1.0 mg/kg SLOW IV – Follow with 1-4 mg/kg maintenance drip. <p><i>SHOCKABLE RHYTHMS (VF/VT)</i></p> <ul style="list-style-type: none"> ❑ 1.5 mg/kg IVP, repeat 0.75 mg/kg every 3-5 min to a max dose of 3 mg/kg. </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: #6aa84f; color: white; padding: 5px; font-weight: bold;">EMT-I</div> <div style="flex-grow: 1; padding: 5px;"> <p><i>ANESTHETIC FOR IO PLACEMENT</i></p> <ul style="list-style-type: none"> ❑ 0.5 mg/kg IO ❑ Wait 1-2 minutes prior to other fluid administration </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: #c00000; color: white; padding: 5px; font-weight: bold;">PARAMEDIC</div> <div style="flex-grow: 1; padding: 5px;"> <p><i>PRE-MEDICATION FOR RSI IN TRAUMATIC BRAIN INJURY (TBI) PATIENT</i></p> <ul style="list-style-type: none"> ❑ 1.5 mg/kg IV/IO </div> </div>	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); background-color: #c00000; color: white; padding: 5px; font-weight: bold;">PARAMEDIC</div> <div style="flex-grow: 1; padding: 5px;"> <p><i>PRE-MEDICATION FOR RSI IN TRAUMATIC BRAIN INJURY (TBI) PATIENT</i></p> <ul style="list-style-type: none"> ❑ 1.5 mg/kg IV/IO </div> </div>

PRECAUTIONS & SIDE EFFECTS:

- ❑ Tremors
- ❑ Restlessness
- ❑ Clonic convulsions

LIDOCAINE CONT.

SPECIAL NOTES:

- ❑ Use with extreme caution in presence of advanced AV block unless artificial pacemaker is in place.
- ❑ In atrial fibrillation or flutter, Quinidine-like effect may cause alarming ventricular acceleration
- ❑ Lidocaine is not recommended for treatment of supraventricular arrhythmia.
- ❑ Do not administer with heart rate less than 50; you may suppress the heart completely. The same is true for hypotension in which case caution is advised. However an arrhythmia is often the cause of the hypotension. In this situation the arrhythmia is considered “unstable”, and should be cardioverted.
- ❑ CNS disturbance: Sleepiness, dizziness, disorientation, confusion, and convulsions.
- ❑ Hypotension: Decreased myocardial contractility and increased AV block at toxic levels can lead to hypotension.
- ❑ Toxicity is more likely in elderly patients.
- ❑ Doses should be halved for patients with the following conditions:
 - CHF
 - Hypotension
 - Hepatic dysfunction
 - >70 years old
- ❑ The effect of a single bolus on the heart disappears in 10-20 minutes due to redistribution in the body. Metabolic half life is 2 hours, therefore toxicity develops with repeated doses.
- ❑ Toxic levels have a decreased conduction rate and force on cardiovascular muscle.
- ❑ In rare instances, sudden cardiovascular collapse and death may occur.