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 x 3 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 neb1.5 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

Children's Hospital of Richmond at VCU

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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):

Variable	Score		
	0 points	1 point	2 points
Resp Rate (b/min) 2-3 years 4-5 years 6-12 years >12 years	 <35 <31 <27 <24	 35-39 31-35 27-30 24-27	 >39 >35 >30 >27
Dyspnea	Full sentences and Good PO intake	Partial sentences or poor PO	Single words or unable to PO
Retractions*	1 or less accessory group	2 accessory groups	3 or more accessory groups
Auscultation	Normal breath sounds	Expiratory wheezing only	Inspiratory and expiratory wheezing or diminished breath sounds
Oxygen Sats (%) On Room Air	>95	90-95	<90

*Accessory muscle groups considered in evaluation of retractions:

1. Nasal (flaring)
2. Supra-sternal (retractions)
3. Intercostals (retractions)
4. Substernal (retractions)

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Executive Summary

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References

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Rowe BH[1], Bretzlaff JA, Bourdon C, Bota GW, Camargo CA Jr. Magnesium sulfate for treating exacerbations of acute asthma in the emergency department. Cochrane Database Syst Rev. 2000; (2):CD001490. Pubmed PMID:10796650.

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