A CASE PRESENTATION BENEFITS OF PULMONARY REHABILITATION

BY

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"BUT YOU BE STRONG AND DO NOT LOSE COURAGE, FOR THERE IS REWARD FOR YOUR WORK".

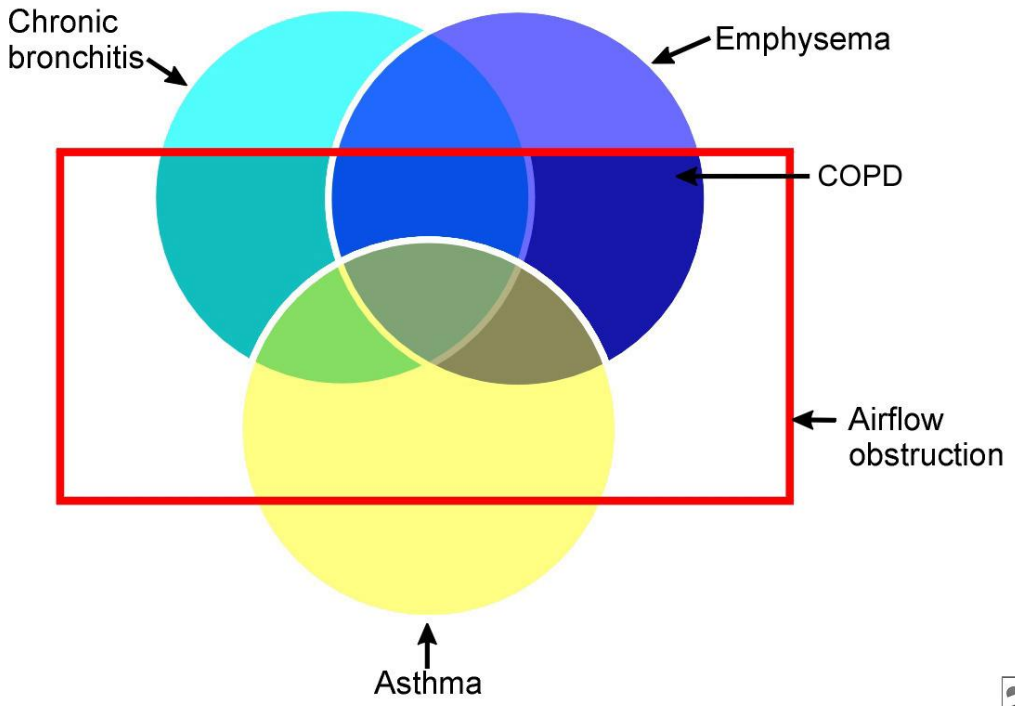
DISCLOSURE

I have no actual or potential conflict of interest in relation to this presentation

This presentation is strictly for informational/educational purpose only

Patient consented to sharing his information

SPECTRUM OF COPD
DIAGRAM COURTESY OF MEDSCAPE



GOLD CLASSIFICATION OF COPD

	FEV_1/FVC	FEV_1
I - Mild COPD	< 0.70	FEV1 >80% predicted
II - Moderate COPD	< 0.70	FEV1 50% -79% predicted
III - Severe COPD	< 0.70	FEV1 30% - 49%
IV - Very Severe COPD	< 0.70	FEV1 <30% OR <50% with signs of chronic respiratory failure

DEFINITION OF PR

- "…a multidisciplinary program of care for patients with chronic respiratory impairment that is individually tailored and designed to optimize each patient's physical and social performance and autonomy." (NICE)
- "comprehensive intervention based on a thorough patient assessment followed by patient-tailored therapies that include, but are not limited to, exercise training, education, and behavior change, designed to improve the physical and psychological condition of people with chronic respiratory disease and to promote the long-term adherence to health-enhancing behaviors" (ATS) ERS)

American Association of Cardiovascular and Pulmonary Rehabilitation (*AACVPR)*

American Association for Respiratory Care (*AARC)*

Centers for Medicare and Medicaid Services (CMS)

GOALS-PR

Reduced respiratory symptoms and complications

Improved exercise performance

Maintenance of emotional well being

Reduced readmissions and hospitalizations

CONTRAINDICATIONS–PR

Contraindications to pulmonary rehabilitation include conditions that would place the patient at increased risk during exercise or present obstacles to participation

