



احیای قلبی-ریوی کودکان

تهیه کننده: آذر رضاصفت

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سوپروایزر آموزشی مرکز آموزشی درمانی و پژوهشی ۱۷ شهرپور رشت

1401

تغییرات AHA 2020 در مورد تعداد تهویه در احیای پایه

Major New and Updated Recommendations

Changes to the Assisted Ventilation Rate: Rescue Breathing

2020 (Updated): (PBLIS) For infants and children with a pulse but absent or inadequate respiratory effort, it is reasonable to give 1 breath every 2 to 3 seconds (20-30 breaths/min).

2010 (Old): (PBLIS) If there is a palpable pulse 60/min or greater but there is inadequate breathing, give rescue breaths at a rate of about 12 to 20/min (1 breath every 3-5 seconds) until spontaneous breathing resumes.



تغییرات AHA 2020 در مورد تعداد تنویه در احیای پیشرفته

Changes to the Assisted Ventilation Rate: Ventilation Rate During CPR With an Advanced Airway

2020 (Updated): (PALS) When performing CPR in infants and children with an advanced airway, it may be reasonable to target a respiratory rate range of 1 breath every 2 to 3 seconds (20–30/min), accounting for age and clinical condition. Rates exceeding these recommendations may compromise hemodynamics.

2010 (Old): (PALS) If the infant or child is intubated, ventilate at a rate of about 1 breath every 6 seconds (10/min) without interrupting chest compressions.



علت تغییرات تعداد تهویه

Why: New data show that higher ventilation rates (at least 30/min in infants [younger than 1 year] and at least 25/min in children) are associated with improved rates of ROSC and survival in pediatric IHCA. Although there are no data about the ideal ventilation rate during CPR without an advanced airway, or for children in respiratory arrest with or without an advanced airway, for simplicity of training, the respiratory arrest recommendation was standardized for both situations.



تغییرات AHA در مورد کاف لوله تراشه

Cuffed ETTs

2020 (Updated): It is reasonable to choose cuffed ETTs over uncuffed ETTs for intubating infants and children. When a cuffed ETT is used, attention should be paid to ETT size, position, and cuff inflation pressure (usually <20-25 cm H₂O).

2010 (Old): Both cuffed and uncuffed ETTs are acceptable for intubating infants and children. In certain circumstances (eg, poor lung compliance, high airway resistance, or a large glottic air leak) a cuffed ETT may be preferable to an uncuffed tube, provided that attention is paid to [ensuring appropriate] ETT size, position, and cuff inflation pressure.



تغییرات AHA در مورد کاف لوله تراشه

Why: Several studies and systematic reviews support the safety of cuffed ETTs and demonstrate decreased need for tube changes and reintubation. Cuffed tubes may decrease the risk of aspiration. Subglottic stenosis is rare when cuffed ETTs are used in children and careful technique is followed.



تغییرات AHA در مورد کاربرد فشار کریکوئید در احیا

Cricoid Pressure During Intubation

2020 (Updated): Routine use of cricoid pressure is not recommended during endotracheal intubation of pediatric patients.

2010 (Old): There is insufficient evidence to recommend routine application of cricoid pressure to prevent aspiration during endotracheal intubation in children.

Why: New studies have shown that routine use of cricoid pressure reduces intubation success rates and does not reduce the rate of regurgitation. The writing group has reaffirmed previous recommendations to discontinue cricoid pressure if it interferes with ventilation or the speed or ease of intubation.



تغییرات AHA در مورد زمان شروع اولین دوز آدرنالین

Emphasis on Early Epinephrine Administration

2020 (Updated): For pediatric patients in any setting, it is reasonable to administer the initial dose of epinephrine within 5 minutes from the start of chest compressions.

2015 (Old): It is reasonable to administer epinephrine in pediatric cardiac arrest.

Why: A study of children with IHCA who received epinephrine for an initial nonshockable rhythm (asystole and pulseless electrical activity) demonstrated that, for every minute of delay in administration of epinephrine, there was a significant decrease in ROSC, survival at 24 hours, survival to discharge, and survival with favorable neurological outcome.



تغییرات AHA در مورد زمان شروع اولین دوز آدرنالین

Patients who received epinephrine within 5 minutes of CPR initiation compared with those who received epinephrine more than 5 minutes after CPR initiation were more likely to survive to discharge. Studies of pediatric OHCA demonstrated that earlier epinephrine administration increases rates of ROSC, survival to intensive care unit admission, survival to discharge, and 30-day survival.



تغییرات AHA در مورد پایش فشارخون

Invasive Blood Pressure Monitoring to Assess CPR Quality

2020 (Updated): For patients with continuous invasive arterial blood pressure monitoring in place at the time of cardiac arrest, it is reasonable for providers to use diastolic blood pressure to assess CPR quality.



تغییرات AHA در مورد پایش فشارخون

2015 (Old): For patients with invasive hemodynamic monitoring in place at the time of cardiac arrest, it may be reasonable for rescuers to use blood pressure to guide CPR quality.

Why: Providing high-quality chest compressions is critical to successful resuscitation. A new study shows that, among pediatric patients receiving CPR with an arterial line in place, rates of survival with favorable neurologic outcome were improved if the diastolic blood pressure was at least 25 mm Hg in infants and at least 30 mm Hg in children.⁸



تغوصیه های AHA در مورد شوک سپتیک (بلاوس) مایعات وریدی

Septic Shock

Fluid Boluses

2020 (Updated): In patients with septic shock, it is reasonable to administer fluid in 10 mL/kg or 20 mL/kg aliquots with frequent reassessment.

