

# FEATURES OF PNEUMONIA IN PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (CLINICAL CASE).

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# INTRODUCTION

Pneumonia remains one of the most actual problems for a practicing physician.

Important pathogenic significance in the development of pneumonia has already existing structural and functional changes in the lungs, and in particular chronic obstructive pulmonary disease (COPD).

Development of pneumonia in patients with COPD can lead to a worsening of the prognosis and an increase in mortality in such patients.

The Mayo Clinic defines COPD as, 'Chronic Obstructive Pulmonary Disease (COPD) is a chronic inflammatory lung disease that causes obstructed airflow from the lungs characterized by breathing difficulty, cough, mucus (sputum) production and wheezing.

***MAYO CLINIC, NOV. 2018***

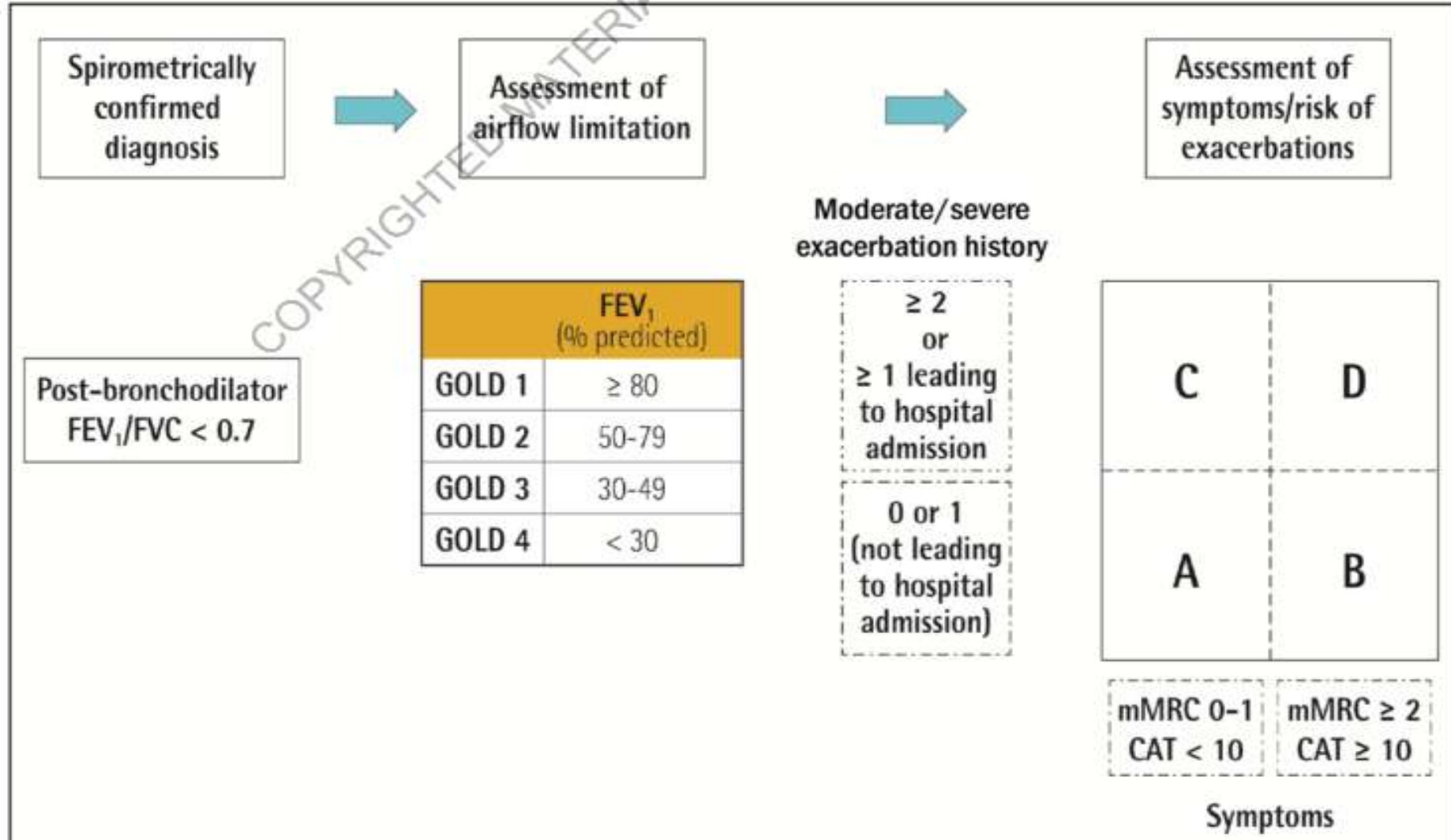
# OBJECTIVE

This clinical case show the features of pneumonia on the background of chronic obstructive pulmonary disease.

