Optimizing COPD Outcomes: Motivating Patients to be Engaged in Their Management

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Dennis Williams, PharmD, BCPS
Disclosures

• Sharya Vaughan Bourdet, PharmD, BCPS
  • Spouse is an employee of Theravance Biopharma and owns stock

• Dennis Williams, PharmD, BCPS, AE-C
  • Spouse is employed by GSK and owns stock
CPE Information

• Target Audience: Pharmacists
• ACPE#: 0202-0000-19-081-L01-P
• Activity Type: Application-based
Learning Objectives

At the completion of this application-based activity, participants will be able to:

• Identify key prevention and management intervention strategies for patients with chronic obstructive pulmonary disease (COPD).
• Develop an appropriate plan for the initiation, titration, monitoring, and modifying of pharmacotherapy for patients with COPD.
• Discuss effective methods to ensure smooth transition of care for patients recently hospitalized with a COPD exacerbation, including access to appropriate therapies.
Self Assessment

• Which of the following treatment strategies has been proven to reduce mortality in patients with COPD?

A. Inhaled corticosteroids
B. Long-acting muscarinic antagonists
C. Smoking cessation
D. Long-acting beta agonists
E. Respiratory muscle training
Self Assessment

• Which of the following classes of medication is the primary focus for COPD pharmacotherapy?

A. Inhaled bronchodilators
B. Inhaled corticosteroids
C. Antibiotics
D. Oral corticosteroids
E. Mucolytics
Self Assessment

• Which of the following is a common barrier to effective transition when a patient with COPD is discharged from the hospital to home?

A. Lack of effectiveness of antibiotic
B. Overuse of oxygen therapy
C. Decreased benefit of oral corticosteroids
D. Problems with access to medications
Self Assessment

• Which of the following statements is true regarding the use of inhalation therapy?

A. The most convenient device to use is a jet nebulizer
B. Overall rates of correct use of inhalers exceed 90%
C. Metered-dose inhalers are the least effective inhaler device
D. All inhaler devices require education and periodic reinforcement
Meet SM

• SM is a 63 year old Hispanic male with COPD treated with an albuterol/ipratropium inhaler (soft mist inhaler), one inhalation 4x daily PRN.

• For the past week, he has experienced increased dyspnea and a cough that is more frequent and productive of a darker, thicker sputum than usual. He reports that his inhaler only provides temporary relief.

• SM is afebrile and his lung exam reveals more crackles than usual with decreased breath sounds in the bases.

• His oxygen saturation is 93%, down from his usual 95%.
SM (Continued)

• SM has a 50 pack year smoking history. His medical history is somewhat unclear as he immigrated from Mexico eight years prior. However, he estimates that he has had COPD for 10 years.

• SM stopped smoking three years ago, but began smoking less than 1 PPD about 6 months ago.

• His only other medical diagnosis is hypertension treated with amlodipine 10 mg daily.

• His physician mentions a brief admission for observation but SM is resistant to that idea, so the plan is outpatient treatment for a COPD exacerbation.
Poll Everywhere

• Which of the following should be a component of home treatment for this exacerbation?

A. Short term use of supplemental oxygen
B. Initiate a long-acting bronchodilator
C. Start inhaled corticosteroids
D. Start a short course of oral corticosteroids
Management Strategies for COPD Exacerbations

• Intensify short-acting (rescue) bronchodilator regimen
• Systemic corticosteroids (e.g., prednisone) for 5 to 10 days
• Antibiotics for 5 to 10 days (usually)
• Supplemental oxygen if warranted
• Non-invasive ventilation (in hospital) if warranted to avoid ventilator
  • CPAP – continuous positive airway pressure ventilation
  • BiPAP – bilevel positive airway pressure ventilation

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• Two weeks later, SM returns for a follow-up visit. He states that he is feeling well and back to his baseline.

• When reviewing his recent history, he indicates that his dyspnea and cough has been getting gradually worse over the past couple months, and he has been using his albuterol/ipratropium 3 to 4 times a day even before his exacerbation.

• He is still smoking ½ to 1 pack per day but wants to try quitting again.

• Spirometry is performed and reveals an FEV1 of 60% predicted. An administered mMRC is 2 and his CAT score is 18.

