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COPD Management of the Outpatient

Patrick C. Crane, DNP, RN, AGPCNP-BC

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Conflict of Interest Disclosure


No conflict of interest to disclose by author or planning committee for this presentation

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COPD Defined


- Chronic Obstructive Pulmonary Disease
 - A Group of Diseases
 - Emphysema
 - Chronic Bronchitis
 - Refractory Asthma

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- "...a common preventable and treatable disease, is characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases. Exacerbations and comorbidities contribute to the overall severity in individual patients." (WHO, 2017,)

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Some Statistics

- 15 Million Americans living with COPD
- Lower lung disease is the 3rd highest cause of death
- \$32 Billion in Direct Costs
- \$20 Billion in indirect costs

(GOLD, 2017)

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COPD in Michigan

- 8% of Adults in MI were told they had COPD by a Provider
 - 6.8% of Men
 - 9.0% Women
- 43.7% Self-reported having Poor/Fair Health Status
- 24% >14 Mental Health Days in past 30 Days
- 19.2% Reported Hospitalization/ER within the past year
- 54.8% Reported Lower Quality of Life due to COPD

(National Center for Chronic Disease Prevention and Health Promotion, n.d.)

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Chronic Bronchitis

- Chronic, productive cough for 3 months.
- 2 Successive Years
- Other causes ruled out

(Celli & MacNee, 2004)

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Emphysema

- Structural pathology of the lungs.
 - Destruction of the Airspace
 - Abnormal, permanent enlargement of the airspaces distal to the terminal bronchioles

(Rennard, 1998)

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Normal Lungs

Lungs with COPD

<https://www.nhlbi.nih.gov/health/health-topics/topics/copd>

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Risk Factors

- Cigarette Smoking
- Genetics – Alpha-1 Antitrypsin deficiency
- Low socioeconomic status
- Age
- Environmental exposure
- Biomass Fuel Use
- TB

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Health History

- Shortness of Breath
- Increased Sputum Production
- Cough
- Exposures (Cigarette Smoking, occupational exposures, etc.)
- Frequent Respiratory Infections
- Hx of Allergies
- Musculoskeletal disorders
- Heart disease
- Anemia

(GOLD, 2017)

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Physical Exam Findings

- Barrel Chest
- Thin or Obese
- Wheezing
- Accessory Muscle Use
- Orthopnea
- Pursed Lip Breathing
- Clubbing in COPD
- Prolonged Expiration
- Mental Status Changes

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Other Testing

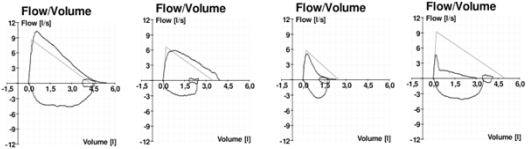
- Spirometry
- SpO2
 - Noninvasive
 - <88% Requires O2
 - Inexpensive



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Spirometry Continued

- $FEV_1/FVC < 0.70$ after Bronchodilators



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Exercise Testing

- 6 Minute Walk Distance

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INTERVENTIONS


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Immunizations

Influenza Vaccine
– Can reduce mortality in COPD patients
(Wongsurakiat, et al., 2011; Poole, et al., 2006)

Pneumococcal Vaccine
– Evidence less clear but recommended for all >65 yo.
(GOLD, 2017)

Encourage vaccines in your populations



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Pharmacological Interventions

- Bronchodilators
 - Short Acting (albuterol, levalbuterol)
 - Long Acting (fomoterol, salmeterol, indacaterol)
- Inhaled corticosteroids

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Antimuscarinic Agents

- Block bronchoconstriction effects of acetylcholine.
- Short Acting (ipratropium)
- Long Acting (tiotropium, aclidinium)
- Reduce the frequency of exacerbations and hospitalizations. May also increase the effectiveness of pulmonary rehab (Karner, Chong, & Poole, 2014; Kesten, et al., 2008)

