Part 12: Pediatric Advanced Life Support


Circulation
Volume 132(18 suppl 2):S526-S542
November 3, 2015
Evidence for the use of restrictive volume of intravenous fluid resuscitation, compared with unrestricted volume, by presenting illness and outcome.

<table>
<thead>
<tr>
<th>Studies</th>
<th>Survival to Hospital Discharge</th>
<th>Need for Transfusion or Diuretics</th>
<th>Need for Rescue Fluid</th>
<th>Mechanical Ventilation or Vasopressor</th>
<th>Time to Resolution of Shock</th>
<th>Total IV Fluids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe sepsis/septic shock</td>
<td>Santhanam 2008; Carcillo 1991</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
<td>No Benefit</td>
<td>No Studies Available</td>
</tr>
<tr>
<td>Severe malaria</td>
<td>Maitland 2005; Maitland 2005</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>Harm</td>
<td>No Benefit</td>
<td>No Benefit</td>
</tr>
<tr>
<td>Severe febrile illness with some but not all signs of shock</td>
<td>Maitland 2011; Maitland 2013</td>
<td>Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
<td>No Studies Available</td>
<td>Harm</td>
</tr>
</tbody>
</table>

Evidence for the use of noncrystalloid intravenous fluid resuscitation, compared with crystalloid, by presenting illness and outcome.

<table>
<thead>
<tr>
<th>Illness/Condition</th>
<th>Studies</th>
<th>Survival to Hospital Discharge</th>
<th>Need for Other Treatment</th>
<th>Need for Rescue Fluid</th>
<th>Mechanical Ventilation or Vasopressor</th>
<th>Time to Resolution of Shock</th>
<th>Total IV Fluids</th>
<th>Hospital Duration of Stay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe sepsis/septic shock</td>
<td>Upadhyay 2005</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
<td>No Studies Available</td>
</tr>
<tr>
<td>Dengue shock</td>
<td>Cifra 2003; Dung 1999; Ngo 2001; Wills 2005</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
<td>Benefit</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Benefit</td>
</tr>
<tr>
<td>Severe febrile illness with some but not all signs of shock</td>
<td>Maitland 2011</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
<td>No Benefit</td>
<td>No Benefit</td>
<td>No Studies Available</td>
</tr>
</tbody>
</table>

Pediatric Cardiac Arrest Algorithm—2015 Update.

1. Start CPR
   - Give oxygen
   - Attach monitor/defibrillator
   - Push hard (1/3 of intercostal diameter of chest and fast (100-120/min) and allow complete chest recoil.
   - Minimize interruptions in compressions.
   - Avoid excessive ventilation.
   - Rotate compressor every 2 minutes, or sooner if fatigued.
   - If no advanced airway, 15:2 compression-ventilation ratio.

2. Rhythm shockable?
   - Yes
   - VF/VT
   - CPR 2 min
     - ID/IV access
   - Shock
     - CPR 2 min
       - Epinephrine every 3-5 min
       - Consider advanced airway
     - Rhythm shockable?
       - Yes
       - Shock
       - CPR 2 min
         - Epinephrine every 3-6 min
         - Consider advanced airway
       - CPR 2 min
         - Amiodarone or lidocaine
         - Treat reversible causes

3. VF/VT
   - CPR 2 min
     - ID/IV access
   - Shock
     - CPR 2 min
       - Epinephrine every 3-6 min
       - Consider advanced airway

4. Asystole/PEA
   - CPR 2 min
     - ID/IV access
   - Rhythm shockable?
     - No
     - CPR 2 min
       - Amiodarone or lidocaine
       - Treat reversible causes
   - Rhythm shockable?
     - Yes
     - Shock
     - CPR 2 min
       - Epinephrine every 3-6 min
       - Consider advanced airway

5. Shock
   - CPR 2 min
     - ID/IV access
   - Epinephrine every 3-6 min
   - Consider advanced airway

6. CPR 2 min
   - Epinephrine every 3-5 min
   - Consider advanced airway

7. CPR 2 min
   - Amiodarone or lidocaine
   - Treat reversible causes

8. CPR 2 min
   - Epinephrine every 3-5 min
   - Consider advanced airway

9. Asystole/PEA
   - CPR 2 min
     - ID/IV access
   - Rhythm shockable?
     - No
     - CPR 2 min
       - Amiodarone or lidocaine
       - Treat reversible causes
   - Rhythm shockable?
     - Yes
     - Shock
     - CPR 2 min
       - Epinephrine every 3-6 min
       - Consider advanced airway

10. CPR 2 min
    - Epinephrine every 3-5 min
    - Consider advanced airway

11. CPR 2 min
    - Treat reversible causes

12. CPR 2 min
    - Epinephrine every 3-5 min
    - Consider advanced airway

© 2015 American Heart Association