

APLS: Cardiac Scenario 3

This is a Teaching Scenario. Some flexibility in how it progresses is possible according to individual learner needs.

History {initial candidate briefing prior to arrival of child}

You are called to a surgical ward where a 6 year old post-operative patient has been found unresponsive and apnoeic. She had just returned from the recovery ward, having had manipulation and plaster of an ankle fracture under anaesthesia.
Estimated Weight 20kg.

Initial impression {provide information as candidate assesses child and applies monitoring}

A surgical registrar just arrived before you and has placed an LMA as bag valve mask ventilation was ineffective. They are ventilating the child through the LMA. There is no visible rise and fall of the chest. No air entry. No pulse oximetry trace. The child is unresponsive, apnoeic and pulseless. Asystole on ECG.

Clinical Course {to be given to candidate as they progress}

There is ROSC when effective bag mask ventilation with high flow oxygen is re-established, chest compressions performed, and adrenaline given.

INSTRUCTORS INFORMATION

Key Treatment Points

Airway & breathing	Remove LMA and establish airway patency
	BVM ventilation with 100% O ₂
Circulation	Asystole protocol, Adrenaline 10 microg/kg IV/IO
	IV/IO access if not in situ
General Therapy	Uninterrupted BLS

Diagnosis: Opioid induced respiratory depression in ward. Cardiorespiratory arrest secondary to hypoxia complicated by LMA, obstructed airway.

Learning objectives

At the end of this session participants should be able to:

- Apply the structured approach to management and diagnosis during cardiac arrest
- Perform BLS/ALS effectively and safely
- Recall and apply the ALS asystole algorithm in their own practice
- Recall and apply the 4 Hs/Ts in their own practice

Cardiac 4 Pacific Hypokalemia

History {initial candidate briefing prior to arrival of child}

You are called urgently to the emergency department. A 10 month old girl who had been brought into the resus area for severe gastroenteritis and shock has become unresponsive. She has a history of 3 days of severe watery diarrhoea and vomiting with increased sleepiness over the last few hours. A nurse is performing CPR. Estimated weight 6 kg.

Initial impression {provide information as candidate assesses child and applies monitoring}
 Apnoeic and pulseless

Clinical course {to be given to candidate as they progress}

Monitor shows VF.

Single shock reverts to sinus tachycardia, HR 160 with ventricular ectopics and barely palpable pulse.

CRT 7 sec. BP 50/34. Airway patent and breathing spontaneously at a rate of 25.

Improves with 2 fluid boluses of 10 mL/kg.

The infant goes back into ventricular fibrillation and has return of spontaneous circulation (ROSC) with the 2nd shock. Sinus rhythm with occasional ventricular ectopics.

K level is 2.1 mmol/l.

INSTRUCTORS INFORMATION

Key treatment points

Airway & breathing	Establish airway patency
	BVM ventilation with 100% O ₂
	Consider LMA/intubation or arrange for intubation
Circulation	VF protocol
	IV/IO access if not in situ
	N.Saline 10 mL/kg x 2-4. Consider inotropes
Specific therapy	Seek expert advice: KCL 0.2 - 0.4 mmol/kg/hour for 2 hours. Check VBG/U&Es
General therapy	Uninterrupted BLS

Diagnosis

Cardiorespiratory arrest: Ventricular fibrillation due to hypokalaemia in the setting of gastroenteritis and hypovolaemic shock

Learning objectives

At the end of this session participants should be able to:

- Apply the structured approach to management and diagnosis during cardiac arrest
- Perform BLS/ALS effectively and safely
- Recall and apply the VF ALS algorithm in their own practice
- Recall and apply the safe management of severe hypokalemia

Resources

PIC RCH Hypokalaemia CPG

https://www.rch.org.au/clinicalguide/guideline_index/hypokalaemia/