Chronic Obstructive Pulmonary Disorder (COPD): Vital Inspiration

Clare Hawkins, MD, MSC, FAAFP

ACTIVITY DISCLAIMER

The material presented here is being made available by the American Academy of Family Physicians for educational purposes only. Please note that medical information is constantly changing; the information contained in this activity was accurate at the time of publication. This material is not intended to represent the only, nor necessarily best, methods or procedures appropriate for the medical situations discussed. Rather, it is intended to present an approach, view, statement, or opinion of the faculty, which may be helpful to others who face similar situations.

The AAFP disclaims any and all liability for injury or other damages resulting to any individual using this material and for all claims that might arise out of the use of the techniques demonstrated therein by such individuals, whether these claims shall be asserted by a physician or any other person. Physicians may care to check specific details such as drug doses and contraindications, etc., in standard sources prior to clinical application. This material might contain recommendations/guidelines developed by other organizations. Please note that although these guidelines might be included, this does not necessarily imply the endorsement by the AAFP.
DISCLOSURE

It is the policy of the AAFP that all individuals in a position to control content disclose any relationships with commercial interests upon nomination/invitation of participation. Disclosure documents are reviewed for potential conflict of interest (COI), and if identified, conflicts are resolved prior to confirmation of participation. Only those participants who had no conflict of interest or who agreed to an identified resolution process prior to their participation were involved in this CME activity.

All individuals in a position to control content for this session have indicated they have no relevant financial relationships to disclose.

The content of my material/presentation in this CME activity will not include discussion of unapproved or investigational uses of products or devices.

Clare Hawkins, MD, MSC, FAAFP

Regional Medical Officer, Aspire Health in Texas

Dr. Hawkins splits his time between practicing family medicine in private practice in Houston, Texas, and managing a palliative care home-visiting service across the United States for Aspire Health. He also manages Renaissance Physicians, a large independent physician association (IPA). He is a recent past president of the Texas Academy of Family Physicians, and he was a recent member of the AAFP’s Commission on Health of the Public and Science and chair of the commission’s Subcommittee on Clinical Practice Guidelines. With 30 years of experience as a family medicine educator and more than 15 years serving as faculty for the AAFP, Dr. Hawkins has presented on a variety of medical topics.
Learning Objectives

1. Evaluate patients who are current or former smokers, and those who develop frequent viral infections, for symptoms that may indicate COPD or related conditions.

2. Interpret and validate results in symptomatic patients.

3. Prepare treatment plans that include a combination approach to therapy for patients who have COPD.

4. Develop written action plans for self-management of COPD exacerbations, with emphasis on the importance of quitting smoking and receiving annual vaccinations for influenza and pneumonia.

Audience Engagement System

Step 1

Step 2

Step 3
Epidemiology of COPD

- Third leading cause of death in the US\(^1\)
- 15.2% of adults had a diagnosis of COPD in 2010\(^2\)
- 14% of adults 14-70 had COPD in 2013\(^3\)
- $36 billion dollars annually in 2010, and costs are expected to rise to $49 billion for medical costs alone by 2020\(^4\)
- Worldwide, an estimated 74 million deaths were caused by COPD in 2015\(^5\)

\(^1\) CDC 2016, \(^2\) Adeloye et al 2015, Tilert et al 2013 \(^3\) Ford et al, 2015, \(^5\) WHO Fact sheet 2016

COPD Phenotypes

- Overlapping
- Some COPD without classic features
Testing for COPD

• Physical Exam*
• Office Spirometry
• Other Pulmonary Function Testing
• Chest Xray & CT
• ECG

*Hilleman 1995

Diagnosis

• Spirometry as the mainstay of diagnosis
• Simple, inexpensive, but sometimes confusing
• Spirometry classification of COPD patients by GOLD COPD has utility but does not easily explain illness trajectory
• Health Status Measures assist (CAT and MRC dyspnea Scale)
Three Numbers

- **FVC**: Forced Vital Capacity
- **FEV1**: Amount breathed out in 1 second
- **FEV1/FVC**: How much of your lung’s air can be exhaled in the first second
  - Measure of caliber or function of airway
  - NOT A COMPARISON TO REFERENCE VALUES
- More accurate than Peak Flow

Lung Volumes

(ERV + RV = Functional Residual Capacity)

- Inspiratory Capacity
- Tidal Volume
- Expiratory Reserve Volume
- Residual Volume
Dynamic Hyperinflation

