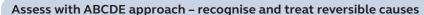
Paediatric cardiac arrhythmias





Oxygen if SpO₂ < 94%, respiratory rate, heart rate, CRT. cardiac monitoring, blood pressure, vascular access, AVPU

Follow **ADVANCED** Signs of circulation? NO LIFE SUPPORT **ALGORITHM**

Decompensated - seek expert help

Signs of vital organ perfusion compromise: Reduced LOC, tachypnoea, bradycardia /tachycardia, BP < 5th centile*, CRT > 2 secs, weak or impalpable

Normal LOC, +/- respiratory distress and signs of circulatory compromise, BP > 5th centile*

Compensated

Bradycardia

- < 1 year < 80 min⁻¹ > 1 year < 60 min⁻¹
- Optimal oxygenation with positive pressure ventilation if required

If unconscious and HR < 60 min⁻¹ despite oxygenation, start chest compressions

No response to oxygenation:

If vagal stimulation possible cause – atropine

If no response to oxygenation or atropine consider adrenaline

Pacing - very rarely required and guided by aetiology.

Tachycardia

Narrow complex

Sinus tachycardia

Infant < 220 min⁻¹ Child < 180 min⁻¹ Gradual onset

Treat the cause:

peripheral pulses

Physiological response:

- Crying
- Exercise
- Anxiety/fear
- Pain

Identify precipitant

Compensatory mechanism:

- Respiratory/circulatory failure
- Hypovolaemia
- Sepsis
- Anaemia

Infant > 220 min⁻¹ Child $> 180 \text{ min}^{-1}$ Abrupt onset

SVT

Synchronised cardioversion with appropriate sedation + analgesia (e.g. IM/intranasal ketamine if delay in IV access)

Chemical cardioversion may be 1st choice if suitable IV access is in place and delay in synchronised cardioversion.

Adenosine

Consider amiodarone before 3rd shock

Broad complex

Could be VT or SVT, if unsure treat as VT

If conscious:

YES

Synchronised cardioversion with appropriate sedation + analgesia (e.g. IM/intranasal ketamine if delay in IV access, do not delay cardioversion).

If unconscious:

Immediate synchronised cardioversion

Consider amiodarone before 3rd shock

Synchronised cardioversion

Monitor for clinical deterioration and seek expert help

Treat the cause:

If bradycardia, consider oxygenation and vagal tone

If SVT, consider vagal manoeuvres

Reassess

Consider adenosine

Drug	Atropine	
Treatment	Up to 11 years: 20 mcg kg ⁻¹ .	
	12-17 years: 300-600 mcg, larger doses may be used in	

emergency.

Adrenaline Adenosine bradycardia: 10 mcg kg⁻¹ repeat if

For

necessary.

Up to 1 year: 150 mcg kg⁻¹, increase 50-100 mcg kg⁻¹ every 1-2 min. Maximum single dose: Neonates 300 mcg kg⁻¹. Infants 500 mcg kg⁻¹⁾

1-11 years: 100 mcg kg⁻¹ increase 50-100 mcg kg⁻¹ every 1-2 min. Maximum single dose: 500 mcg kg⁻¹ (max. 12 mg)

12-17 years: 3 mg IV, if required increase to 6 mg after 1-2 min, then 12 mg after 1-2 min

5 ma ka⁻¹ – bv SLOW IV infusion (> 20 min) before 3rd cardioversion in discussion with paediatric cardiologist/expert

Amiodarone

With appropriate sedation + analgesia (e.g. IM/intranasal Ketamine if delay in IV access + airway management) - IV access attempts must not delay cardioversion

1st shock: 1 J kg-1 2nd shock: 2 J kg⁻¹, consider up to 4 J ka⁻¹

Magnesium

25-50 ma ka⁻¹ Maximum per dose 2 a to be given over 10-15 min, may be repeated once if necessary, in Torsades de pointes VT

Age	*Systolic BP 5th centile mmHg
1 month	50
1 year	70
5 years	75
10 years	80