FEV1=forced expiratory volume in one minute
mMRC=modified Medical Research Council; CAT=COPD Assessment Test
COPD: Airflow Limitation

- **GOLD 1:** Mild
  \[ \text{FEV}_1 \geq 80\% \text{ predicted} \]
- **GOLD 2:** Moderate
  \[ 50\% \leq \text{FEV}_1 < 80\% \text{ predicted} \]
- **GOLD 3:** Severe
  \[ 30\% \leq \text{FEV}_1 < 50\% \text{ predicted} \]
- **GOLD 4:** Very severe
  \[ \text{FEV}_1 < 30\% \text{ predicted} \]

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Symptoms: Patient Questionnaire

mMRC Dyspnea Questionnaire
• Score of <2 means less symptoms
• Score of ≥2 means more symptoms

<table>
<thead>
<tr>
<th>Severity</th>
<th>Score</th>
<th>Level of Breathlessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>0</td>
<td>Only breathlessness with strenuous exercise</td>
</tr>
<tr>
<td>Mild</td>
<td>1</td>
<td>Short of breath hurrying or walking up a slight hill</td>
</tr>
<tr>
<td>Moderate</td>
<td>2</td>
<td>Walks slower than age group or has to stop for breath when walking on the level at own pace</td>
</tr>
<tr>
<td>Severe</td>
<td>3</td>
<td>Stops for breath after walking 100 meters or a few minutes on the level</td>
</tr>
<tr>
<td>Very Severe</td>
<td>4</td>
<td>Breathless when dressing/undressing or too breathless to leave the house</td>
</tr>
</tbody>
</table>

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COPD Assessment Test (CAT)

- Evaluates 8 items
- Score 0 to 40
- Includes limitations other than breathlessness
- Score of <10 means less symptoms
- Score of ≥10 means more symptoms

http://catestonline.org
www.goldcopd.org
Patient Category: ABCD

Symptoms

<table>
<thead>
<tr>
<th>(A)</th>
<th>(B)</th>
</tr>
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<tbody>
<tr>
<td>mMRC 0-1</td>
<td>mMRC ≥ 2</td>
</tr>
<tr>
<td>CAT &lt; 10</td>
<td>CAT ≥ 10</td>
</tr>
<tr>
<td>“less symptoms”</td>
<td>“more symptoms”</td>
</tr>
</tbody>
</table>

Risk (Exacerbation history)

<table>
<thead>
<tr>
<th>(C)</th>
<th>(D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥ 2</td>
<td>≥ 1 with hospital admission</td>
</tr>
</tbody>
</table>

High risk for future exacerbation

Low risk for future exacerbation

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Severity of Disease

- Severity of airflow limitation
  - Determined by spirometry
- Nature and magnitude of symptoms
  - Determined by patient questionnaire
- Exacerbation history and future risk
  - Predicted by both symptoms and spirometry
- Co-morbid conditions
  - Difficult to objectively incorporate

Only two factors included in combined assessment for COPD Patient Category

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Assuming that SM’s recent exacerbation was the only one in the past year, which GOLD patient category best describes this patient?

A. GOLD patient category A
B. GOLD patient category B
C. GOLD patient category C
D. GOLD patient category D
Evaluating Pharmacotherapy

• When evaluating pharmacotherapy in a patient with COPD, consider the patient’s current
  • Avoidance of aggravating factors and triggers
  • Adherence
  • Ability to use inhalation device
  • Vaccine status

• Considering and addressing these factors is (always) important in the context of how well current therapy is working

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Therapy Choices

• Inhaled bronchodilators
  • Short-acting beta agonists (SABA): albuterol
  • Short-acting muscarinic antagonists (SAMA): ipratropium
  • Long-acting beta agonists (LABA)
  • Long-acting muscarinic antagonists (LAMA)

• Inhaled corticosteroids (ICS)

• Combination therapy
  • Dual bronchodilators (LAMA/LABA)
  • ICS plus bronchodilator (LABA/ICS; possibly LAMA/ICS in future)
  • Triple therapy (LAMA/LABA/ICS)

• Oral phosphodiesterase-4 inhibitor (PDE4I): roflumilast

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Pharmacotherapy for SM

- What pharmacotherapy recommendation is most appropriate for SM at this point?