- **Vital Capacity**
  - **Inspiratory Capacity**
  - **Tidal Volume**
  - **Expiratory Reserve Volume**
  - **Residual Volume**

### Severity of obstruction (GOLD)

<table>
<thead>
<tr>
<th>FEV1</th>
<th>% of predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>&gt;80</td>
</tr>
<tr>
<td>Moderate</td>
<td>50 to 79</td>
</tr>
<tr>
<td>Severe</td>
<td>30 to 49</td>
</tr>
<tr>
<td>Very severe</td>
<td>&lt;30 *</td>
</tr>
</tbody>
</table>

### Severity of restriction

<table>
<thead>
<tr>
<th>FVC</th>
<th>% of predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>&gt;65 to 80</td>
</tr>
<tr>
<td>Moderate</td>
<td>&gt;50 to 64</td>
</tr>
<tr>
<td>Severe</td>
<td>&lt;50</td>
</tr>
</tbody>
</table>
FEV 1 Thresholds (GOLD)

- Grade 1: Mild             FEV1 > 80%
- Grade 2: Moderate          50% < FEV1 < 80%
- Grade 3: Severe            30% < FEV1 < 50%
- Grade 4: Very Severe       FEV1 < 30%

- Compared with predicted values in patients with post-bronchodilator FEV1/FVC < 70

Caveat

- FEV1/FVC 70
  - Overestimates COPD diagnosis in Elderly
  - Underestimates COPD diagnosis in those under age 45
Normal Flow Volume Curve (Expiratory)

Flow (L/sec) vs. Volume (L)

- PEF (Peak Expiratory Flow)
- FEV ( Forced Expiratory Volume)

Normal, Obstructed, & Restrictive Curves

Flow (L/sec) vs. Volume (L)

- Normal
- Obstruction
- Restriction
Poll Question 1

The most common cause of an Obstructive Pattern is:

A. Pleural Effusion
B. Pulmonary Fibrosis
C. COPD and Asthma
D. Pulmonary Embolus

Inspiratory Volume Loop

Expiratory

Flattened Inspiratory Loop Indicating possible Extrathoracic Obstruction
Common Obstructive Disorders

- **Diffuse Airway Disease**
  - Asthma
  - COPD
  - Bronchiectasis
  - Cystic Fibrosis

- **Upper Airway Obstruction**
  - Foreign Body
  - Neoplasm
  - Tracheal Stenosis
  - Tracheomalaca
  - Vocal Cord Paralysis
Diagnostic Flow Diagram, Restriction

Is FEV₁/FVC Ratio Low? (<70%)

No

Is FVC Low? (<80% predicted)

Yes

Restrictive Defect

Further Testing with Full PFT’s and consider referral

No

Normal Spirometry

Common Restrictive Disorders

Parenchymal
- Interstitial Lung Diseases
  - Fibrosis
  - Granulomatosis (TB)
  - Pneumoconiosis
  - Pneumonitis (lupus)
- Loss of Functioning Tissue
  - Atelectasis
  - Large Neoplasm
  - Resection

Pleural
- Effusion
- Fibrosis

Chest Wall
- Kyphoscoliosis
- Neuromuscular Disease
- Trauma

Extrathoracic
- Abdominal Distension
- Obesity
## Coding and Reimbursement

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>ICD-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td>R05</td>
</tr>
<tr>
<td>Simple chronic bronchitis</td>
<td>J41.0</td>
</tr>
<tr>
<td>Mucopurulent chronic bronchitis without exacerbation</td>
<td>J44.9</td>
</tr>
<tr>
<td>Acute bronchitis</td>
<td>J20.9</td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease w exacerbation</td>
<td>J44.1</td>
</tr>
<tr>
<td>Shortness of breath/ dyspnea</td>
<td>R06.00</td>
</tr>
<tr>
<td>Pulmonary Fibrosis</td>
<td>J84.10</td>
</tr>
<tr>
<td>Asthma</td>
<td>J45.909</td>
</tr>
</tbody>
</table>

### Coding and Reimbursement

<table>
<thead>
<tr>
<th>Procedure</th>
<th>CPT Code</th>
<th>Reimbursement*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single spirometry</td>
<td>94010</td>
<td>$32.82</td>
</tr>
<tr>
<td>Pre-post spirometry</td>
<td>94060</td>
<td>$57.71</td>
</tr>
<tr>
<td>Pulmonary stress test simple</td>
<td>94620</td>
<td>$71.77</td>
</tr>
<tr>
<td>Medication administration bronchodilator supply separate</td>
<td>94640</td>
<td>$13.34</td>
</tr>
<tr>
<td>Demonstration / instruction</td>
<td>94664</td>
<td>$14.79</td>
</tr>
<tr>
<td>Smoking Cessation &lt;8x/ yr</td>
<td>99406</td>
<td>$12.98</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office spirometer</td>
<td>$1,500 – 2,500</td>
</tr>
</tbody>
</table>

