Cough Management: Best Practices 2017

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Learner Objectives

• After this presentation you should:
  – 1) Understand the most common causes of chronic cough
  – 2) Have a usable work-up algorithm for cough patients seen in the ENT clinic
  – 3) Be able to offer appropriate prescriptions for neurogenic chronic cough

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CHRONIC COUGH

• Chronic cough is one of the most common reasons to see a doctor
• 10% of patients seen for cough, >40% non-responsive
• Often multifactorial
• Otolaryngologist often involved after prolonged and complex treatment course
• Often complicated history

• Definition of timing:
  • Acute 0-3 weeks (URI)
  • Sub acute 3-6 weeks (bronchitis)
  • Chronic > 8 weeks

Prior guidelines written in 2006 (Irwin et al., Chest 2006: 129, 2225-2235)

New Guidelines recently published:
  • Chronic Cough due to GERD in Adults 2016
    • “No high quality studies available”
  • Treatment of Unexplained Chronic Cough 2016
    • “Data is limited”
  • Etiologies of chronic cough in pediatric cohorts (2017)
    • “Kids are different”

All discussed options here are recommendations only!!!

ACUTE COUGH

• Acute cough – mostly infectious
  • <3 weeks
  • Life threatening conditions need to be ruled out quickly
  • CHF, PE, COPD
  • Note that in H&P and physical exam, CXR is indicated for all patients with severe cough or cough > 3 weeks
  • Consideration of allergic environmental issues
  • Exacerbation of pre-existing conditions:
    • Bronchiectasis
    • Asthma
    • Upper airway cough syndrome (?)

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**SUBACUTE COUGH**

- Subacute Cough – 3–8 wks
- Mostly due to lingering effects of infectious initial cause
- Pre-existing conditions?
- If new onset, consider:
  - UACS = Sinusitis = CT?
  - Asthma
  - GERD/LPR
  - Bronchitis
- If prior infectious history likely
- Symptomatic treatment
- Prior non-infectious cough
- Treat like chronic cough
- Note Pertussis eval in this grouping

**CHRONIC COUGH**

- Chronic cough
- > 8 weeks
- Majority are non-infectious cause
- Most common timing for patient to see otolaryngologist
- In history consider:
  - Tobacco use hx
  - HTN meds – ACE/ARB
  - History of asthma, allergies
  - Infectious history/URI
  - Reflux history
  - Exposures
  - Course – worsening? Stable?

**WHAT IS THE COUGH LIKE?**

- Questions to ask:
  - “What is the cough like?”
  - Need to find the location!
    -Productive vs. Dry
    - Sound?
      - Wet vs Barking
    - Severity
      - Mildly irritating vs “worst cough in my life”
  - Where?
    - Chest vs Throat
  - Worst at night, day?
**WHAT IS THE COUGH LIKE?**

- Questions to ask:
  - What is the cough like?
  - What makes it worse?
    - Talking/Singing?
    - Odors?
    - Simple Changes?
    - Foods/Eating?
    - What makes it better?
    - Duration?
    - Associated Symptoms?
    - Hoarseness
    - Dysphagia
    - Pain
  - History of URI or chemical exposure?
  - Course?
    - Improving, Stable, Worsening, Fluctuating

**CHEST IMAGING**

- Questions to ask:
  - Have you had a CXR or CT?
    - Screening for lung cancer with low-dose computed tomography (LDCT) in adults aged 55 to 80 years who have a 30 pack-year smoking history and currently smoke or have quit within the past 15 years.
    - Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.
  - Otherwise, CXR!!!

