PEDIATRIC RESUSCITATION FOR SUSPECTED OR CONFIRMED COVID-19 PATIENTS

MÓNICA PAES MAMEDE; JOANA RODRIGUES; GABRIELA COSTA.
1. CENTRO HOSPITALAR UNIVERSITÁRIO LISBOA CENTRAL; 2. HOSPITAL DE DONA ESTEFÂNIA, LISBON - PORTUGAL

General Considerations

1. Effective Team Communication: DNR Decision, Limit Personnel, Task Distribution

2. Wear PPE When Approaching the Victim (ACCORDING TO RISK LEVEL): Put on/remove PPE safely [AVOID SELF-CONTAMINATION]


4. Early Supplemental O₂: cover the patient’s mouth with a surgical mask when using Nasal Cannula or FM.

5. Ventilation: Use a BMD with a Clear Plastic Drape and a Viral Filter between the mask and bag. Create a FM tight seal and consider SGA use [PREVENT LEAKAGE AND AEROSOLIZATION]

6. ETI as Preferred Airway Approach: Rapid Sequence ETI with a cuffed ETI by an Experienced Professional [LOWER RISK OF AEROSOLIZATION]

7. Early Rhythm Analysis and Defibrillation in case of High Likelihood of Primary Shockable Rhythm [EARLY ROSC MAY PREVENT NEED FOR FURTHER RESUSCITATION MEASURES WHICH GENERATE AEROSOLS]

8. In the Absence of Trained Airway Manager, Rescuers Should Use SGA [PREVENT LEAKAGE AND AEROSOLIZATION]

9. Dispose of and Disinfect All Equipment Used During CPR [ACCORDING TO LOCAL RECOMMENDATIONS]

AEROSOLIZATION ➔ CONTAMINATION RISK!

AEROSOLIZATION:赣键的CELL

PEDIATRIC CARDIAC ARREST ALGORITHM

Reversible Causes (4H’s e 4T’s)
- Hypoxia
- Hypovolemia
- Hydroelectrolytic (imbalance)
- Hypothermia
- Toxins
- Thromboembolism
- Tamponade, cardiac
- Tension Pneumothorax

Unresponsive Not Breathing Normally

Check pulse during 10 sec
- Brachial (infant)
- Carotid (>1 year)
- Femoral (any age)

CALL RESUSCITATION TEAM! After 1min of CPR first, if alone

CALL AN AVAILABLE COMPETENT PROVIDER

Alert for Suspected/Confirmed COVID-19 Infection!

No Chest Compressions or Airway Procedures without Rescuers Adequate PPE and a Surgical Mask over the Child!

Stop Compressions only during ETI!

Start CPR
(If Pulse < 60/min + Poor Perfusion Signs)
High Quality Compressions (100 - 120cpm)
(5 initial breaths)

Early Monitoring of Patient’s Cardiac Arrest Rhythm

Assess Rhythm

POST - CPR TREATMENT
ABCDE Approach
Control Oxygenation and Ventilation
(Aim for SpO₂ 94 – 98%)
Investigate and treat precipitating cause
ICU Transport

Shockable (VF, Pulseless VT)
Adrenaline 10 mcg.kg⁻¹ IV/IO
Every 3-5 min
Consider Amiodarone 5 mg.kg⁻¹ IV/IO after 3ʳᵈ and 5ᵗʰ shock

1 Shock
4 J/Kg
Immediately resume CPR 2 min (MINIMISE INTERRUPTIONS)

Non - Shockable (PEA, Asystole)
Adrenaline 10 mcg.kg⁻¹ IV/IO
every 3-5min

MINIMISE CLOSED CIRCUIT DISCONNECTIONS!

To switch to Hand Ventilation at ICU you may need to use a Mapleson C Circuit:
1. Clamp ET and stop the circuit before disconnecting;
2. Disconnect breathing circuit distally to high quality filter;
3. Connect with Mapleson C circuit.

Avoid Overventilation [ACCORDING TO ORDER] to prevent:
- ↑Intrathoracic Pressure (↓Venous Return)
- Respiratory Alkalosis (↑Cerebral Blood Flow)

Ventilation of an Intubated Patient during ALS at Operating Room or ICU

Ventilation

MINIMISE CLOSED CIRCUIT DISCONNECTIONS!

- 1 Shock
- 4 J/Kg
- Immediately resume CPR 2 min (MINIMISE INTERRUPTIONS)

Airway Approach
- FM + Clear Plastic Drape
- 2nd Generation SGA
- VideoLaryngoscope
- Cuffed ET + styllet and 5/10mL syringe
- Surgical Tape
- Bag-Mask Device or Mapleson C circuit with High Quality Filters (HME AND HEPA filters)
- Venous Catheters and Intraosseous Needles
- Monitor + Mechanical Ventilator
- Ventilator Circuit with High Quality Filter at the End of the Expiratory Limb
- Capnography
- External Defibrillator
- Resuscitation Drugs
  - Adrenaline 10 mcg.kg⁻¹
  - Amiodarone 5 mcg.kg⁻¹

Adapted from SPA and CAR / ESRA Portugal Recommendations | Based Upon Expert Opinion