A. Add LAMA (e.g., tiotropium) to his albuterol/ipratropium
B. Add LABA (e.g., salmeterol) to his albuterol/ipratropium
C. Add ICS (e.g., budesonide) to his albuterol/ipratropium
D. Add LAMA/ICS to his albuterol/ipratropium
Initial Therapy

High risk for future exacerbation
≥ 2 in last 12 months
≥ 1 with hospital admission

Low risk for future exacerbation
Zero or 1 exacerbation (no hospitalization)

(C) LAMA

(D) LAMA
Consider LAMA/LABA if high symptom score
Consider ICS/LABA if eosinophil count ≥ 300

(A) A bronchodilator
mMRC 0-1
CAT < 10
“less symptoms”

(B) LAMA or LABA
mMRC ≥ 2
CAT ≥ 10
“more symptoms”

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Long-acting Bronchodilators

• For patients with chronic symptoms and/or frequent use of short-acting bronchodilators, these agents
  • Are more effective at relieving symptoms and improving lung function
  • Are more convenient to use
  • Reduce exacerbation frequency

• No proven benefit for reducing mortality or directly changing progressive decline in lung function

• No expressed preference for one class over another (LABA vs LAMA) for Group B patients

• Consider dual therapy (LABA/LAMA) for patients needing additional symptom control or recurrent exacerbations on monotherapy

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GOLD Category B: Target Symptom Control

- **Long-acting bronchodilator**
  - Initial therapy should include long-acting bronchodilator (either LAMA or LABA)
  - LABA alone is acceptable in COPD (in contrast to asthma)

- **Evaluate effect**
  - Assess symptomatic benefit of therapy after initiation
  - Assess inhaler technique regularly
  - Assess technique & adherence before modifying therapy

- **Continue, Add, or Stop**
  - Continue therapy if beneficial or re-education needed
  - Add long-acting bronchodilator if persistent symptoms (LAMA/LABA)
  - If dual bronchodilators do not improve symptoms, consider stepping back to monotherapy (LAMA or LABA)

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• SM has expressed renewed interest in smoking cessation
• He has a 50 pack year smoking history; stopped two years ago but has recently resumed
• Previously, SM used nicotine replacement therapy but felt that it didn’t help much
• He expresses a preference for an oral therapy option
• He has a history of depression from 5 years prior
Smoking cessation is the most important intervention to slow disease progression

- Recommended for all GOLD patient categories
- Successful and persistent cessation is difficult
- Per recent trials, 45-53% of patients with COPD continue to smoke (TRIBUTE, TRILOGY, TRINITY)

[www.goldcopd.org](http://www.goldcopd.org)

Papi et al. Lancet 2018;391:1076-84
Singh et al. Lancet 2016;388:963-73
Effect of Smoking on Lung Function Decline

- Rate of lung function decline reverts to that of non-smoker once sustained cessation achieved
  - Effect seen at any age and regardless of duration of smoking
- Cannot regain lost lung function but rate of decline is slowed
- Slowing rate of lung function decline can prolong time to further symptoms or disability

Empowering the Patient

- It is never too late to stop smoking!
- Patients can be empowered to help slow the progression of their disease
- Include motivational interviewing to discuss goals and benefits
  - Benefit to self
  - Benefit to others (secondary exposure)
- Short-term vs long-term benefits
  - Short-term – immediate impact on symptom burden
  - Long-term – disease progression, frequency of exacerbations, other extra-pulmonary benefits
Tobacco Cessation

• Assess readiness
  • Ask, Advise, Assess, Assist, Arrange (5 A’s)

• Pharmacists can assess patients for readiness in various settings
  • Community pharmacy
  • Clinic
  • Before discharge from hospital

• Recommend options for therapy
  • Consider patient specific factors and preference
Three general classes of FDA-approved drugs as first-line therapy:

- Nicotine replacement therapy (NRT)
  - Nicotine gum, patch, lozenge, nasal spray, inhaler
- Psychotropics
  - Sustained-release bupropion
- Partial nicotinic receptor agonist
  - Varenicline

FDA=Food and Drug Administration
• SM’s clinician is considering an oral option for smoking cessation but is concerned about the patient’s history of depression. What is appropriate advice?

