	M25 - LIDOCAINE HYDROCHLORIDE (XYLOCAINE)	
	Version date: 2025-11-18	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Cardiac arrest due to ventricular fibrillation (VF) or ventricular tachycardia (VT) that has not responded to at least one shock, one cycle of cardiopulmonary resuscitation, and one dose of epinephrine (table A) • Sodium channel blocker cardiotoxicity (table B) • Intraosseous (IO) analgesia (table C)

WARNINGS
<p>A lidocaine infusion should be administered by pump. During cardiac arrest and with return of spontaneous circulation (ROSC) it can be carefully given by gravity drip if a pump is not available and therapy cannot be delayed.</p> <p style="text-align: center;">Refer to H11 for information regarding concentrations & dilutions.</p>
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to lidocaine or amide-type local anesthetics (e.g. bupivacaine, ropivacaine, mepivacaine)
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Bradycardia • Atrioventricular node or infranodal block • Hypersensitivity to lidocaine, bupivacaine or mepivacaine • Use the lowest effective infusion rate: ² <ul style="list-style-type: none"> ○ Heart failure / myocardial depression ○ Renal failure ○ Liver failure

TABLE A: CARDIAC ARREST ¹	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Dose = 1 to 1.5 mg/kg • Maximum per dose = 100 mg • Administer by rapid push • Follow with a saline flush • Repeat dose = 0.5 to 0.75 mg/kg every 5 minutes as required • Cumulative maximum dose = 3 mg/kg • If ROSC is achieved, begin a continuous infusion as soon as possible 	

INFANTS / CHILDREN / ADOLESCENTS: <ul style="list-style-type: none"> • Dose = 1 mg/kg • Maximum per dose = 100 mg • Administer by rapid push • Follow with a saline flush • Immediately begin a continuous infusion • If the time from the initial load to the initiation of the infusion exceeds 15 minutes repeat 1 mg/kg (maximum = 100 mg) once 	
ENDOTRACHEAL	ACP
ADULTS: <ul style="list-style-type: none"> • Dose = 2 to 3.75 mg/kg • Dilute in sterile water • Instill directly into the ETT • Ventilate for five breaths • Repeat every 5 minutes as required • Cumulative maximum = 3 doses INFANTS / CHILDREN / ADOLESCENTS: <ul style="list-style-type: none"> • Dose = 2 to 3 mg/kg • Dilute in sterile water • Instill directly into the ETT • Ventilate for five breaths • Repeat every 5 minutes as required • Cumulative maximum = 3 doses 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
ALL AGES: <ul style="list-style-type: none"> • Begin the infusion at 0.02 mg/kg/min • Titrate in increments of 0.01 mg/kg/min every 5 to 10 minutes as required • Maximum infusion rate = 0.05 mg/kg/min 	

TABLE B: SODIUM CHANNEL BLOCKER CARDIOTOXICITY ¹



INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
ALL AGES: <ul style="list-style-type: none"> • Dose = 1 mg/kg • Maximum per dose = 100 mg • Administer by slow push over 2 to 5 minutes • Immediately begin a continuous infusion 	

INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Begin the infusion at 0.02 to 0.05 mg/kg/min • Titrate in increments of 0.01 mg/kg/min every 5 to 10 minutes as required • Maximum infusion rate = 0.05 mg/kg/min ⁴ 	

TABLE C: INTRAOSSEOUS ANALGESIA ³	
INTRAOSSEOUS	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Dose = 0.5 mg/kg • Maximum per dose = 50 mg • Slowly infuse over 2 minutes • Allow to dwell for 1 to 2 minutes • Flush with 10 ml of sterile saline • If initial relief is not sufficient, repeat 0.25 mg/kg (maximum per dose = 25 mg) • Repeat 0.25 to 0.50 mg/kg every 30 to 45 minutes as necessary (cumulative maximum per hour = 1.25 mg/kg) 	

NOTES
<ol style="list-style-type: none"> 1. In cardiac arrest lidocaine may be used instead of amiodarone, especially the arrest is due to sodium channel blocker cardiotoxicity, such as with tricyclic antidepressant (TCA) or cocaine overdose. Lidocaine is a sodium channel antagonist itself but competitively binds to sodium channels and rarely causes QRS prolongation. 2. In patients with known heart, renal or liver failure, the lowest continuous infusion dose should be used. DO NOT REDUCE THE BOLUS DOSES USED IN CARDIAC ARREST. 3. The 10 mg/ml concentration is preferred for intraosseous analgesia due to the larger volume. 4. The syringe / container must be clearly labelled with the final concentration of lidocaine to avoid a potentially serious medication error.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • C02.1 - Advanced Cardiac Arrest (Adult) • C02.2 – Advanced Cardiac Arrest (Pediatric) • C13 - Sodium Channel Blocker Toxicity • H11 – ACP Medication Formulary

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Revised notes for greater clarity• Lidocaine can be administered without an infusion pump if necessary