

# ADVANCED LIFE SUPPORT (ALS)

## INITIATE

- 1 ECG MONITORING
- 2 EtCO<sub>2</sub> MONITORING (where equipment exists)
- 3 ENSURE PATENT VASCULAR ACCESS
- 4 ADMINISTER REVERSAL AGENTS (if appropriate)

DRUG	DOSE	NOTES
Atipamezole (5 mg/mL)	50 mcg/kg	Reverses alpha-2 agonists
Flumazenil (0.1 mg/mL)	0.01 mg/kg	Reverses benzodiazepines
Naloxone (0.4 mg/mL)	0.04 mg/kg	Reverses opioids

- 5 ADMINISTER PRECORDIAL THUMP

## BEGIN TIMING 2-MINUTE CYCLE

AVOID DISRUPTION TO COMPRESSION/VENTILATION

### VASOPRESSOR DRUGS

DRUG	DOSE	NOTES
Epinephrine (1 mg/mL)	0.01 mg/kg	Administer every other cycle Consider 0.1 mg/kg with CPA >10 min
Atropine (0.54 mg/mL)	0.05 mg/kg	Administer every other cycle with asystole or pulseless electrical activity

### ANTI-ARRHYTHMIC DRUGS

Amiodarone (50 mg/mL)	5 mg/kg	Used for ventricular fibrillation and ventricular tachycardia
Lidocaine (20 mg/mL) if amiodarone is not available	<b>Canine:</b> 2 - 8 mg/kg <b>Feline:</b> 0.2 mg/kg	Maximum doses: <b>Canine:</b> 8 mg/kg <b>Feline:</b> 1 mg/kg

## MONITOR

PARAMETER	NOTES
Continuous ECG	Normal sinus rhythm; assess for ROSC
EtCO <sub>2</sub>	>15 mm Hg indicates good compressions
SpO <sub>2</sub>	>90 % breathing room air or 100% O <sub>2</sub>
TPR	Ensure monitoring does not impede compressions and ventilation
Blood pressure	MAP >80 mm Hg
Blood glucose	>100 mg/dL
Serial physical and neurologic examinations	

## ASSESS

PARAMETER	NOTES
Calcium	Correct if needed
Potassium	Correct if needed
Volume status	Administer fluids if hypovolemic
FiO <sub>2</sub>	Inhalant rates of 21 - 100%; adjust based on SpO <sub>2</sub>
Acid base status	Consider sodium bicarbonate therapy (1 mEq/kg) if CPA >10 min

For additional information see the *CPR Clinical Guidelines* chapter

# POST-CARDIOPULMONARY ARREST (CPA) CARE AND MONITORING

PARAMETER	GOAL	NOTES
Ventilation	<b>Canine:</b> PaCO <sub>2</sub> = 32 - 43	Manual ventilation for hypoventilating patients; avoid hypercapnia
	<b>Feline:</b> PaCO <sub>2</sub> = 26 - 36	
Blood pressure	Normotension to mild hypertension	
Oxygenation	PaO <sub>2</sub> = 80 - 100 mm Hg SpO <sub>2</sub> = 94 - 98%	Avoid hypoxemia and hyperoxemia
Temperature	Normothermia to mild hypothermia	Warm patients slowly
Additional Therapies		
Glucocorticoids	Hydrocortisone (1 mg/kg initial dose) Equivalent Dex SP dose is roughly 0.5 mg/kg IV	If refractory hypotension
Hypertonic saline	2-4 mL/kg of 7% solution	For neurologic signs consistent with cerebral edema; monitor volume status and urine output
OR		
Mannitol	0.5 g/kg IV over 15 - 20 minutes	
Referral	24-hour care center with advanced critical care capabilities	

## Abbreviations

ABC	airway, breathing, circulation
ALS	advanced life support
BLS	basic life support
C:V	compression ventilation ratio
CPA	cardiopulmonary arrest
CPR	cardiopulmonary resuscitation
ET	endotracheal
EtCO <sub>2</sub>	end-tidal carbon dioxide
ECG	electrocardiogram
FiO <sub>2</sub>	fraction of inspired oxygen
MAP	mean arterial pressure
PaCO <sub>2</sub>	partial pressure of arterial carbon dioxide
PaO <sub>2</sub>	partial pressure of arterial oxygen
PCA	post cardiac arrest
RECOVER	Reassessment Campaign on Veterinary Resuscitation
ROSC	return of spontaneous circulation
SpO <sub>2</sub>	peripheral capillary oxygen saturation
TPR	temperature, pulse, respiration
VF	ventricular fibrillation
VT	ventricular tachycardia

## CLINICAL ESSENTIAL

**Crash cart containing emergency drugs and equipment is readily available, in a designated place, portable, clearly labeled and appropriately stocked at all times**