A. Both varenicline and bupropion should be avoided
B. Only varenicline is contraindicated because of depression history
C. Nicotine replacement therapy is preferred for all patients with mental health comorbidities
D. Recent evidence suggests that the risk of neuropsychiatric problems are less than previously reported
EAGLES Trial

- Tobacco cessation therapy (bupropion, varenicline, nicotine placebo) versus placebo evaluated in two patient cohorts
  - Psychiatric cohort, n=4074
  - Non-psychiatric cohort, n=3984
- Primary composite outcome of neuropsychiatric adverse effects not significantly different compared to placebo within cohort

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<thead>
<tr>
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<th>Varenicline</th>
<th>Bupropion</th>
<th>Nicotine Patch</th>
<th>Placebo</th>
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<tr>
<td>Psychiatric Cohort</td>
<td>6.5%</td>
<td>6.7%</td>
<td>5.2%</td>
<td>4.9%</td>
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<tr>
<td>Non-psychiatric Cohort</td>
<td>1.3%</td>
<td>2.2%</td>
<td>2.5%</td>
<td>2.4%</td>
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</table>

Anthenelli RM et al. Lancet 2016; 387: 2507-2520
Updated FDA Guidance

• EAGLES study results indicate that neuropyschiatric risk is not as significant as previously felt

• BBW for Varenicline and Bupropion removed December 2016

• Cautions about risk for paranoia, psychosis, or anxiety remain in labeled information, but not as BBW

• Risk increased in patients with depression, anxiety, schizophrenia or with previous treatment for mental disorder

• For bupropion, the class effect warning (for antidepressants) remains

www.fda.gov
• The physician decides to prescribe varenicline and refers SM to a group cessation clinic program

• She asks if you could review his record and recommend appropriate vaccines based on his history

• SM immigrated here eight years ago and has received the influenza vaccine each of the past five years

• There is no other vaccine history reported
What pneumococcal vaccine recommendation is appropriate for this 63 year old man with COPD?

A. PPSV 23 now
B. PCV 13 now, then PPSV 23 in one year
C. PCV 13 now
D. Both PCV 13 and PPSV 23 now
Pneumococcal Vaccine Recommendations for COPD

- PPSV 23 (polysaccharide) is recommended for COPD patients less than 65 years of age (single dose)
- At age 65, PCV 13 (conjugate) is recommended followed by PPSV 23 one year later
  - Above recommendation assumes that previous PPSV is at least one year before recommended PCV 13, and 5 years before next PPSV 23 dose
Influenza vaccine recommended annually for all patients with COPD, regardless of age or disease severity.

In COPD, immunization decreases risk of:
- Developing influenza infection
- Hospitalization, death

Patients can be immunized while on systemic and inhaled corticosteroids.

Preventing Complications: Immunization

http://www.cdc.gov/vaccines/acip
www.gold.copd.org

Meet TM

• TM is a 72 year old woman with long-standing COPD attributed to a 60 pack year smoking history. She stopped smoking 5 years prior.

• TM had previously been categorized with Group B COPD based on an MMRC score of 3, CAT score of 24 and prior low risk for exacerbations. Her last documented FEV1 was 52% of predicted.

• She has been reasonable well controlled on aclidinium twice daily and PRN albuterol, but recently was hospitalized for a COPD exacerbation. This was her second episode in the past year and her first hospitalization.
• TM is seen in the clinic 10 days after her discharge and is close to her baseline by her report.
• Spirometry reveals an FEV1 of 45% predicted; her MMRC is 3 and CAT Score is 26.
• Her physician indicates her current severity classification as Group D and asks for recommendations regarding pharmacotherapy.
• (Recall that her current therapy is aclidinium twice daily and PRN albuterol)
Evaluating Pharmacotherapy

• When evaluating pharmacotherapy in a patient with COPD, consider the patient’s current
  • Avoidance of aggravating factors and triggers
  • Adherence
  • Ability to use inhalation device
  • Vaccine status

• Considering and addressing these factors is (always) important in the context of how well current therapy is working
• What pharmacotherapy recommendation would you make for TM now?