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Inhaled Corticosteroids

- Usually used in conjunction with LABAs for moderate-severe COPD
- Side effects – Oral candidiasis, hoarse voice, bruising, pneumonia.
- fluticasone, mometasone, beclomehtasone,

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Inhaled Corticosteroids

- Nursing Considerations
 - Proper inhaler use
 - Many devices with different techniques
 - Prime devices if they haven't been used in awhile.
***MDI and Respimat containers only
 - Use Spacers
 - Rinsing mouth after ICS use
 - Instruct not to swallow the water

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Inhaler Videos

- Respimat
<https://youtu.be/n6zmUHVdFE>
- Handihaler
<https://youtu.be/8TYU73CZvi0>
- MDI
<https://youtu.be/yQIGzELcMq4>
- Twisthaler
<https://youtu.be/-VBAvheKvM0>



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Inhalers Continued

- Work with patient and provider to determine best fit.
 - This can be challenging in certain settings due to cost constraints, formulary, etc.
- Reinforce proper inhaler technique at each visit.

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NON-PHARMACOLOGICAL INTERVENTIONS

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Education

- Avoid Advice Giving
- Develop a plan to discuss exercise, medication education, support, etc. with you patient's preferences in mind.
- Encourage Pts to monitor and manage their symptoms

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Education Continued

- Energy conservation
- Stress management techniques
- Action plan for when to contact the provider
- Recognizing an exacerbation

(GOLD, 2017)

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Smoking Cessation

- Have the discussion with your patients at every visit.
- Personalize your encouragement – Motivational Interviewing
- Support your patients in quitting
- Work with your providers to consider nicotine replacement
- Combination of pharmacologic and behavioral interventions increases success (Stead & Lancaster, 2012)

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Pulmonary Rehabilitation

- Interdisciplinary
- Usually involves exercise, education, psychosocial support, nutrition, breathing retraining (AACVPR, n.d.)
- The most effective intervention for for reduced SOB, health status, and exercise tolerance (McCarthy, et al., 2015)
- Consider and anticipate Pt. barriers to access of Pulmonary Rehab.

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Physical Activity

- Physical Activity does improve outcomes
- Unclear of the type, amount, duration in the literature

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Palliative Care

- Decreasing breathlessness
 - May involve pharmacologic (i.e. opioids, O₂) and non-pharm (fans blowing into the face, Pulm. Rehab.)
 - Nutrition – Both obese and thin patients need nutritional interventions.

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Psychosocial support

- Pts with COPD have complex psychosocial needs
 - Depression, Anxiety, Isolation, etc.
 - Antidepressant use has been inconclusive
 - Mindfulness, Yoga, relaxation have shown benefits (Farver-Vestergaard, Jacobsen, & Zachariae, 2015)

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Exacerbations

Increased mucous production, inflammation, gas trapping

Symptoms

- Increased shortness of breath (Hallmark)
- Purulence of Sputum
- Increased cough and wheeze

(GOLD, 2017)

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Exacerbations Continued

- Triggers
 - Viral Infections
 - Bacterial Infections
 - Environmental Exposure

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Exacerbations Continued

- Classifications
 - Mild (SABD Only)
 - Moderate (SABD, Steroids and/or antibiotics)
 - Severe (Requires Hospitalization): May include respiratory failure.

(GOLD, 2017)

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Other Nursing Interventions

- For breathlessness
 - Positioning
 - Teach diaphragmatic breathing
 - Encourage fluids (>2500 ml/day)
 - Humidify Air
 - Decrease anxiety
 - Teaching to reduce the intake of large meals

(Haugen & Galura, 2010).

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Activity Intolerance

- Allow for balance of rest and activity
- Encourage Pts to conserve energy when performing strenuous activities.
- Environmental considerations like keeping frequently used items within reach, shower chairs, etc.
- Encourage to notify provider when activity intolerance worsens.

(Haugen & Galura, 2010)

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THANK YOU!

QUESTIONS?

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