# CLASSIFICATION OF COPD 1

GOLD 1	Mild	FEV1 $\geq$ 80% predicted
GOLD 2	moderate	50-79% $<$ FEV1 80% predicted
GOLD 3	Severe	30-49% $<$ FEV1 50% predicted
GOLD 4	very severe	30% $<$ FEV1 30% predicted

# CLASSIFICATION OF COPD 2



# RISK FACTORS FOR PNEUMONIA

Immunocompromised State

Nosocomial Infection

Chronic Alcoholism

Smoking

COPD

Chronic Liver Disease

Chronic Renal Failure

# OUR PATIENT

Name: M.A.P.

Age: 48 years

Occupation: Engineer

Location: Kharkiv

Date of admission: 01.11.2018



# PRESENT COMPLAINTS

Dry, persistent cough, moderate intensity, more often appears in the morning.

Running nose, both nostrils will be blocked with mucus, whitish to yellow in color

Headache around the eyes (frontal) and spreading to the occipital region, often last for 4 days, aching character, no relieving factors.

Fever (37.5C)

Difficulty in breathing

Chest pain; which radiates to the right shoulder. More often early in the morning and after strenuous exercises.

# OBJECTIVE STATUS 1

General condition: moderate, conciseness – clear.

Temperature: 37.5C, Weight: 60 kg Height:165 cm

BMI: 22 kg/m<sup>2</sup>

Constitutional body type: Normosthenic

Skin: pale, clean, well hydrated, tightened with reduced turgor.

Thyroid gland: not palpable.

Musculoskeletal system: limit movement in joints of knee, joints –elbow, clubbing of the fingers.

## OBJECTIVE STATUS 2

Lungs: resonance percussion sound, harsh breathing, decreased vesicular breathing and wheezing in inferior parts of both sides of lungs, RR -28cpm.

Heart borders are not enlarged, heart tones are clear, loud, rhythmic;

BP - 140\90 on both arms, radial pulse is synchronous, rhythmic at 96 bpm.

Liver at the costal margin, painless; spleen is not palpable.

sPasternatskiy sign - negative on both sides. Urination is free, painless.

# ANAMNESIS MORBI

Patient notes recurrence of obstructive bronchitis for the past 2 years.

He had visited the hospital for 4 consecutive occasions within the past one year.

Consequently, with a diagnosis of chronic bronchitis he was seen by a pulmonologist, during exacerbations .

Treatment was done at the hospital with mucolytics, antibiotics and glucocorticoids and salbutamol for inhalation. Lisinopril 10 mg 1tab dly

Salbutamol 1puff/ dly.

3 days prior to his admission, suffered a sore throat, running nose, cough and fever till 38,5 C for 3 days.

# ANAMNESIS MORBI

He was admitted to day hospital of polyclinic 24 for diagnosis : Chronic obstructive pulmonary disease

(COPD).

Chronic bronchitis in remission.

# ANAMNESIS VITAE

Patient is a smoker since 16 years smoked about 3 packs of cigarettes a days, after 2002 he decreased amount of cigarettes to 1 pack per day  $((16*60)/20= 48 \text{ pack/years!} - \text{very high risk for development of COPD.}$

Infections, injuries, tuberculosis, sexually transmitted diseases were denied.

Hereditary diseases are not identified.

Allergological history was not identified.

He takes at least 2 cups of strong coffee a day.