A. Continue current regimen as she is back to her baseline
B. Start a LABA/LAMA combination
C. Discontinue LAMA, and start a LABA/ICS combination
D. Start triple therapy with a LABA/LAMA/ICS
COPD Patient Category D

Initial Therapy
- Initial therapy should be LAMA for exacerbation prevention and symptom control
- Consider dual long-acting bronchodilators (LAMA/LABA) as initial therapy for patients with high symptom burden (CAT >20)
- Consider ICS/LABA for patients with asthma/COPD overlap syndrome or eosinophil count > 300

Evaluate effect
- Assess benefit of therapy on exacerbations & symptoms after initiation
- Assess inhaler technique regularly
- Assess technique & adherence before modifying therapy

Escalation
- Continue therapy if beneficial or re-education needed
- If persistent symptoms and/or exacerbations on LAMA: escalate to LAMA/LABA
- If persistent symptoms and/or exacerbations on LAMA/LABA or ICS/LABA: escalate to triple therapy with LAMA/LABA/ICS

Persistent exacerbations on triple therapy
- For patients on LAMA/LABA/ICS with persistent exacerbations, may consider one of the following:
  - Add roflumilast for patients with FEV1<50% and chronic bronchitis, especially if at least one exacerbation with hospitalization
  - Add azithromycin daily (non-smokers or former smokers only)

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Preventing Exacerbations:
LAMA/LABA vs. ICS/LABA

• FLAME trial (non-inferiority)
  • Glycopyrronium/indacaterol (LAMA/LABA) vs. fluticasone/salmeterol (ICS/LABA)
  • Patients with ≥ 1 exacerbation in last year
    • 53% of patients already on ICS at study screening
  • Annual exacerbation rate
    • LAMA/LABA 3.59 vs. ICS/LABA 4.03; p=0.003
  • Moderate to severe exacerbation rate
    • LAMA/LABA 0.98 vs. ICS/LABA 1.19; p<0.001
  • Pneumonia rate higher with ICS/LABA
    • LAMA/LABA 3.2% vs. ICS/LABA 4.8%; p=0.02

Wedzicha et al. NEJM 2016;374:2222-34
Role of Triple Therapy

• TRILOGY trial (2016)
  • LAMA/LABA/ICS vs. ICS/LABA
  • 23% reduction in moderate to severe exacerbations with triple therapy

• TRIBUTE (2018)
  • LAMA/LABA/ICS vs. LAMA/LABA
  • 15% reduction in moderate to severe exacerbations with triple therapy
  • Similar rates of pneumonia between groups

Lipson et al. NEJM 2018;378:1671-80
Singh et al. Lancet 2016;388:963-73
Role of Triple Therapy

• IMPACT (2018)
  • LAMA/LABA/ICS vs. ICS/LAMA vs. LAMA/LABA
  • 15% reduction in moderate to severe exacerbations with triple therapy vs. ICS/LABA
  • 25% reduction in moderate to severe exacerbations with triple therapy vs. LAMA/LABA
  • Higher rate of pneumonia in ICS groups

Papi et al. Lancet 2018;391:1076-84
COPD Action Plan

• TM’s physician also asks the pharmacist to help develop a COPD action plan.

• The action plan:
  • Is becoming more commonly used to improve outcomes
  • Is similar to an asthma action plan
  • Describes chronic therapy
  • Includes instructions about how to assess current symptoms and take action
  • Also describes other resources available to patient and how to access them
  • See example
Poll Everywhere

• What is the pharmacotherapy recommendation for treating a patient in COPD Group A?

A. Inhaled albuterol alone
B. Antibiotic
C. Inhaled corticosteroid
D. Dual bronchodilators
COPD Patient Category A

Offer bronchodilator
• All patients should be offered bronchodilator treatment
• Can be short or long-acting depending on symptoms

Evaluate effect
• Assess symptomatic benefit of therapy after initiation
• Assess inhaler technique regularly
• Assess technique & adherence before modifying therapy

Continue, stop or alternative
• Continue therapy if beneficial or re-education needed
• Stop therapy if intolerable adverse effects
• Try alternate class for symptom control

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Bronchodilator Considerations

• Factors influencing choice of bronchodilator therapy
  • Safety
  • Effectiveness
  • Effect on disease course
  • Convenience
  • Costs
  • Access
Other General Pharmacotherapy Recommendations

- Prevention of exacerbations is an important goal for COPD management
- Exacerbations hasten disease progression and increase the risk for mortality
- Several available pharmacotherapies have been shown to reduce exacerbation frequency
- LAMAs are recommended for Group C patients based on
  - Focus on bronchodilator therapies
  - Evidence of superior benefit in reducing exacerbations
Impact of COPD Exacerbations on Lung Function

