PALS

DIFFERENTIAL DIAGNOSES FOR ALL ARRHYTHMIAS

6 Hs AND 5 Ts

Thrombosis
Tension Pneumothorax
Tamponade, cardiac
Trauma
Toxins
Hypoxia
Hydrogen ions
Hypothermia
Hypovolemia
Hypo/Hyperkalemia
Hypoglycemia

PATCH 5 MD

Pulmonary embolus (thrombus)
Acidosis (hydrogen ions)
Tension Pneumothorax
Cardiac Tamponade
Hypoxia
Hypoglycemia
Hypothermia
Hypo/Hyperkalemia
Hypovolemia (trauma)
Massive MI (thrombus)
Drug OD (toxins)

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PEDIATRICS

PRIMARY ASSESSMENT

A **A**irway with c-spine precautions
B **B**reathing
C **C**irculation
D **D**isability

SECONDARY ASSESSMENT

E **E**xpose (then provide warmth)
F **F**ull set of vitals
G **G**et history, give comfort
H **H**ead to toe inspection
I **I**nspect the back = logroll

D **D**islodgement
O **O**bstruction
P **P**neumothorax/Peritonitis
E **E**quipment failure

A **A**wake
V **V**erbal
P **P**ainful
U **U**nresponsive

L **L**idocaine
E **E**pinephrine
A **A**tropine
N **N**arcan

EPI 0.1mL/kg

ETT 1:1000 IV/IO 1:10, 000

PULSELESS ELECTRICAL ACTIVITY = PEA

Any rhythm on the monitor other than V-tach, V-fib or asystole that does not have a pulse associated with it

CAPNOMETER – PRIMARY CONFIRMATION FOR INTUBATION

Tan - out of package
Yellow = yes
Purple = problem

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2006 PALS ALGORITHMS

1. BRADYCARDIA

Absolute = <60 BPM
Relative = less than expected for patient or condition

Assess ABC's, include vital signs, oximetry
Give **Oxygen** – manage airway (BVM, LMA, ETT)
Monitor ECG (identify rhythm)
Establish IV/IO

Signs or Symptoms of cardiorespiratory compromise caused by the bradycardia

Consider Differential Diagnoses: (6H and 5T) PATCH 5 MD

ADEQUATE PERFUSION ----- Observe/Monitor

POOR PERFUSION

Perform CPR if despite oxygenation and ventilation if HR <60/min

EPINEPHRINE
IV/IO = 0.1mL/kg of 1:10,000 (1mg/10mL)
ETT = 0.1mL/kg of 1:1000 (1mg/1mL)
REPEAT EVERY 3-5 MINUTES

Consider Atropine 0.02mg/kg (0.2mL/kg) May repeat x 1
Give IF suspect increased vagal tone or AV block
(not commonly used in children, as bradycardia is usually not parasympathetic in origin)

Consider Pacing

****DENERVATED HEARTS:**
DO NOT RESPOND TO ATROPINE – GO TO PACING, CATECHOLAMINE INFUSION OR BOTH

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2. TACHYCARDIAS WITH POOR PERFUSION

Assess ABC's, include Vital Signs
Give **Oxygen** – manage airway (BVM, LMA, ETT)
Monitor
Establish IV/IO

Consider Differential Diagnoses: (6H and 5T) PATCH 5 MD

SVT (narrow QRS)

History incompatible
P waves absent/abnormal
HR not variable with activity
History of abrupt changes
Infant: rate usually ≥ 220
Child: rate usually ≥ 180

CONSIDER VAGAL MANEUVERS (no delays)
Adenosine 0.1 mg/kg (**If IV readily available**)
Max 1st dose: 6 mg
MR x 1 at 0.2 mg/kg – Max 2nd dose: 12 mg
Followed by NS flush
OR
SYNCH CARDIOVERSION at 0.5 – 1J/kg
and may increase to 2 J/kg
Consider sedation – do not delay for this

VENTRICULAR TACHYCARDIA (WIDE QRS)

SYNCH CARDIOVERSION at 0.5 – 1J/kg and may increase to 2 J/kg
Consider sedation – do not delay for this

MAY ATTEMPT ADENOSINE IF IT DOES NOT DELAY ELECTRICAL CARDIOVERSION

Consult Pediatric Cardiologist
Amiodarone 5mg/kg IV over 20-60 mins
OR
Procainamide 15 mg/kg IV over 30-60 mins