Reimbursements based on Medicare payments 2009  Trailblazer Spirometry cost estimated from several vendors
COPD Assessment Test (CAT)

- **CAT**: An 8-item measure of health status impairment in COPD
- **CCQ**: Clinical COPD Questionnaire (CCQ):
  - Self-administered questionnaire developed to measure clinical control in patients with COPD ([http://www.ccq.nl](http://www.ccq.nl))
- **mMRC dyspnea**: Breathlessness Measurement using the Modified British Medical Research Council:
  - relates well to other measures of health status and predicts future mortality risk

http://catestonline.org

---

**CAT (COPD Assessment Test)**

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I never cough</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I cough all the time</td>
</tr>
<tr>
<td>I have no phlegm in my chest at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My chest is full of phlegm</td>
</tr>
<tr>
<td>My chest does not feel tight at all</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>My chest feels very tight</td>
</tr>
<tr>
<td>When I walk up a hill or one flight of stairs I am not breathless</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>When I walk up a hill or one flight of stairs I am very breathless</td>
</tr>
<tr>
<td>I am not limited doing any activities at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I am very limited doing activities at home</td>
</tr>
<tr>
<td>I am confident leaving my home despite my lung condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I am not at all confident leaving my home because of my lung condition</td>
</tr>
<tr>
<td>I sleep soundly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I don't sleep soundly because of my lung condition</td>
</tr>
<tr>
<td>I have losts of energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I have no energy at all</td>
</tr>
<tr>
<td>CAT score</td>
<td>Impact level</td>
<td>Possible management considerations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------</td>
<td>--------------</td>
<td>------------------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;10</td>
<td>Low</td>
<td>• Smoking Cessation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Annual influenza vaccination</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reduce exposure to exacerbation risk factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Therapy as warranted by further clinical assessment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10–20</td>
<td>Medium</td>
<td>• Reviewing maintenance therapy – is it optimal?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Referral for pulmonary rehabilitation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Ensuring best approaches to minimizing and managing exacerbations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reviewing aggravating factors – still smoking?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21–30</td>
<td>High</td>
<td>• Referral to specialist care (if you are in general practice)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Additional pharmacological treatments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### mMRC Dyspnea Scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I only get breathless with strenuous exercise</td>
</tr>
<tr>
<td>1</td>
<td>I get short of breath when hurrying on the level or walking up a slight hill</td>
</tr>
<tr>
<td>2</td>
<td>I walk slower than people of the same age on the level because of my breathlessness, or I have to stop for breath when walking on my own pace on the level</td>
</tr>
<tr>
<td>3</td>
<td>I stop for breath after walking about 100 meters or a few minutes on the level</td>
</tr>
<tr>
<td>4</td>
<td>I am too breathless to leave the house or I am breathless when dressing or undressing</td>
</tr>
</tbody>
</table>
Prognosis Model in COPD

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Spirometric Class</th>
<th>Exac/ yr</th>
<th>CAT</th>
<th>mMRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A  Low Risk, Less Symptoms</td>
<td>Gold 1-2</td>
<td>&lt;1</td>
<td>&lt;10</td>
<td>0-1</td>
</tr>
<tr>
<td>B  Low Risk, More Symptoms</td>
<td>Gold 1-2</td>
<td>&lt;1</td>
<td>&gt;10</td>
<td>&gt;2</td>
</tr>
<tr>
<td>C  High Risk, Less Symptoms</td>
<td>Gold 3-4</td>
<td>&gt;2</td>
<td>&lt;10</td>
<td>0-1</td>
</tr>
<tr>
<td>D  High Risk, More Symptoms</td>
<td>Gold 3-4</td>
<td>&gt;2</td>
<td>&gt;10</td>
<td>&gt;2</td>
</tr>
</tbody>
</table>
Treatment Plans

• Medications for Stable COPD
• Medications for COPD Exacerbations
• Pulmonary Rehabilitation
• Oxygen Therapy
• Comorbidities
• End of Life Care

GOALS

• Relieving symptoms
• Slowing disease progression
• Enhancing exercise tolerance and functional status
• Preventing and treating complications
• Improving overall health
## Treatment Plans: Stable COPD