Lung Function (FEV1 in Liters)

Time (Month to Years)
Target: Prevent Exacerbations

- Long-acting bronchodilators
  - LAMA superior to LABA
    - Compare to symptom control LAMA=LABA
  - LAMA/LABA superior to LAMA or LABA alone
  - LAMA/LABA superior to ICS/LABA for category D

- Inhaled corticosteroids
  - ICS/LABA superior to LABA or ICS alone

- Oral phosphodiesterase-4 inhibitor (PDE4I)
  - Roflumilast

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Preventing Exacerbations: LAMA vs. LABA

• **POET-COPD trial**
  - Tiotropium vs. salmeterol for prevention of exacerbations
  - Patients with moderate to severe COPD and history of exacerbations in last year
  - Time to first exacerbation: tiotropium 187 days vs. salmeterol 145 days
  - Annualized exacerbation rate (moderate to severe exacerbations)
    - Tiotropium 0.64 vs. salmeterol 0.72

• **INVIGORATE trial**
  - Tiotropium vs. indacaterol for prevention of exacerbations
  - Patients with at least one exacerbation in last year
  - Annualized exacerbation rate (moderate to severe exacerbations)
    - Tiotropium 0.61 vs. indacaterol 0.79

Vogelmeier et al. NEJM 2011;364(12):1093-1103
Other General Pharmacotherapy Recommendations

• Inhalation therapy is commonly used in COPD management
• Many patients have difficulty in using inhalation devices
• There is no perfect inhalational delivery device
• Available devices differ in their instructions for use and care
• Patients require education, observation and periodic reinforcement regarding proper use
• Patients who use different types of inhaler devices have poor outcomes compared to patients who use the same type of device for different medications
Patient Considerations

• Physical limitations
  • Vision, tremor, arthritis

• Ability to understand multiple inhaler techniques
  • Metered-dose inhaler (MDI)
  • Dry-powder inhaler (DPI)
  • Nebulizer
  • Soft mist inhaler (SMI)

• Patients with severe airflow obstruction (FEV$_1$ < 30% of predicted)
  • Certain DPIs may not be effective
Meet OP (your final patient)

- OP is a 78 year old woman with longstanding COPD Group D.
- She suffers numerous exacerbations (3 to 4 a year) sometimes requiring hospitalization.
- She requires supplemental oxygen at 2L/min.
- Her current chronic treatment is a LABA/LAMA/ICS along with albuterol nebulizer for rescue.
- She is recently discharged from an ICU stay in the hospital where she was intubated for 2 days.
- She has recovered and is back to her baseline status and ready for discharge.
- The physician asks you for advice about roflumilast.
RE(2)SPOND Trial

- Annual exacerbation rate was 1.17 for roflumilast group and 1.27 for control group
  - Relative risk 0.92 (0.81-1.04); p=0.163
- Approximately 50% of subjects experienced 0 exacerbations and ~27% had one
- Exacerbation rate was reduced in subgroup with >3 exacerbations
  - From 2.62 to 1.59 (p=0.03)
- Discontinuation of therapy due to adverse events: 11.7% with roflumilast and 5.4% with placebo (diarrhea 10%, weight loss 8%)

Roflumilast Considerations

• Inhaled therapy should be optimized prior to considering additional agents to reduce exacerbation risks

• Roflumilast may be beneficial when added to double or triple inhaled therapy for patients with a history of frequent exacerbations (>3) or exacerbations requiring hospitalization

• Patients should be monitored for possible GI and psychiatric adverse effects, which have been reported in other studies

• Newer data suggests better tolerability if started at a lower dose and titrated upwards

• What other strategies can a pharmacist use to help the patient have a smooth transition to home?
# Discharge Preparation