**TOBACCO USE**

- Questions to ask:
  - Do you smoke?
    - Anyone with history of significant active tobacco use = likely cause
    - Rates of chronic cough are roughly 32% in active smokers, 5% or less in NS
    - Associated generally with productive cough
    - Cough persists and even worsens often after cessation
    - Rates of cough are elevated > 10x's out from quitting
    - STOP WORKUP → Pulmonary Referral
Questions to ask:
- Do you have a history of asthma?
- Have you seen a pulmonologist?
- Have you had pulmonary function testing done?
  - WHY NOT?
  - Seriously, WHY NOT!?!?
  - >80% of chronic cough issues are pulmonary
  - I insist on pulmonary referral for nearly all of my chronic cough patients for eval and PFT’s
- Steroid inhaler trial!

PULMONARY TESTING

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Questions to ask:
- Do you have HTN?
- Are you on an ACE Inhibitor or ARB?
  - Significant cause of chronic cough...

HYPERTENSION MEDS

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ACE INHIBITORS = BAD
- PDR lists rates of cough 1-2%
- Not confirmed by clinical studies
- Meta review 125 studies combining 198,130 pts!!!
- Pooled rate of cough w/ ACE = 11.58%
- ARB studies show that cough rates are lower, but there is still an elevated rate of cough w/ this drug
- 86% of patients with ARB cough have had prior ACE cough
- Answer: STOP THE ACE/ARB
- Also consider this for pts with throat clearing and irritation
- Multiple other HTN agents avail – talk to your PMD!

HYPERTENSION MEDS

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SCREENING OUT NON-ENT

OKAY...

- PT HAS HAD A NEG CXR/CT
- PT HAS HAD A PULMONARY EVAL WITH PFTs THAT ARE WNL
- And...
- PT HAS ANSWERED NO TO:
  - Do you smoke?
  - Are you on an ACE
- NOW... we go down the chronic cough workup treatment program

CHRONIC COUGH EXAM

- Physical exam pearls:
  - Are they coughing? How much? What does it sound like?
  - Tobacco odor?
  - Clubbing?
  - Stridor?
  - Voice changes?
  - Wheezing? Auscultation (don’t often do)
  - Videostroboscopy can be incredibly useful
    - Cord paresis
    - Laryngeal edema/reflux/granuloma
    - Atrophy/glottic incompetence
    - Chasing wave asymmetry/petiole shift
    - Nasal exam – polyps, secretions, pus
  - Physical exam often helps point which way you should start to direct questioning!

REFLUX AND COUGH

- Questions to ask:
  - Do you have a history of reflux?
  - Have you tried therapy? What?
  - Majority of patients with chronic cough already on PPI without benefit
  - Cough may CAUSE reflux
  - Algorithm calls for 24hr pH impedance testing or barium esophagram
  - At MCW we offer pH impedance testing as option vs PPI
  - Often caused by lower esophageal stim, not LPR
**Reflux and Cough**

- Reflux testing options
  - Empiric trial of PPI
    - Best responders have HB
    - BID 30min a meal
    - Can add HS Zantac
  - Low incidence of benefit
    - REASSESS
  - Risks of long term PPI use
  - 2016 Chest Review Recs
    - Weight loss, HOB elevation
    - Use PPI only for HB sxs
    - If fail PPI trial of 6 mos BID treatment, rec objective reflux testing
  - Recommendation for anti-reflux or bariatric surgery for pts without esophageal motor disorders

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**Reflux and Cough**

- Reflux testing options
  - Barium esophagram (poor sensitivity)
  - Restech-pH (I don't use)
  - Dual pH-MII
    - Current gold standard for reflux testing
      - Well tolerated
      - Can detect acid and non-acid reflux w/ symptom index
      - Good correlation with pepsin biopsy and sputum testing
      - Can combine with manometry
      - Can do in clinic without EGD
    - – M C W Laryngology
      - Consider prior to PPI Rx

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**Upper Airway Cough Syndrome (UACS)**