2015 (Old): Administration of an initial fluid bolus of 20 mL/kg to infants and children with shock is reasonable, including those with conditions such as severe sepsis, severe malaria, and dengue.



توصیه های AHA در مورد شوک سپتیک (استفاده از وازوپرسور)

Choice of Vasopressor

2020 (New): In infants and children with fluid-refractory septic shock, it is reasonable to use either epinephrine or norepinephrine as an initial vasoactive infusion.

2020 (New): In infants and children with fluid-refractory septic shock, if epinephrine or norepinephrine are unavailable, dopamine may be considered.



توصیه های AHA در مورد شوک سپتیک (استفاده از کورتیکواستروئیدها)

Corticosteroid Administration

2020 (New): For infants and children with septic shock unresponsive to fluids and requiring vasoactive support, it may be reasonable to consider stress-dose corticosteroids.



علت اقدامات درمورد شوک سپتیک

Why: Although fluids remain the mainstay of initial therapy for infants and children in shock, especially in hypovolemic and septic shock, fluid overload can lead to increased morbidity. In recent trials of patients with septic shock, those who received higher fluid volumes or faster fluid resuscitation were more likely to develop clinically significant fluid overload and require mechanical ventilation. The writing group reaffirmed previous recommendations to reassess patients after each fluid bolus and to use either crystalloid or colloid fluids for septic shock resuscitation.



علت اقدامات در مورد شوک سپتیک

Previous versions of the Guidelines did not provide recommendations about choice of vasopressor or the use of corticosteroids in septic shock. Two RCTs suggest that epinephrine is superior to dopamine as the initial vasopressor in pediatric septic shock, and norepinephrine is also appropriate. Recent clinical trials suggest a benefit from corticosteroid administration in some pediatric patients with refractory septic shock.



تغییرات AHA 2020 در مورد شوک هموراژیک

Hemorrhagic Shock

2020 (New): Among infants and children with hypotensive hemorrhagic shock following trauma, it is reasonable to administer blood products, when available, instead of crystalloid for ongoing volume resuscitation.

Why: Previous versions of the Guidelines did not differentiate the treatment of hemorrhagic shock from other causes of hypovolemic shock. A growing body of evidence (largely from adults but with some pediatric data) suggests a benefit to early, balanced resuscitation using packed red blood cells, fresh frozen plasma, and platelets. Balanced resuscitation is supported by recommendations from the several US and international trauma societies.



توصیه های 2020 AHA در مورد میوکاردیت

Myocarditis

2020 (New): Given the high risk of cardiac arrest in children with acute myocarditis who demonstrate arrhythmias, heart block, ST-segment changes, and/or low cardiac output, early consideration of transfer to ICU monitoring and therapy is recommended.

2020 (New): For children with myocarditis or cardiomyopathy and refractory low cardiac output, prearrest use of ECLS or mechanical circulatory support can be beneficial to provide end-organ support and prevent cardiac arrest.

2020 (New): Given the challenges to successful resuscitation of children with myocarditis and cardiomyopathy, once cardiac arrest occurs, early consideration of extracorporeal CPR may be beneficial.



توصیه های 2020 AHA در مورد میوکاردیت

Why: Although myocarditis accounts for about 2% of sudden cardiovascular deaths in infants,¹¹ 5% of sudden cardiovascular deaths in children,¹¹ and 6% to 20% of sudden cardiac death in athletes, previous^{12,13} PALS guidelines did not contain specific recommendations for management. These recommendations are consistent with the 2018 AHA scientific statement on CPR in infants and children with cardiac disease.¹⁴



توصیه های 2020 AHA

درمورد Opioid Overdose

Opioid Overdose

2020 (Updated): For patients in respiratory arrest, rescue breathing or bag-mask ventilation should be maintained until spontaneous breathing returns, and standard PBLS or PALS measures should continue if return of spontaneous breathing does not occur.

2020 (Updated): For a patient with suspected opioid overdose who has a definite pulse but no normal breathing or only gasping (ie, a respiratory arrest), in addition to providing standard PBLS or PALS, it is reasonable for responders to administer intramuscular or intranasal naloxone.



توصیه های AHA 2020 در مورد

Opioid Overdose

2015 (Old): Empiric administration of intramuscular or intranasal naloxone to all unresponsive opioid-associated life-threatening emergency patients may be reasonable as an adjunct to standard first aid and non-healthcare provider BLS protocols.

2015 (Old): ACLS providers should support ventilation and administer naloxone to patients with a perfusing cardiac rhythm and opioid-associated respiratory arrest or severe respiratory depression. Bag-mask ventilation should be maintained until spontaneous breathing returns, and standard ACLS measures should continue if return of spontaneous breathing does not occur.

2015 (Old): We can make no recommendation regarding the administration of naloxone in confirmed opioid-associated cardiac arrest.



توصیه های 2020 AHA در مورد

OpioidOverdose

Why: The opioid epidemic has not spared children. In the United States in 2018, opioid overdose caused 65 deaths in children younger than 15 years and 3618 deaths in people 15 to 24 years old,⁹ and many more children required resuscitation. The 2020 Guidelines contain new recommendations

for managing children with respiratory arrest or cardiac arrest from opioid overdose.

These recommendations are identical for adults and children, except that compression-ventilation CPR is recommended for all pediatric victims of suspected cardiac arrest. Naloxone can be administered by trained providers, laypersons with focused training, and untrained laypersons. Separate treatment algorithms are provided for managing opioid-associated resuscitation emergencies by laypersons, who cannot reliably check for a pulse (Figure 5), and by trained rescuers (Figure 6). Opioid-associated OHCA is the subject of a 2020 AHA scientific statement.¹⁰





با تشکر از حسن توجه شما

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