<table>
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<th>Timeline</th>
<th>Assessment</th>
<th>Plan</th>
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</thead>
<tbody>
<tr>
<td>Prior to Discharge</td>
<td>• Maintenance therapy and optimize per therapeutic goals and patient factors</td>
<td>• <strong>Ensure patient will be able to obtain and afford prescriptions for therapy</strong></td>
</tr>
<tr>
<td></td>
<td>• Inhaler technique</td>
<td>• Utilize motivational interviewing and teach back for education and counseling</td>
</tr>
<tr>
<td></td>
<td>• Technique and adherence before modifying therapy</td>
<td>• Ensure understanding of medications to continue and/or stop (i.e. antibiotics, systemic corticosteroids)</td>
</tr>
<tr>
<td></td>
<td>• Tobacco cessation readiness, if continued smoking</td>
<td>• Coordinate referral to outpatient tobacco cessation services, if indicated</td>
</tr>
<tr>
<td></td>
<td>• Immunization status (influenza, pneumococcal)</td>
<td>• Provide immunizations while hospitalized</td>
</tr>
<tr>
<td></td>
<td>• Need for oxygen therapy after discharge</td>
<td>• Coordinate outpatient services for supplemental oxygen, if indicated</td>
</tr>
<tr>
<td></td>
<td>• Needed follow-up for comorbid conditions</td>
<td>• Ensure follow-up care plans are communicated and appointments scheduled (i.e. within 1-4 weeks post-discharge)</td>
</tr>
</tbody>
</table>

[www.goldcopd.org]
Ensuring Access to Medications: Strategies

• Review insurance formulary for preferred options, if appropriate
• Assist with prior authorizations (nebulized therapy)
• Identify discount cards, copay cards, patient assistance programs
  • Be cautious of frequent changes in inhaler devices to get the best deal
• Remember – the best COPD regimen is one the patient will consistently take!
Summary

• COPD is progressive as long as exposures continue
  • Smoking cessation efforts are essential
• No class of medication has been proven to have a mortality benefit
• Bronchodilators are the focus of therapy and dual bronchodilators have benefits
• Therapies to reduce exacerbation risk are a key strategy
• Influenza and pneumococcal vaccines are important to reduce risks
## Summary: COPD Therapies & Targets

<table>
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<tr>
<th>Therapy</th>
<th>Decrease Disease Progression</th>
<th>Improve Symptoms</th>
<th>Prevent Exacerbations</th>
<th>Comments</th>
</tr>
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<tbody>
<tr>
<td>Tobacco cessation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Recommended for all patients</td>
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<tr>
<td>SABA: Short-acting beta-agonists</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>All patients should be prescribed for rescue</td>
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<td>SAMA: Short-acting muscarinic antagonists</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Also referred to as anticholinergics; longer onset 10-15 min</td>
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<td>LABA: Long-acting beta agonists</td>
<td>No</td>
<td>Yes (LAMA=LABA)</td>
<td>Yes (LAMA&gt;LABA)</td>
<td>Okay to use as monotherapy in COPD</td>
</tr>
<tr>
<td>LAMA: Long-acting muscarinic antagonists</td>
<td>No (? Mild patients)</td>
<td>Yes (LAMA=LABA)</td>
<td>Yes (LAMA&gt;LABA)</td>
<td>Also referred to as anticholinergics</td>
</tr>
<tr>
<td>ICS: Inhaled corticosteroids</td>
<td>No</td>
<td>Yes (moderate)</td>
<td>Yes</td>
<td>NOT indicated as monotherapy in COPD</td>
</tr>
<tr>
<td>Roflumilast</td>
<td>No</td>
<td>Yes (moderate)</td>
<td>Yes</td>
<td>Added to dual or triple inhaled therapy</td>
</tr>
</tbody>
</table>
Self Assessment

• Which of the following treatment strategies has been proven to reduce mortality in patients with COPD?

A. Inhaled corticosteroids  
B. Long-acting muscarinic antagonists  
C. Smoking cessation  
D. Long-acting beta agonists  
E. Respiratory muscle training
Self Assessment

• Which of the following classes of medication is the primary focus for COPD pharmacotherapy?

A. Inhaled bronchodilators
B. Inhaled corticosteroids
C. Antibiotics
D. Oral corticosteroids
E. Mucolytics
Which of the following is a common barrier to effective transition when a patient with COPD is discharged from the hospital to home?

A. Lack of effectiveness of antibiotic
B. Overuse of oxygen therapy
C. Decreased benefit of oral corticosteroids
D. Problems with access to medications
Self Assessment

• Which of the following statements is true regarding the use of inhalation therapy?

A. The most convenient device to use is a jet nebulizer
B. Overall rates of correct use of inhalers exceed 90%
C. Metered-dose inhalers are the least effective inhaler device
D. All inhaler devices require education and periodic reinforcement
Questions?