<table>
<thead>
<tr>
<th>Grade 1 or Stage A Mild</th>
<th>Grade 2 or Stage B Moderate</th>
<th>Grade 3 or Stage C Severe</th>
<th>Grade 4 or Stage D Very Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEV1 &gt; 80</td>
<td>FEV1 50-80</td>
<td>FEV1 30-50</td>
<td>FEV1 &lt; 30 Or &lt; 50 with Cor Pulmonale</td>
</tr>
<tr>
<td>PCV 23,13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Influenza &amp; SABA</td>
<td>LABA and/or LAMA</td>
<td>ICS for recurrent exacerbations</td>
<td>Pulmonary Rehab</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oxygen &amp; LVRS?</td>
</tr>
</tbody>
</table>

## Medication Categories

- Short Acting Beta Agonist (SABA)
- Short Acting Anticholinergic
- Long Acting Anticholinergic (LAMA)
- Long Acting Beta Agonist (LABA)
- Inhaled Corticosteroid (ICS)
Long Acting Beta Agonists LABA

- **SERAVENT** diskus, (salmeterol) DPI device
- **FORADIL** Aerolizer, (formoterol) DPI
- **BROVANA**, (arformoteral) nebulized
- **PERFORMIST**, (salmeterol) DPI
- **STRIVERDI** Respimat, (olodaterol) DPI
- **ARCAPTA** Neohaler, (indacaterol) DPI
Inhaled Corticosteroid, ICS

- **FLOVENT** MDI or Diskus (44, 110, 220 fluticasone) DPI Device
- **QVAR** MDI (40 & 80 beclomethasone) HFA MDI
- **ASMANEX** Twisthaler
- **PULMICORT** Tubohaler, (200 budesonide) (DPI Device)
- **PULMICORT** Flexhaler, (90 & 180 budesonide) DPI Device
- **PULMICORT** Respules (budesonide) Neb bid
- **AEROSPAN** Aerosol, (80 & 160 flunisolide) HFA MDI
- **ALVESCO** Aerosol, (80 & 160 ciclesonide) HFA MDI
- **ASMANEX** HFA MDI, (100 & 200 mometasone) DPI
- **ARNUITY** Ellipta, (100 & 200 fluticasone) DPI

Combo LABA & ICS

- **ADVAIR** Diskus, salmeterol & fluticasone, 250/50, (230/21 bid MDI)
- **SYMBICORT**, formoterol & budesonide) (80/45, 160/45
- **BREO** Ellipta, daily (vilanterol & fluticasone)
- **DULERA** Aerosol, (100/5 and 200/5 ii bid (formoterol & mometasone)
Anticholinergic LAMA

- **SPIRIVA** Handihaler or Respimat, tiotropium DPI
- **INCRUSE** Ellipta, (umeclidinium) DPI
- **SEEBRI** Neohaler, (glycopyrrolate) DPI

LAMA & LABA

- **ANORO** Ellipta (umeclidinium & vilanterol)
- **STIOLTO** Respimat (tiotropium & olodaterol)
- **UTIBRON** Neohaler (glycopyrrolate & indacaterol)
- **BEVESPI** Aerosphere (formoterol & glycopyrrolate)
ICS, LAMA, LABA

• **TRELIGY**: Fluticasone, Umeclidinium, vilanterol

---

Inhaler Technique

• 50% of people use their inhaler incorrectly
• Many health care providers can’t demonstrate
• Have them line up their inhalers
  – Have them contrast rescue from maintenance
  – Have them store or d/c ones from previous formulary
• Have them take them out and show you how they use them (and how often)
Medication Adherence

- Review dose counter to see if “on track”
- LABA & LAMA don’t have immediate effect that patients expect
- Outline refill rate. Is it monthly?
- Review “donut hole” and formulary issues
  - Consider using Needy Meds or Low income Subsidy (improving CMS benefit 2020)
    - www.needymeds.com

MDI vs “NEBS”

- Nebulized medications may be necessary if patient has severely limited inspiratory capacity
- Beta Agonist excess = Tremor, Anxiety, Tachycardia  (But similar to popular caffeine supplement drinks)
- “Part B” Medicare not “Part D”, so can be used in the donut hole
- Ie. BROVANA Arformoteral (nebulized LABA) ~ $800/month
ARS CASE  COPD Exacerbation

- 58 yo Asian Male
- COPD x 5 years
- Continues to smoke
- Dyspnea with minimal exertion
- Increased cough with sputum
- Increased sputum purulence
- Three similar exacerbations in past 12 months

Poll Question 2

The Best Treatment for this Exacerbation is?

