When asthma is hard to treat
Disclosures

• None
Patient History

• 53 year old male life hx of asthma
• He also has GERD treated by GI doc and recurrent sinus
• Med Symbicort 160 ug, theophylline 200 to 400 mg daily, singulair no difference
• Skin test pos. grass, cedar tree and tumbleweeds hx IT no benefit
continued

• IgE level 278
• Pulmonary lung function FEV and FVC 52% of predicted
• Asthma becoming increasingly severe over the summer required 20mg to 40 mg a day to control
• What to do? How to manage?
Persistent Asthma: Daily Medication
Consult with asthma specialist if step 4 care or higher is required.
Consider consultation at step 3.

Step 1
Preferred: SABA PRN
Alternative: Cromolyn, LTRA, Nedocromil, or Theophylline

Step 2
Preferred: Low-dose ICS + LABA OR Medium-dose ICS
Alternative: Low-dose ICS + either LTRA, Theophylline, or Zileuton

Step 3
Preferred: Medium-dose ICS + LABA
Alternative: Medium-dose ICS + either LTRA, Theophylline, or Zileuton

Step 4
Preferred: High-dose ICS + LABA
AND Consider Omalizumab for patients who have allergies

Step 5
Preferred: High-dose ICS + LABA + oral corticosteroid
AND Consider Omalizumab for patients who have allergies

Step 6
Step up if needed
(first, check adherence, environmental control, and comorbid conditions)
Assess control
Step down if possible
(and asthma is well controlled at least 3 months)

Each step: Patient education, environmental control, and management of comorbidities.

Step 2-4: Consider subcutaneous allergen immunotherapy for patients who have allergic asthma (see notes).

Quick-Relief Medication for All Patients
- SABA as needed for symptoms. Intensity of treatment depends on severity of symptoms: up to 3 treatments at 20-minute intervals as needed. Short course of oral systemic corticosteroids may be needed.
- Use of SABA >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and the need to step up treatment.
Reason for poor compliance

- Does not care
- Does not understand
- Fear of side effects
- Medicines too expensive
- Believe that other systems of health care are superior
Sinus Infection
Sinusitis, polyps, and asthma

• One study 201 patients with asthma & CT scans
• 136 were abnormal 68%
• 18 with Bone involvement
• Associated with eosinophilia

• Mayo Clinical Proceeding, Meth et al, June 2008 83
ASA sensitive Asthma

- Sensitivity to all of the NSAID Cox 2 inhibitors have less crossreaction
- Nasal polyps and usually severe sinus disease
- Asthma sometimes severe
- Usually require some type of cortisosteroids for treatment
- ASA desensitization helps with nasal polyps
Does it help to treat sinus or nasal polyps

- Many patients with polyps feel yes
- Some uncontrolled studies showed that treatment of sinus infection or sinus surgery have been beneficial
- One study showed that addition of nasal steroid in ER decreases the return rate
GERD and ASTHMA

- 402 poorly controlled with asthma no or minor GERD symptoms
- Esomeprozol 40mg vs. Placebo
- 40% had a positive PH probe
- No difference in adverse events, urgent care visits, rescue mediation and asthma evaluation

No difference in secondary end points

NEJM, Mastrononde et al 2009, April 360(15) Pp1487- 1499
ASTHMA and GERD

- In individuals with asthma and symptomatic GERD
- Lansoprazol 30 mg BID
- Daily symptoms no change
- Fewer exacerbations and this result was more pronounced in the more severe asthma

Chest 2005, Sept., 28(3)
ASTHMA, GERD, and NOC

• Looked at asthma and GERD and then a third group with nighttime symptoms
• 770 patients, esomeprozol 40mg BID
• This study showed improvement in pulmonary function PEF in treated
• Most Significant in Patient with GERD/NOC
• More pronounced in severe patient with LABA
Anti-cholinergics in asthma

• A study looking add on therapy tiotropium 18ug salmetrol 50 ug BID or doubling inhaled cortisone 160 ug dose
• Similar design to the studies showing benefit of adding LABA
• Results were looking at PEF and FEV1, QOL and asthma scores
Anti-cholinergics in Asthma

- Adding tiotritium was more effective than doubling the dose of Inhaled cortisone
- Reported no worse than adding LABA

