The optimal management of preschool asthma in Canada

Dr. Sharon Dell, BEng, MD, FRCPC (Pediatric Respirologist)
Objectives

• Learn about the burden of underappreciated asthma in children
• Learn how to diagnose preschool asthma
• Learn how to manage persistent preschool asthma
• Learn how to manage intermittent asthma in the young child
Risk Factors Increasing Likelihood of Asthma With Early Childhood Wheezing:

- Severe episodes (hospitalized)
- Wheezing after 2 years of age
- More than 3 episodes of wheezing in a year
- Personal history of atopy
- Family history of asthma or atopy
- Maternal smoking in pregnancy
- Clinical benefits from asthma medications
- Chronic cough (nocturnal or with exercise)
- Wheezing apart from viral infections
Diagnosis of Asthma In Preschool Children

Criteria:

- Severe episode of wheezing/dyspnea
- Wheezing/dyspnea after 1 year of age
- 3 or more episodes of wheezing
- Chronic cough, especially at night or exercise-induced
- Clinical benefits from anti-asthma medications

Greater the number of criteria met, greater the likelihood of asthma.
# Differential Diagnosis Is Different For Young Children With Asthma

<table>
<thead>
<tr>
<th>Clinical Finding</th>
<th>Potential Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to thrive, steatorrhea</td>
<td>Cystic Fibrosis</td>
</tr>
<tr>
<td>Frequent Infections</td>
<td>Immunodeficiency</td>
</tr>
<tr>
<td>Chronic rhinitis and recurrent otitis media</td>
<td>Primary Ciliary Dyskinesia</td>
</tr>
<tr>
<td>Severe regurgitation or vomiting</td>
<td>Gastroesophageal reflux</td>
</tr>
<tr>
<td>Persistent wheezing</td>
<td>Fixed airway obstruction</td>
</tr>
<tr>
<td>Heart murmur or known congenital heart disease</td>
<td>Wheezing caused by congestive heart failure</td>
</tr>
<tr>
<td>Noisy breathing caused by retained upper airway secretions, aspiration</td>
<td>Swallowing disorder</td>
</tr>
</tbody>
</table>
Clinical Index For Predicting If The Child Would Outgrow Asthma

Modified Asthma Predictive Index

• 4 episodes of wheeze during first 3 years, at least 1 episode of which was observed by a physician. Combined with

  1 major risk factor:
  • Parental history of asthma
  • Physician-diagnosed atopic dermatitis
  • Allergic sensitization to at least 1 aeroallergen

Or combined with at least 2 minor risk factors:
  • Wheezing unrelated to colds
  • Allergic sensitization to milk, eggs or peanut
  • Blood eosinophils above 4%

<table>
<thead>
<tr>
<th>Drug</th>
<th>Low Daily Dose (ug)</th>
<th>Double ICS Dose (ug)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beclomethasone dipropionate</td>
<td>100 divided bid</td>
<td>200 divided bid</td>
</tr>
<tr>
<td>(QVAR® MDI and spacer)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budesonide</td>
<td>500 divided bid</td>
<td>1000 divided bid</td>
</tr>
<tr>
<td>(Pulmicort® Nebules)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ciclesonide</td>
<td>NS</td>
<td>NS</td>
</tr>
<tr>
<td>(Alvesco®)**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluticasone</td>
<td>100 divided bid</td>
<td>200 divided bid</td>
</tr>
<tr>
<td>(Flovent® MDI and spacer)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Not approved for under 5 years in Canada
NS = Not studied in this age group

Anti-Leukotriene Therapy in Children Conclusion

• LTRAs are acceptable, second-line daily monotherapy for children two and over if:
  • adherence to ICS therapy is unsatisfactory
  • the ICS dose to maintain control is very low (100μg/day or less of HFA beclomethasone equivalent)
  • if the patient has mild allergic rhinitis
• Used as add-on therapy in children <5yrs, older research indicates therapeutic benefits

CACG Pediatric Recommendations

Treatment of Intermittent Asthma

- There are insufficient data to recommend short courses of ICS in children. The safety of this approach has not been established.
- Physicians must monitor children with intermittent symptoms to ensure they do not require maintenance therapy.
- Children with frequent symptoms, severe asthma exacerbations or both should receive a trial of regular treatment with ICS.
Key Messages

• Differential diagnosis is different in young children
• Low dose inhaled steroids are safe and effective when used with good inhaler technique
• High dose inhaled steroids may be associated with side effects and should only be used by an asthma specialist
• If a young child is not responding to treatment, consider alternate diagnoses and refer to a specialist
Case: Billy, 2 years old

Key Elements of Billy’s History

• 2 y.o. boy presenting with 4th episode of wheezing in 18 months
• Several ER visits requiring antibiotics and bronchodilators
• Feels better 2hrs post bronchodilator
• Several colds leading to coughing, wheezing and dyspnea
• No other medical problems
• No symptoms between colds
• Mom smoked 10 cigarettes per day during pregnancy
For further learning visit us at www.olapep.ca