

AAE: Pre-Conference Pharmacology Course
Thursday August 4, 2022
Managing Exercise Induced Asthma

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No disclosures

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Objectives:

1. The learner will be able to explain the rationale for a comprehensive evaluation of "exercise induced asthma".
2. The learner will be able to identify possible comorbid conditions that can overlap with exercise induced bronchospasm

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HPI:
 Emma is a 17-year-old female here for a follow up visit for asthma with her mother who provides a reliable history. Last seen in the pulmonary medicine office for exercise induced asthma, dyspnea and vocal cord dysfunction.

The chief complaint today is worsening of exercise induced asthma that started in August. Emma is a soccer player and if she is not practicing or playing (six days a week), she is working out daily by running on a treadmill. She also has been sick with pharyngitis (reportedly testing for strep and COVID-19 have been negative) and has been told it is viral. Emma's symptoms are reduced exercise tolerance and endurance. **Mom reports that despite premedication with albuterol, she is only able to play soccer for about ten minutes, stridor, productive cough of brown secretions that triggers post-tussive reflux, dyspnea, chest pain and chest tightness. When she has to stop playing due to symptoms, Emma says she has difficulty both inhaling as well as exhaling, can't talk, so she stops playing, rests, drinks water and after about eight minutes may still feel short of breath but is able to resume play. She doesn't report feeling better after taking albuterol.** Emma has been treated with two courses of prednisone and four weeks ago was started on Flovent 110 mcg MDI (administered without a chamber).

Medications
 albuterol HFA 108 (90 BASD) mcg/ACT Inhalation oral inhaler TWO puff(s) by mouth every 4 hours as needed for Wheezing or Cough (also shortness of breath, chest tightness or chest pain). Use 15-30 minutes before physical activity
 Flovent HFA 110 MCG/ACT Inhalation oral inhaler 1 puff(s) by mouth 2 times daily.
 Allegra D 24 and Flonase

SOCIAL/ENVIRONMENTAL HISTORY:
 Emma lives with her mother, father and a dog, no smoke exposure, Emma denies vaping. Plans to play soccer in college. Has not undergone allergy evaluation/testing.

SPIROMETRY:
 Normal FVC, FEV1, FEV1/FVC ratio, FEF25-75% and flow volume loop. Normal spirometry and these results are similar to last testing.

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ASSESSMENT/PLAN:
 Moderate persistent asthma, exercise induced bronchospasm
 Gastroesophageal reflux disease
 Allergic rhinitis
 Vocal cord dysfunction

Emma is a 17-year-old with moderate persistent asthma that is currently not well controlled.

Based on severity classification, adherence to therapy and control, step up to Symbicort 160/4.5 mcg MDI 2 puffs BID.

Emma will take rescue medication: albuterol before activity and PRN as per asthma care plan.
 MDIs to be administered via a chamber and a new one was dispensed today.

Start famotidine 40 mg PO once daily.

Continue current Allegra D 24 one tablet PO once daily and Flonase BID.

Referred to CHOP ENT for an evaluation of her upper airway (recurrent pharyngitis) and vocal cord dysfunction.
 Also referred to CHOP cardiology.

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ASSESSMENT/PLAN:
As the asthma educator, what do we need to know and do for this patient?

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ASSESSMENT/PLAN:

As the asthma educator, what do we need to know and do for this patient?

EDUCATION:
 Reviewed/discussed the rationale for medication changes/treatment plan including referrals to ENT and cardiology.
 Reviewed and discussed the importance of and rationale for always using a chamber to administer MDIs.
 Patient/family taught/reviewed proper MDI chamber/mouthpiece administration technique by demonstration and given written instructions that include how to properly clean the chamber.
 Provided anticipatory guidance/counseling about all types of smoking: cigarettes, cigars, e-cigarettes, hookah, marijuana and the health risks from them especially for patients with asthma.