A. Tapering dosage of methylprednisilone
B. Guerilla-cillin in high doses
C. Prednisone 40 mg daily x 5 days
D. Immediate hospital admission
Treatment Plan: Exacerbations

- Oral Steroids = IV steroids within 1 hour. Prednisone 40 mg daily 5 days\(^1\)
- Antibiotics if infection suspected: Based on sputum volume, purulence & dyspnea\(^2\)
- Bronchodilators
- Oxygen +/- hospitalization if desaturating\(^3\)

\(^1\) Leuppi 2013, \(^2\)Anthonisen 1987

COPD Interventions #1 E-kit

- Prednisone 40 mg daily x 5 days
  - No other doses, no medrol dose pack, ...
- Antibiotic of choice
  - Amoxicillin, Bactrim, Doxycycline, Azithromycin, Amox-Clav
- Fill Prescription
- Keep in Fridge
- Begin if; Change in Volume or Purulence
  - Change in Dyspnea
Infectious vs Non Infectious Exacerbations

- 2/3 will need antibiotics
- If no change in sputum or fever, but only dyspnea, and no evidence of pneumothorax then may just need steroid


Preventing Recurrent Exacerbations

- LABA/LAMA therapy with good technique
- Macrolide Therapy Daily or 3 x per week
  - Antibiotic resistance, hearing loss, QT interval
- PDE4 Inhibitor Roflumilast
  - diarrhea, weight loss, nausea, headache, back pain, influenza, insomnia, dizziness, decreased appetite ¹, ²

¹Chong 2013, ²Martinez 2015
Oxygen

• Evidence equivocal
  – If < 88% sat
  – > 15 hours per day for decreased mortality$^{1,2,3}$
    • 1970s 1970s and involved a total of 290 patients
    • 2016 738 patient unblinded RCT$^4$
  – For exercise desaturation?
    • Improves exercise duration, no improvement in outcomes$^5$


What is Pulmonary Rehabilitation?

• Comprehensive, interdisciplinary intervention that includes;
  – Supervised exercise training
  – Patient education
  – Behavioral therapy
  – Lifestyle management
  – Programs last from 8 to 12 weeks, with 2 to 3 weekly sessions
  – Some evidence for home-based rehab especially for maintenance
  – Is underutilized
Pulmonary Rehabilitation

- Should be prescribed for symptomatic patients with FEV1 < 50%, (SORT A)
- Could be considered for symptomatic or exercise limited patients FEV1 >50% (SORT B)
- Pulmonary rehabilitation improved quality of life dyspnea, and exercise capacity compared to standard care. (SORT A)

ACP Updates Guideline on Diagnosis and Management of Stable COPD Aug 2, 2011  www.aafp.org/fpm 2012
Roman et al. 2013

Treatment Plans: Comorbidities

- Cardiovascular Disease
- Heart Failure
- Atrial Fibrillation
- Hypertension
- Osteoporosis
- Anxiety & Depression
- Diabetes
- Impaired cognitive function
Treatment Plans: End of Life Care

- COPD as third most common cause of death
- A story without a (well defined), Beginning, Middle or End
  - Dyspnea at Rest
  - Frequent Exacerbations
  - Weight Loss
  - Recurrent Intubation/ Ventilation

Case II Roger

- Roger is a 65 yo with advanced COPD, who you have seen for many years, and treated with multiple inhalers, oxygen and a few hospitalizations for exacerbations
- He has begun to lose weight and has severe exercise restriction in spite of maximal treatment
- Can you enter a conversation about prognosis?
- How?
Case II Roger 65 COPD “D”

- Multiple inhalers, oxygen and a few hospitalizations for exacerbations
- Has begun to lose weight and has severe exercise restriction in spite of maximal treatment
- How would you bring up the topic?

Poll Question 3

How would you bring up the topic?

