Clinical Guideline
ED Asthma
Pediatric Emergency Medicine

This guideline serves as a guide and does not replace clinical judgment.

Inclusion criteria:
- Children ≥ 2 y/o
- Known history of asthma
- History consistent with asthma or recurrent wheezing

Supplemental O2 to keep O2 saturation > 90%
Calculate PAS score
Notify Attending Physician if PAS > 3

PAS 0-2
- Albuterol MDI 4-8 puffs
- Consider dexamethasone PO 0.6 mg/kg (max 16 mg)
- Discharge home

PAS 3-6
- Duoneb x3 AND 4 plain Albuterol nebs @ 8 L/min
- Dexamethasone PO 0.6 mg/kg (max 16 mg)

PAS 7-10
- Duoneb x3 AND 4 plain Albuterol nebs @ 8 L/min
- Consider NS bolus 20 ml/kg
- Consider Mag Sulfate IV 50 mg/kg (max 2 grams)
- Methylprednisolone IV 2 mg/kg (max 125 mg)
- Consider Epinephrine 1: 1,000 0.01 mg/kg IM

Reassess and score at the end of 1st hour

PAS 0-2
- Initial PAS 3-6: Observe for 1 hour
- Initial PAS 7-10: Observe for 2 hours

PAS 3-6
- Albuterol neb 20 mg x 1 hr
- Atrovent neb 1.5 mg, if not given
- Dexamethasone PO 0.6 mg/kg, if not given
- Consider NS bolus 20 ml/kg
- Consider Magnesium Sulfate IV 50 mg/kg

PAS 7-10
- Albuterol neb 20 mg x 1 hr
- Atrovent neb 1.5 mg, if not given
- Magnesium sulfate IV 50 mg/kg, if not given
- NS bolus 20 ml/kg, if not given
- Call Respiratory Therapy
- Consider HeliOx
- Consider PICU admission

Reassess and score at the end of the 2nd hour

Discharge Criteria
- PAS 0-2 for at least 1 hour
- Tolerating PO
- Asthma education
- Close medical follow up within 48-72 hrs
- Albuterol MDI 2-6 puffs PRN
- Dexamethasone tablets (Can be crushed)

PAS 3-6
- Admit to acute care floor

PAS 7-10
- Albuterol neb 20 mg x 1 hr
- Atrovent neb, if not given
- Magnesium sulfate IV 50 mg/kg, if not given
- NS bolus 20 ml/kg, if not given
- Maintenance IV fluids with potassium
- Admit to PICU

For questions concerning this guideline, contact:
chorclinicalguidelines@vcuhealth.org

Last updated: August 2018
Next expected update: August 2021
Instructions for assessment of PAS

1. If applicable, turn oxygen therapy off on entry into patient’s room.
2. Step-wise assessment (RR, dyspnea, retractions, auscultation).
3. Throughout assessment, monitor oxygen saturation. Determine score for oxygen saturation based on overall assessment throughout exam (i.e. an unsustained downward drift to 88% with self-resolution to 94% would be scored as “1.” Alternatively, a progressive decline in saturations from 97% to 85% following cessation of O2 should be scored as “2” and oxygen therapy should be resumed immediately).
4. Calculate total score

Table 1: (Modified) Pediatric Asthma Score (PAS):

<table>
<thead>
<tr>
<th>Variable</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 points</td>
</tr>
<tr>
<td><strong>Resp Rate (b/min)</strong></td>
<td></td>
</tr>
<tr>
<td>2-3 years</td>
<td>&lt;35</td>
</tr>
<tr>
<td>4-5 years</td>
<td>&lt;31</td>
</tr>
<tr>
<td>6-12 years</td>
<td>&lt;27</td>
</tr>
<tr>
<td>&gt;12 years</td>
<td>&lt;24</td>
</tr>
<tr>
<td><strong>Dyspnea</strong></td>
<td></td>
</tr>
<tr>
<td>Full sentences and</td>
<td>Partial sentences or poor PO</td>
</tr>
<tr>
<td>Good PO intake</td>
<td></td>
</tr>
<tr>
<td><strong>Retractions</strong>*</td>
<td></td>
</tr>
<tr>
<td>1 or less accessory</td>
<td>2 accessory groups</td>
</tr>
<tr>
<td>group</td>
<td></td>
</tr>
<tr>
<td><strong>Auscultation</strong></td>
<td></td>
</tr>
<tr>
<td>Normal breath sounds</td>
<td>Expiratory wheezing only</td>
</tr>
<tr>
<td><strong>Oxygen Sats (%)</strong></td>
<td></td>
</tr>
<tr>
<td>On Room Air</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

*Accessory muscle groups considered in evaluation of retractions:
1. Nasal (flaring)
2. Supra-sternal (retractions)
3. Intercostals (retractions)
4. Substernal (retractions)
ED Asthma Guideline

Executive Summary

Children’s Hospital of Richmond at VCU ED Asthma Workgroup

Pediatric Emergency Medicine Owner: Rashida Woods, MD
Pediatric Respiratory Committee (consulting): Douglas Willson, MD
Pediatric Emergency Medicine Nursing Practice Council (consulting): Celia Hanson, RN, CPEN

Approved (August 2018)

Pediatric Emergency Medicine Quality Committee:
Rashida Woods, MD

Chief of Emergency Medicine:
Harinder Dhindsa, MD, MPH, MBA, FACEP, FAAEM

CHoR Clinical Guidelines Committee:
Jonathan Silverman, MD

CHoR Quality Council, Executive Sponsor:
Jeniece Roane, MS, RN, NE-BC
José Muñoz, MD

References


Citation

Title: ED Asthma Guideline

Authors: Rashida Woods, MD
Douglas Willson, MD
Celia Hanson, RN, CPEN

Date: August 2018

Retrieval website: http://www.chrichmond.org/clinicalguideline-EDasthma