Patient Instructions
 Step Flovent
 Start Symbicort twice a day
 Use albuterol before soccer/work out and as needed-follow the asthma care plan
 Continue Allegra and Flonase
 Start Pepcid (famotidine) once a day
 Always use a chamber to take inhalers

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Three month follow up

Emma says that she is doing better. She reports both increased tolerance and endurance with physical activity. She also notes a positive difference when she premedicates before sports with an albuterol MDI administered via a chamber. Emma now can play soccer for 25-30 minutes and if she needs break for dyspnea, it resolves when she takes a drink of water and rests. She may also have some chest tightness when she comes off the field. Emma has had some cough that can be productive of clear to yellow-green secretions that she attributes to allergies. Emma denies wheeze and chest pain. She reports an episode of stridor due to a "panic attack" and that her mother was able to help her calm down. In the interim since our last visit Emma was seen by her PCP 11/04/21 for a sore throat/viral laryngotracheobronchitis (COVID-19 negative). She had a week of headache, fever, nasal congestion and sore throat

SOCIAL/ENVIRONMENTAL HISTORY:
 Emma lives with her mother, father and a dog, no smoke exposure, Emma denies vaping/all types of smoking. Plans to play soccer in college

SPIROMETRY:
 Normal FVC, FEV1, FEV1/FVC ratio, FEF25-75% and flow volume loop. Normal spirometry and these results are stable compared to last testing.

REFERRED but not seen by ENT or cardiology

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Three month follow up

ASSESSMENT/PLAN:
 Moderate persistent asthma, exercise induced bronchospasm
 Allergic rhinitis
 Gastroesophageal reflux disease
 Vocal cord dysfunction

PLAN:

Emma is an 18-year-old with moderate persistent asthma that has come under improved control.

Based on severity classification, adherence to therapy and control, change to SMART Symbicort 160/4.5 mcg MDI 2 puffs BID, 1-2 puffs before physical activity and 1-2 puffs Q 6 hours PRN up to 12 puffs in 24 hours maximum.

MDIs to be administered via chamber.

Continue famotidine 40 mg PO once daily, current Allegra D 24 one tablet PO once daily and Flonase BID.

Due to recurrent throat issues and possible component of VCD again referred Emma to CHOP ENT for evaluation.

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Three month follow up/As the asthma educator, what do we need to know and do for this patient?

PLAN:

EDUCATION:
Reviewed/discussed the rationale for medication changes. Reviewed the updated SMART asthma care plan and provided it to Emma in writing.

Patient Instructions

- It was nice seeing you today. Follow SMART asthma plan
- Always administer inhaler(s) with a chamber. Bring your child's chamber to every visit.
- Your child should rinse his/her mouth out with water (sip of water, swish in mouth and spit out) or brush teeth after taking steroid inhaler: Symbicort

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As the asthma educator, what do we need to know and do for this patient? Considerations to guide patient/family education

Diagnosis:
EIA: Exercise induced asthma is not a diagnosis in NIH guidelines
intermittent asthma with EIB: exercise induced bronchospasm
Mild, moderate or persistent asthma with EIB

Consider comorbid conditions overlap/complications:
Vocal cord dysfunction
Cardiac
GERD
Allergies
Mental health/anxiety/stress

Treatment:
Pre-exercise treatment
Long term control therapy with pre-exercise treatment
Proper medication administration technique/adherence

Other considerations:
Weather
Travel/change of environment
Smoke/pollution
Communication with coach, teachers, school

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As the asthma educator, what do we need to know and do for this patient?

Conclusions

Asthma Care Quick Reference Diagnosing and Managing Asthma

ASTHMA CARE FOR SPECIAL CIRCUMSTANCES

Clinical Issue	Key Clinical Activities and Action Steps
Exercise-Induced Bronchospasm	<p>Prevent EIB.*</p> <ul style="list-style-type: none"> • Physical activity should be encouraged. For most patients, EIB should not limit participation in any activity they choose. • Teach patients to take treatment before exercise. SABAs* will prevent EIB in most patients; LTRAs* cromolyn, or LABAs* also are protective. Frequent or chronic use of LABA to prevent EIB is discouraged, as it may disguise poorly controlled persistent asthma. • Consider long-term control medication. EIB often is a marker of inadequate asthma control and responds well to regular anti-inflammatory therapy. • Encourage a warm-up period or mask or scarf over the mouth for cold-induced EIB.

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