RESUSCITATION COUNCIL OF SOUTHERN AFRICA

2015

ADVANCED CARDIAC ARREST ALGORITHM

Adult and Paediatric

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Hazards?

Ensure scene is safe

Hello?

Unresponsive?
Not breathing or only gasping?
Pulse?

Help!

Call for assistance and AED / Defib
Emergency number: _____

Has pulse and breathing

- Place in recovery position
- Check for continued breathing
- Reassess continuously

Has pulse but no effective breathing

- Give rescue breaths
- Adult: every 6 seconds
- Child: every 5 seconds
- Infant: every 4 seconds
- Reassess continuously

• No Pulse or not sure
• Pulse rate <60 in children and infants

Start Compressions

Compress the chest fast (almost 2 per second)

Push hard / Ensure full chest recoil /

Minimize interruptions

High Quality CPR:
- Compression rate 100 – 120 per minute
- Avoid excessive ventilation; 1 breath every 6 seconds if advanced airway
- Rotate compressors every 2 minutes
- Consider capnography and arterial monitoring

Breaths

Attempt 2 breaths at 1 breath/second (with O_2 if available) after every 30 compressions

Adult ratio 30:2 | Children/Infants 30:2 (2-rescuer 15:2)

Continue until AED / Defib arrives

If unable to perform breaths, do continuous compressions until equipment arrives

Attach AED / Defib immediately

ANALYSE RHYTHM

Shock Advised (VF/VT)

Give 1 Shock

Monophasic – 360J
Biphasic – 120-360J
Paediatric – 4J/kg

Immediately resume CPR starting with compressions. Continue for 2 minutes

No Shock Advised (PEA/Asystole)

- If signs of life present monitor and provide post ROSC care
- If absent - continue CPR

Immediately resume CPR starting with compressions. Continue for 2 minutes

Advanced Considerations:
- Correct contributory causes
- Obtain IV/IO access, take ABG/VBG
- Give high levels of FiO_2 and consider advanced airway if required
- Continuous chest compressions after advanced airway in place
- Consider Adrenaline and antiarrhythmics:
  - Adrenaline 1mg every 3 - 5 min (0.01mg/kg in paed)
  - Amiodarone 300mg followed by 150mg (5mg/kg in paed)

  or if not available

  Lignocaine 1.5mg/kg initial, followed by 0.5mg/kg (max 3mg/kg)

Contributory Causes:
- Hypoxia
- Hypovolaemia
- Hypothermia
- Hydrogen ion (Acidosis)
- Hypo- / Hyperkalaemia
- Hypoglycaemia
- Tension Pneumothorax
- Tamponade (Cardiac)
- Toxins
- Trauma
- Thrombosis (Coronary)
- Thrombosis (Pulmonary)

Additional considerations:

1) VA ECMO might be considered in appropriate centres when available;
2) Ultrasound can be considered as a diagnostic and procedural tool where training and resources exist.