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3. ASYSTOLE/PEA

Assess Responsiveness
ABC's - AVOID HYPERVENTILATION
Perform CPR :
PUSH HARD, PUSH FAST – ENSURE CHEST RECOIL – MINIMIZE INTERRUPTIONS OF COMPRESSIONS
When monitor available:
Confirm in a 2nd Lead (I, II or III) and Turn Up ECG gain/sensitivity

Consider Differential Diagnoses: (6H and 5T) PATCH 5 MD

CPR = 5 cycles = 2 MINUTES AT 30:2 OR 15:2 for 2 RESCUERS
Manage Airway – LMA, COMBITUBE, BVM, INTUBATE
(WITH ADVANCED AIRWAY – COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)
Establish IV access

EPINEPHRINE IV/IO = 0.1mL/kg of 1:10,000 (1mg/10mL)
ETT = 0.1mL/kg of 1:1000 (1mg/1mL)
REPEAT EVERY 3-5 MINUTES

RESUME CPR IMMEDIATELY for 2 MINUTES
(WITH ADVANCED AIRWAY – COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)

EPINEPHRINE IV/IO = 0.1mL/kg of 1:10,000 (1mg/10mL)
ETT = 0.1mL/kg of 1:1000 (1mg/1mL)
REPEAT EVERY 3-5 MINUTES

RESUME CPR IMMEDIATELY for 2 MINUTES
(WITH ADVANCED AIRWAY – COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)

Consider early termination of efforts

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4. V-FIB AND PULSELESS V-TACH

Assess Responsiveness
ABC's - AVOID HYPERVENTILATION
Perform CPR UNTIL defibrillator available:
PUSH HARD, PUSH FAST – ENSURE CHEST RECOIL – MINIMIZE INTERRUPTIONS OF COMPRESSIONS
VF/VT present on monitor **THEN**

⇓

DEFIBRILLATE VF/VT 2J/KG (monophasic or biphasic)
No change on monitor

↓

CPR IMMEDIATELY for 2 MINUTES (5 CYCLES OF 30:2 or 15:2 for 2 rescuers)
Manage Airway – LMA, COMBITUBE, BVM, INTUBATE
(WITH ADVANCED AIRWAY– COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)
Establish IV access

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Consider Differential Diagnoses: (6H and 5T) PATCH 5 MD

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DEFIBRILLATE VF/VT **4**J/KG (monophasic or biphasic)
No change on monitor (Pulse check performed only if rhythm restored)

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RESUME CPR IMMEDIATELY for 2 MINUTES
(WITH ADVANCED AIRWAY – COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)
AND
EPINEPHRINE
IV/IO = 0.1mL/kg of 1:10,000 (1mg/10mL)
ETT = 0.1mL/kg of 1:1000 (1mg/1mL)

↓

DEFIBRILLATE VF/VT **4**J/KG (monophasic or biphasic)
No change on monitor

↓

RESUME CPR IMMEDIATELY for 2 MINUTES
(WITH ADVANCED AIRWAY – COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)
AND
AMIODARONE 5 mg/kg, repeat up to 15 mg/kg = Max: 300 mg
OR if AMIODARONE UNAVAILABLE
LIDOCAINE 1mg/kg IVP (may repeat in 5-10 minutes – Max 100 mg)
OR
CONSIDER - Magnesium sulfate 25-50 mg/kg for **Polymorphic VT (Max: 2 gms)**

↓

DEFIBRILLATE VF/VT **4**J/KG (monophasic or biphasic)
No change on monitor

↓

RESUME CPR IMMEDIATELY for 2 MINUTES
(WITH ADVANCED AIRWAY – COMPRESS 100/MIN AND VENT AT 8-10/MIN OR 1 EVERY 6-8 SECONDS)

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CONTINUE WITH SHOCK, CPR/DRUG, SHOCK, CPR/DRUG UNTIL CODE SITUATION TERMINATED

WHEN NON LETHAL RHYTHM RETURNS ON MONITOR – NO PULSE CHECK –

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DO CPR FOR 2 MINS, THEN CHECK PULSE AND MANAGE FROM THERE

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