- Cough d/t allergy or chronic sinusitis
  - Also workhorses allergen exposure
  - Sensitization of cough reflex:
    - Increased triggers by mucus/irritants
  - Lowered threshold due to inflammation
  - Question history of atopy and/or sinusitis
  - Treatment options:
    - Sinus CT/surgery
    - Referral to allergist for testing
    - Antihistamines, leukotriene inhibitors
    - Nasal steroids, irrigations
    - Steroid burst can be diagnostic
  - In my experience, not a common cause of chronic cough in adults
  - May be more of a cause in children
**NEUROSENSORY COUGH**

- Neurosensory Cough (PVVN)
  - Suspected injury to internal branch of SLN from virus, chemical exposure, injury – altered sensation
  - Diagnosis of exclusion, no useful diagnostic testing modalities
  - Dry irritating cough
  - Triggers: odors, temp, foods, laughing, talking
  - Multiple treatment options
    - Amitriptyline 10-50mg QHS
    - Gabapentin taper (CHEST recs) 300mg QHS x 1 wk then 300mg TID x 1 wk then 300mg QHS
    - Nortriptyline 75mg
    - Pregabalin 75mg 2-3x/day
    - Tramadol 50mg BID-TID

**SPEECH THERAPY**

- Behavioral cough
  - Chronic behavioral tic or ongoing inflammation due to cough
  - “Cough-begets-cough”
  - Referral to speech therapy for chronic cough retraining therapy
  - Proven effectiveness in trials
  - Strongly recommended in 2016 CHEST recommendations for chronic cough
  - Often useful in combination with medical treatment to hasten resolution of cough
  - No risk – “just time and your co-pay”

**PEDIATRIC CHRONIC COUGH**

- Different Causes in Kids (Level II)
  - Asthma, protracted bacterial bronchitis, and natural resolution more common
  - GERD rarely is cause
  - Idiopathic/neurosensory not seen
  - Age and clinical settings more important (Level III)
  - Tuberculosis common in indigent areas
  - Reflux and aspiration more common in younger kids
  - Children with chronic cough and suspected OSA should be treated according to sleep guidelines
  - Recommend using validated cough outcome measures for studies
Pertussis is Amongst Us!

- Bordetella pertussis infection:
  - Early URI/Cattarhal stage
  - Severe paroxysmal phase 2-4 mos
  - Convalescent phase 3-?? mos

- Current immunizations not as effective
  - DTaP 81%
  - Waning immunity with time
  - More virulent B. pertussis strains

- Lack of herd immunity in some areas

- Acute testing: Cx, PCR test
  - Not useful if already Rx with ABX
  - NP test = 95% accuracy mean >90%
  - Specific for recent infection
  - Antibiotics therapy and sleep aids
  - Hold off on aggressive interventions

- Steroids, bronch, CT scans


Chronic Cough Best Practice

- Aka Dr. Bock's Chronic Cough Care Pathway™
  - Rule out patients that don't need to see you:
    - > 8 wks coughing, non-smoker, no ACE, Neg CXR, neg pulmonary evaluation, neg PFT's
  - HISTORY and physical exam (w/CXR, strob)
  - Determine type of cough
    - Wet/lung vs dry/barky/larynx
  - Consider LPR/rhino, Neurogenic Cough, Behavioral, UACS/sinus disease
  - Treatment based on likely cause
    - Multi-ph testing vs empiric PPI
    - Neurosensory cough treatment
    - Referral to pulmonary for further testing/CT
    - Speech pathology referral
    - Allergy referral/sinus/meds

- RE-EVALUATE FOR RESPONSE!!!
Summary

• Do
  – Get a Chest X-Ray or Chest CT
  – Obtain complete PFT’s and spirometry
  – Screen for sinus disease
  – Consider objective reflux testing, and realize long-term risks of PPI use
  – Try meds for neurogenic chronic cough if all else fails

• Do not:
  – Continue significant workup if the patient is actively smoking (past chest CT/pulmonary referral)
  – Forget to ask about ACE inhibitors
  – Prescribe open ended BID PPI trials – always schedule a f/u appointment to assess response