

Summary of Key 2020 PALS Issues and Major Changes

Many key issues in the review of the pediatric advanced life support literature resulted in refinement of existing recommendations rather than in new recommendations. New information or updates are provided about fluid resuscitation in febrile illness, atropine use before tracheal intubation, use of amiodarone and lidocaine in shock-refractory VF/pVT, TTM after resuscitation from cardiac arrest in infants and children, and post-cardiac arrest management of blood pressure.

- **Care with fluids in fever:** In specific settings, when treating pediatric patients with febrile illnesses, the use of restrictive volumes of isotonic crystalloid leads to improved survival. This contrasts with traditional thinking that routine aggressive volume resuscitation is beneficial.
- **Atropine for RSI:** Routine use of atropine as a premedication for emergency tracheal intubation in non-neonates, specifically to prevent arrhythmias, is controversial. Also, there are data to suggest that there is no minimum dose required for atropine for this indication.
- **Arterial pressure monitoring:** If invasive arterial blood pressure monitoring is already in place, it may be used to adjust CPR to achieve specific blood pressure targets for children in cardiac arrest.
- **Antiarrhythmics in cardiac arrest:** Amiodarone *or* lidocaine is an acceptable antiarrhythmic agent for shock-refractory pediatric VF and pVT in children.
- **Epinephrine in cardiac arrest:** Epinephrine continues to be recommended as a vasopressor in pediatric cardiac arrest.
- **ECMO:** For pediatric patients with cardiac diagnoses and IHCA in settings with existing extracorporeal membrane oxygenation protocols, ECPR may be considered.
- **TTM after ROSC:** Fever should be avoided when caring for comatose children with ROSC after OHCA. A large randomized trial of therapeutic hypothermia for children with OHCA showed no difference in outcomes whether a period of moderate therapeutic hypothermia (with temperature maintained at 32°C to 34°C) or the strict maintenance of normothermia (with temperature maintained 36°C to 37.5°C) was provided.
- **Prognosis in cardiac arrest:** Several intra-arrest and post-cardiac arrest clinical variables were examined for prognostic significance. No single variable was identified to be sufficiently reliable to predict outcomes. Therefore, caretakers should consider multiple factors in trying to predict outcomes during cardiac arrest and in the post-ROSC setting.
- **Fluids to maintain BP after cardiac arrest:** After ROSC, fluids and vasoactive infusions should be used to maintain a systolic blood pressure above the fifth percentile for age.
- **SaO₂ after ROSC:** After ROSC, normoxemia should be targeted. When the necessary equipment is available, oxygen administration should be weaned to target an oxyhemoglobin saturation of 94% to 99%. Hypoxemia should be strictly avoided. Ideally, oxygen should be titrated to a value appropriate to the specific patient condition. Likewise, after ROSC, the child's PaCO₂ should be targeted to a level appropriate to each patient's condition. Exposure to severe hypercapnia or hypocapnia should be avoided.