Anti IgE
Indications for anti IgE

- Indications: severe uncontrolled asthma
- Usually steroid dependent asthma
- Allergic asthma: positive allergy testing
- IgE level 30 to 700
- Dosing is dependent of weight and IgE level
- Cost $4000 to $20,000 per year
Omalizumab mechanism of action

- Decrease serum IgE
- Decreases expression of Fc epsilon RI receptors (mast cells, basophils)
- Decreases FeNO
- Decreases eosinophils
- Decreases B lymphocytes and IL13
- Decreases airway inflammation
- Decreases antigen induced mediators release

Middleton’s Allergy vol. 2 page 1683
Summary of Anti IgE effects on asthma

- Decreased exacerbations
- Decreased inhaled corticosteroids doses
- Decreased asthma symptoms
- Decreased rescue medications
- Increased QOL
- Decreased ER visits
- Decreased hospitalization
- Middleton’s Allergy 7th edition p. 1684
under attack from US aircraft. The two flakvierling appears to be pointed in under attack by more than one aircraft.
Effectiveness of anti-IgE

- Study as add on therapy 419 mod to severe
- 44% reduction in ER visits
- Improved QOL
- Improved asthma symptom scores

- Middleton’s Allergy 7th edition p 1685
Effectiveness of Anti IgE

- Pooled of study 4308 total patients
- 2511 on Anti IgE
- 38% fewer exacerbations
- 47% fewer ER room visits

Middleton’s Allergy 7th edition, p 1683
Anti IgE side effects

- Local reactions
- Concerns about cancer
- Concerns about heart disease
- Delayed anaphylaxis 0.1% two to four hours after the injection any injections
- Personal experience on case of vasculitis
- A drug to used by specialist my opinion
Pet danders

- 15 year old female
- Poorly controlled asthma
- On all of the medications Advair 250 ug,
  - singulair
- Brother worked with horses

Rx was Immunotherapy to horse dander
Facts about pet dander

- Estimates 37% of homes have dogs
- And 32% of homes have cats
- 4% had birds
- % of indoor pets is increasing
- One study showed that neither the length of cats hair nor indoor time effected levels
- Cats most common pos. 72% (dog 36%)
- ALLER,&ASTHMA PROCEEDING sept 2010,319(5)
- p, 382
Pet allergy

- Animal dander small 2.5 to 10 um more likely to cause asthma symptoms
- Passively transferred on clothing, shoes, and even women’s hair
- Therefore dander is found in more than 90% of home and public areas
Pet allergy continued

- 46% of homes with or without cat have 2 ug/ml of Fel d1.
- Middle schools 1.5 to 3.0 ug of Can f1 0.5 to 1.1 ug of Fel d1
Daycare centers have >8 ug of Fel d1 in sandboxes

Allergy and asthma Proceeding Nov/Dec 2009 P 574
Treatment of pet allergies

- What can be avoided should be avoided
- More effective
- Safer
- Less expensive
- Best to remove pet from home
- Garage may be the same
- Reduce dander levels up to 10 times
Pet Allergy Treatment

- Confining cat to an uncarpeted room (other than bedroom) with a Hepa filter may dissemination of dander 90%
- Carpeted floors capture 100 times more cat allergen than polished floor
- Upholstered furniture and curtains contain equal of cat dander
- Allergy & Asthma Proceedings vol30, nov dec 2009 p576
Pet allergy avoid

• Require passive carriers of animal dander to change clothes
• Wear face mask before exposure
• Select a female pet or require neutering
• Wash hands and face after exposure (never studied)

• IBID p. 577-578
Pet avoidance

• Limit or remove fabric upholstered furniture
• Upholstered furniture and curtains contain more dander than floor in schools
• Wash bedding/curtain well
  • 60 degree with one rinse
  • lower temperature with two rinses

• Ibid p. 577
Treatments that are not proven beneficial

- Portable HEPA not helpful
- Buying a non allergic type of pet
- Short hair vs. long hair or short hair vs. long hair
- Increasing ventilation 6 times per hour
- Washing special shampoos, sprays to reduce shedding and steam cleaning not beneficial
- Ibid p. 577
Leucotriene antagonist for nasal polyps

- Combination of Montelukast and fluticasone 200 ug
- Significant reduction in polyps size at 6 and 12 months of age
- Fluticasone plus Montelukast for effective in reducing polyps in adult onset asthma

Nonaka m etal. J. Nippon Med School, Feb 2010 vol 77