Coronary artery disease

intractable CHF

severe arthritis, neurologic impairment, cognitive or psychosocial disorders

INDIVIDUAL TREATMENT PLAN (ITP)

The ITP must focus on 4 domains :

Exercise

Nutrition

Education

Psycho-social well being of the patient

HISTORY OF ILLNESS-4/2015

63 year old Caucasian male with multiple pulmonary conditions was referred to pulmonary rehab by his pulmonologist 4/2015

Work history:

Worked in the mines in underground mining

Worked for 20 years as a continuous miner operator and an electrician

Disabled in 1991

PERTINENT MEDICAL HISTORY

Obstructive Sleep Apnea w/use of C-PAP (14 cm H2O)

Interstitial lung disease

COPD

Obesity

Complicated Pneumoconiosis/Pulmonary fibrosis

Hypertension, Anxiety, Chronic Pain

SURGICAL HISTORY

Lumbar fusion-2002

Carpal Tunnel surgery -2004

Prostatectomy due to prostate cancer-2005

Social History:

Former Smoker-

Smoked intermittently for 15 years, ½ to 1ppd

MEDICATIONS-RESPIRATORY

Spiriva— (tiotropium bromide-anticholinergic-promoting m3 smooth muscle relaxation

Symbicort—QD(budesonide/formoterol fumarate dihydrate-inhaled corticosteroid + long acting b2 agonist)

ProAir—PRN(albuterol)

Ipratropium-albuterol nebs (anticholinergic-bronchodilation)

Oral theophylline 300mg –BID–bronchodilators

02—continuous at 2L—via NC

PULMONARY REHAB–RESULTS

Enrolled at Boone Hospital for 12 week pulmonary rehab.

Initially, he could barely walk 2 minutes continuously, and couldn't walk any more than 320 feet total.

He scored 10 on RPE scale –2 minutes of walking

He scored 4 on DS scale

Daily Symptoms:

cough, sputum, wheezing, dyspnea

*rating of perceived exertion

*dyspnea scale

The modified Borg Scale for assessing the intensity of of dyspnea or fatigue

0	Nothing at all
0.5	Very, very slight (just noticeable)
1	Very slight
2	Slight (light)
3	Moderate
4	Somewhat severe
5	Severe (heavy)
6	
7	Very severe
8	
9	
10	Very, very severe (maximal)

PRIOR TO PULMONARY REHAB

Patient scored 30 on COPD Assessment Test

(CAT)

This is the highest you can score and it means that the symptoms experienced by the patient are severe and it also indicates that they would benefit from pulmonary rehab, addition of other medications, and manage exacerbations.

WHAT DOES >30 ON CAT MEAN?

Their condition stops them doing everything they want to do.

They never have any good days.

If they can manage to take a bath or shower, it takes them a long time.

They cannot go out of the house for shopping or recreation, or do their housework.

Often, they cannot go far from their bed or chair.

They feel as if they have become an invalid.

PR–GRADUATION

Midway through, he was able to do 5min. Interval exercises for a total of 25 minutes

By the end of 12 weeks, he was able to do 12 minute interval for a total of 48 minutes up to 1320 feet.

His RPE was under 4

His DS scale was under 2

GOALS OF PR

Prevent symptoms and exacerbations

Improve ADLs and QOL.

Educate patient about the disease

Tobacco cessation counselling

Encourage patient to participate in therapy and continue at home after formal therapy.

CURRENTLY

2 years later, his condition continued to worsen and had a double pneumonectomy in

7/2017

9/2017—he was readmitted to the hospital for grade 2 rejection 3 weeks after transplant

After stabilization and recovery, he was sent back to pulmonary rehab for conditioning.

Patient is now doing well.

REFERENCES

Global Initiative for Chronic Obstructive Lung Disease (GOLD): Global Strategy for the Diagnosis, Management, and Prevention of COPD 2017. www.goldcopd.org

The association between daily exacerbation symptoms and physical activity in patients with chronic obstructive pulmonary disease

Int J Chron Obstruct Pulmon Dis. 2018 Jul 18;13:2199-2206. doi: 10.2147/COPD.S156986. eCollection 2018.

ATS Committee on Proficiency Standards for Clinical Pulmonary Function Laboratories. ATS statement: guidelines for the six-minute walk test. Am J RespirCritCare Med 2002; 166:111.

COPD spectrum diagram-courtesy of medscape images.