Goals and Metrics

- Steroids in <1 hour if ≥ 2 ALB/IPR neb
- Disposition plan within 3 hours of 1st neb (ED LOS)
- Documented Asthma plan in all discharges
- Inhaler and spacer education in all discharges
- Controller prescriptions
- 24-72 hour return rate 30-day re-admission rate
- **★ Potential pathway** exclusion conditions:
- **Bronchiolitis**
- Bacterial pneumonia
- Stridor
- Chronic lung disease
- Neurologic disorder
- Immunodeficiency
- Tracheostomy
- Congenital heart disease

Hasbro Children's Hospital, Pediatric Emergency Department **Evidence-Based Guidelines for Management of Acute Asthma Symptoms**

Children ≥2 years with symptoms and exam findings suggesting bronchospasm and lower airway airflow obstruction *

If improved after 1 Albuterol or ALB/ITR treatment (MDI or Neb) PRS score 0-3

-No steroids

-Go to: Discharge planning

No signs of respiratory distress

SpO2 >92%

PRS pre/post EACH intervention.

Monitor for at least 60 minutes

- Dexamethasone within 1 hour

- Asthma education/Action plan

Administer ALB/IPR neb #2

Initiate Discharge Planning

Discharge if meets criteria **

Administer Albuterol/Ipratroprium (ALB/IPR) via Breath Actuate Nebulizer Or albuterol MDI with spacer

Perform PRS and clinical assessment pre/post treatment

Severe Respiratory Distress

- Epinephrine IM (1:1000)

- Critical Care Room

http://www.nhlbi.nih.gov/guideline

http://pediatrics.aappublications.org/con

tent/early/2014/02/04/peds.2013-2273

http://pediatrics.aappublications.org/cgi

s/asthma/asthsumm.pdf

Timing of Steroids in Asthma

/content/abstract/92/4/513

Meta Analysis of Dexamethasone:

- ALB/ITR neb x3
- IV access

References

- IVF bolus (20ml/kg)
- IV Steroid
- Maintain SpO2 >90%

MODERATE Asthma MILD Asthma Incomplete Response to neb (PRS 7-9) Some response to neb (PRS <6) Mild/Moderate Respiratory distress

- Administer ALB/IPR (3 total within 1 hr)
- Administer Dexamethasone PO

PRS pre/post EACH intervention, at least Q2hrs

Consider:

- Continuous albuterol X1 hour
- Albuterol nebs or MDI at least Q2hrs
- Magnesium IV
- IVF bolus
- q1 or q2 hour albuterol nebs
- Oxygen to keep saturation >90%

De-escalate when PRS <5 and clinical improvement

Determine disposition plan within 3 hours from first treatment

SEVERE Asthma (PRS 10-12) **Poor Response to nebs**

Moderate-severe respiratory distress

PRS pre/post EACH intervention, at least Q1hr

- IV Dexamethasone or methylprednisolone
- Continuous albuterol
- IV Magnesium
- IV NS bolus
- Oxygen to keep saturation >90%

Consider:

- CXR
- **IV** Terbutaline
- NPO
- IV maintenance fluids
- iSTAT venous
- BiPAP
- Heliox
- Ketamine for sedation PRN
- Mechanical ventilation

Determine disposition plan within 3 hours of first treatment

Common Medications				
Medication	Route	Dose	Max Dose	
Dexamethasone	PO or IV	0.6mg/kg	16mg	
Prednisone	РО	2mg/kg	60mg	
Methylprednisol one	IV	2mg/kg	125 mg	
Magnesium	IV	50mg/kg	2g	
Continuous albuterol	Inh	<10kg: 5mg/hr 10-15kg: 10mg/hr 15-30kg: 15mg/hr ≥30kg: 20mg/hr		
Albuterol MDI	Inh	<10kg: 4 puffs 10-15kg: 6 puffs >15kg: 8 puffs		
Epinephrine	IM	0.01mg/kg (1mg/mL)	0.5mg	
Terbutaline	IV	10mcg/kg bolus 0.1mcg/kg/min	750mcg 3mcg/kg/mi n	
Ketamine	IV	2mg/kg IV bolus, drip 0.5-1 mg/kg/hr		

Admission Criteria				
Clinical Decision Unit (CDU)	Inpatient Unit	Intensive Care Unit (ICU)		
Anticipated admission < 24 hours Clinical assessment by LIP determines need for Q2hr albuterol treatment	Likely to require hospitalization > 24hrs Meets CDU exclusion criteria	Continues on Severe Asthma Pathway after intervention Needs continuous albuterol >2hrs in ED		
Does not meet any exclusion criteria (see CDU exclusion criteria)	PEWS (Pedi Early Warning Score) score <5; does not meet ICU level of care	Requires IV terbutaline, BiPAP, mechanical ventilation Treatment <i>unlikely</i> to be weaned to Q2 hr albuterol Tx within next 2 hours		

Pediatric Respiratory score (PRS)

0-3 Normal

4-6 Mild

7-9 Moderate

10-12 Severe

Scored 0-3 based on age related: Appearance Retractions Respiratory Rate **Breath Sounds**

** Discharge Criteria

- Observe at LEAST 1 hour after ≥ 2 DuoNebs
- Observe at LEAST 2 hours after ≥ 3 DuoNebs
- No social barriers to appropriate home management

Discharge Planning:

- Albuterol 4-6 puffs q4 hours for at least 24 hours, titrate dose over 2-3 davs
- 2. Albuterol MDI for home with teaching
- 3 Steroid course
- 4. Start controller medication or increase dose
- 5. Review Asthma Action Plan
- 6. Discuss plan with PCP. Follow-up with PCP in 1-2 days