A. Tell him, there is nothing more medicine can do
B. Discuss how if he is intubated he will never come off the ventilator
C. Say, “I’m worried about you because I see signs that your disease is getting much worse”
Illness Trajectory: Chronic Illness
Organ Failure COPD or CHF

Introducing The Topic

• “After looking at what has been going on in the past year, I think we should talk about where this appears to be going”
• “How do you feel about continuing to go to the hospital?”
• “When this happens again do you want to go on a breathing machine?”
• “Since we know that COPD will likely take your life, have you thought what it will be like to die?”
Poll Question 4

The only thing which changes the natural history of COPD is:

A. Anti-inflammatory therapy
B. Smoking cessation
C. Combined LABA and LAMA therapy
D. Pulmonary rehabilitation

Smoking Cessation & Vaccination

• **Ask**: At every visit about smoking status
• **Advise**: the hazards and impact of smoking
• **Assess**: readiness to quit, set a quit-date
• **Assist**: prescribe
• **Arrange**: follow-up in person, telephonic or on-line

https://www.cdc.gov/tobacco/quit_smoking/cessation/nqdw/index.htm

Medical Assistance with Quitting

• Nicotine Replacement (17% patch, 12.5% lozenges/gum, 2.4% spray/inhaler)
• Varenicline (Chantix) (7.9%)
• Bupropion (Wellbutrin XL 150 / d- 300 mg / d) -2.7%

Quitting Smoking Among Adults — United States, 2000–2015 MMRW. January 6, 2017 / 65(52);1457–1464
https://www.cdc.gov/mmwr/volumes/65/wr/mm6552a1.htm?s_cid=mm6552a1_w
Varenicline (Chantix)

- Initiate regimen 1 week before quit smoking date
- Days 1-3: 0.5 mg PO daily
- Days 4-7: 0.5 mg PO BID
- Day 8 to end of treatment: 1 mg PO BID
- If quitting is successful after 12 weeks, continue another 12 weeks at 1 mg q12hr

Varenicline Effectiveness

- 6 months abstinence: Varenicline 33.2% compared with 23.4% for the nicotine patch and 24.2% for bupropion

Ebbert JD et al. Effect of Varenicline on Smoking Cessation Through Smoking Reduction: A Randomized Clinical Trial. JAMA. 2015; 313(7):687-694
Varenicline (Chantix): Slow Quit

- Reduce smoking by 50% from baseline within the first 4 weeks
- Reduce by an additional 50% over the next 4 weeks
  - 44% prefer to quit through reduction of cigarettes smoked
  - 68% would prefer medication assistance
  - Same dose ramp up 0.5 to 1 bid. But reduce smoking 50% month one, then 75% and abstinent by 3 months

Varenicline OTC?

- Research has shown safety for varenicline in patients with behavioral health disorders¹
- FDA removed the psychiatric warning from both varenicline and bupropion in 2016
- Evidence of excess Cardiovascular Risk related to varenicline refuted²
- Reduce dose if GFR < 30 0.5 mg/d increase to bid
- Still advise caution for use in patients with seizure disorder

Vaccinations

- PCV 13 “Pneumococcal Conjugate”
- PCV 23 “Pneumococcal Polysaccharide”
  - Before and second dose after 65 (five years apart)
  - One year between Conjugate and Polysaccharide
- Influenza
  - Annually

Practice Recommendations

1. Spirometry should be used to diagnose symptomatic patients (SOR A)
2. Spirometry should not be used to screen asymptomatic patients (SOR A)
3. Bronchodilators should be used for those with FEV1 60-80% predicted (SOR B)
4. Bronchodilators should be used for those with FEV1 < 60% (SOR A)
Practice Recommendations

5. Oral Steroids = IV steroids within 1 hour. Prednisone 40 mg daily 5 days\(^1\) (SOR A)

6. Macrolide daily or 3 x week can reduce exacerbation frequency for those with FEV1 < 60% (SOR B)\(^2\)

7. Pulmonary Rehabilitation should be offered for those with FEV1 < 60% predicted\(^3\)

\(^1\) Lueppi REDUCE 2013, \(^2\) GOLD 2018 \(^3\) Pradella 2015

Contact

• chawkins@gmail.com
• 713-417-6894
Questions

References

• GOLD COPD 2018
  – https://goldcopd.org/gold-reports/ accessed Aug 5, 2018
References


References

• Leuppi JD. Short-term vs Conventional Glucocorticoid Therapy in Acute Exacerbations of Chronic Obstructive Pulmonary Disease The REDUCE Randomized Clinical Trial. JAMA. 2013;309(21):2223-2231

References

• Wellington Respiratory Study. Thorax 2008;63:761-7
• ACP Updates Guideline on Diagnosis and Management of Stable COPD Aug 2, 2011 www.aafp.org/fpm 2012

References


References

References

• Ekstrom M. Clinical Usefulness of Long-Term Oxygen Therapy in Adults N Engl J Med 375;17 2016

References