Case Discussions – Day #2

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Conflicts of Interest

Nora Barrett:	Funding: NIH, DOD
	Consulting: Biohaven, Regeneron, Uptodate
	Grant review: American Lung Association and NIH
Sachin Baxi:	None

Conflicts of Interest

Elliot Israel:

Asthma Education Prevention Program (NAEPP) Coordinating Committee	2017-
AB Science	Consultant
Amgen	Consultant
AstraZeneca	Consultant & Clinical Research Support
Avillion	Consultant & Clinical Research Support
Circassia Pharmaceuticals	Clinical Research Support
Cowen	Consultant
GlaxoSmithKline	Consultant
Gossamer Bio	Clinical Research Support
Merck	Consultant
Novartis	Consultant
Pneuma Respiratory	Consultant
PPS Health	Consultant
Regeneron Pharmaceuticals	Consultant
Sanofi	Consultant
TEVA	Consultant & Clinical Research

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Case #1

A 14-year-old boy presents with severe asthma.

Brief history:

Former full-term infant, first wheezing at 12 months, asthma diagnosed at 2 years. He had an ICU admission for asthma at 3 years old. He presented to our severe asthma program at 12 years of age with poorly controlled asthma.

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Case #1

Symptoms: Shortness of breath, coughing, wheezing. Albuterol 3-4x/week due to wheezing. Albuterol before basketball but still short of breath with competition.

Triggers: URI, exercise, cold weather, animals.

Risk: 4-5 prednisone courses/year, missed 22 days of school.

Comorbid Conditions: Severe needle phobia, atopic dermatitis, allergic rhinitis, secondary adrenal insufficiency, growth velocity decreased: 8/19/20 – 54%ile, 12/15/21 – 28%ile, 7/20/22 – 25%ile.

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Case #1

Meds: fluticasone/salmeterol 230mcg -21mcg 2p bid, montelukast 5mg and tiotropium.

Evaluation: notable for positive allergy skin testing to dust mites, dog, and cat. Spirometry: FEV_1 70-85%, FEV_1/FVC 0.7-0.75, FeNO 64, ACT of 10-14.

Labs: Peripheral eosinophil count 890, 13% Eos, IgE 500, AM cortisol 2.14 mcg/dL (normal is >5mcg/dL).

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He was started on benralizumab.

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Case #1

Next 12 months:

- Tolerated injections well, preferred q8 weeks
- Symptoms: 1x oral steroid course, improved exercise tolerance
- Labs: 0% eos, normal DHEAS

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Case #1

Lung function: Spirometry showed an FEV_1 of 116%, FEV_1/FVC ratio of 89, FeNO 109, ACT 23

Growth: 35%ile

Adherence: ? → changed ICS/LABA to budesonide-formoterol 160mcg-4.5mcg 1p bid / SMART therapy

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Case #1

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Case #2

A 26-year-old personal trainer is referred for help with management of her asthma.

She reports the onset of asthma in early childhood. She recalls having been given nebulizer treatments each day after school. In middle school and high school, she took a steroid inhaler that seemed to work well, and she was able to run track and play tennis on school sports teams.

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Case #2

In the last 2-3 years, however, she feels that her asthma has been "out of control." Despite taking the highest dose of inhaled fluticasone propionate 2 puffs twice daily, she has had frequent flare-ups requiring urgent care visits and short courses of prednisone; in the last year she has had exacerbations almost every other month.

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Case #2

She is now on fluticasone/salmeterol combination 500/50 one inhalation twice daily and montelukast 10 mg once daily; she avoids using her albuterol inhaler as much as possible because it makes her jittery.

Her asthma (cough, wheeze, and shortness of breath) interferes at times with her work and disrupts her sleep (which she finds particularly frustrating, now that her 2-year-old son is finally sleeping through the night!).

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Case #2

She has seasonal allergic rhinitis (spring through the fall), for which she takes an antihistamine and nasal steroid spray daily. She has only a remote history of sinus infections, no intolerance of aspirin or other non-steroidal anti-inflammatory drugs, and a normal sense of smell. For her work she rents gym space, which she finds somewhat dusty.

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Case #2

At home she has a dog, which she has had for the last 4 years. She describes it as hypo-allergenic (a bichon frise) and only notes allergic reactions if it licks her skin or scratches her. She is allergic to cats but is very rarely around cats in other people's homes. She is frustrated by an intermittently hoarse voice, which she attributes to one of her inhalers.

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Case #2

On examination, she has mildly edematous nasal mucosa with clear watery nasal discharge; her chest is clear to percussion and auscultation. The remainder of her examination is normal.

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Case #2

Laboratory data include the following:

Spirometry: mild airflow obstruction with an FEV_1 = 77%.

Exhaled nitric oxide is suppressed at 18 ppb.

Complete blood count reveals peripheral blood eosinophilia with 600 eosinophils/uL

Total serum immunoglobulin E (IgE) = 325 IU/mL

Allergy skin tests (prick tests) positive to cats, dogs, dust mites, ragweed, birch tree, and alternaria.

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Case #2

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Case #3

A 24-year-old nurse is referred by her obstetrician for management of her asthma.

As a young child she had exercise-induced symptoms for which she was given a quick-acting bronchodilator to use as needed. At age 13 she had a respiratory tract infection that caused a severe asthmatic attack. She does not recall the details but knows that she was treated in the intensive care unit and almost needed intubation and mechanical ventilation but was not intubated.

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Case #3

At that time, she was hospitalized for 10 days and decided then and there that she wanted to become a nurse. After this hospitalization she was maintained on a combination inhaled steroid/long-acting bronchodilator inhaler and had few symptoms and no major asthma attacks until nursing school. Her asthma worsened then, requiring repeated courses of oral corticosteroids until 4 years ago, when she was begun on monthly injections of mepolizumab.

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Case #3

Since then, she feels that her asthma has been well controlled. Her asthma triggers include exercise in cold weather, exposure to cats or dogs (she has no pets at home but works as a visiting nurse with occasional exposure to animals in patients' homes), and "head colds" that always seem to "settle in my chest." Her last course of oral corticosteroids was last fall in the context of a respiratory infection.

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Case #3

She is now 12 weeks pregnant with her first pregnancy and feels well. She notes some tightness in her chest when walking fast outdoors. She might use her albuterol inhaler to bring relief from this sensation, sometimes remembering to use it before exertion, and she infrequently wakes at night to use it (which is new since her pregnancy). She has continued her budesonide/formoterol inhaler twice daily, sometimes skipping doses if she feels well.

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Case #3

Her other medications are pre-natal vitamins, as-needed sumatriptan for migraine headaches, and propranolol as needed for stress-related anxiety, such as public speaking. She does not monitor her peak flow at home, feeling that she can tell how her asthma is doing based on how she feels.

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Case #3

On examination, she appears well. She has mild eczema on her hands. Her chest is clear to percussion and auscultation.

Her peak flow measured in the office is 320 L/min.

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Case #3

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