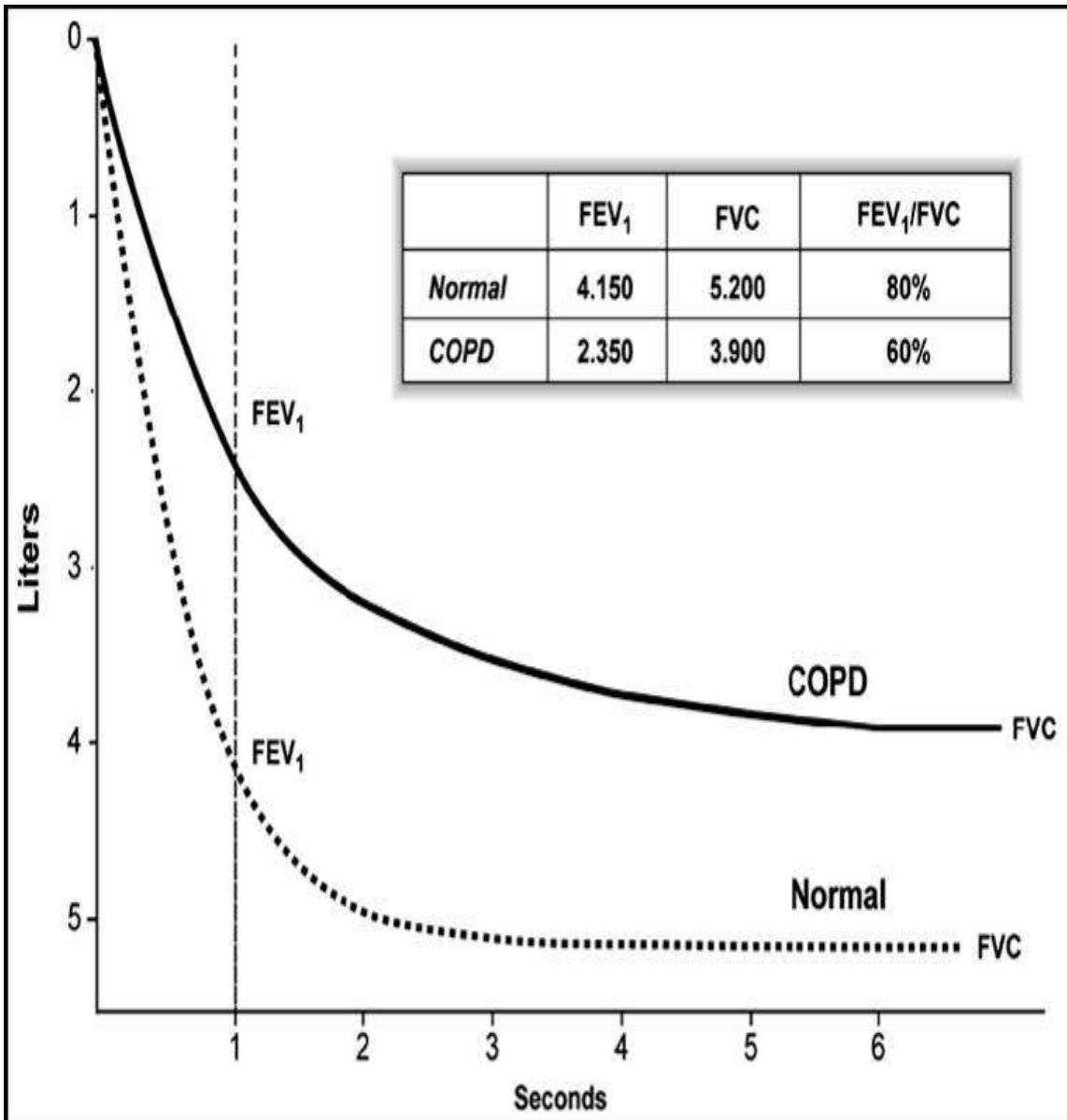
His father was a known asthmatic.

# INVESTIGATIONS DATA

## CBC (01/11/2018)

OPTION	RESULTS	NR
Hemoglobin	172	130,0 – 160,0 g/L
Erythrocytes	5,2	4,05 – 5,15 10 <sup>12</sup> /L
Color index	0,99	0,85 – 1,15
Leukocytes	12,4	4,0 – 9,0 10 <sup>9</sup> /L
ESR	20	2-15mm/h
Stab neutrophils	1	1-6 %
Segmented neutrophils	64	47-72%
Eosinophils	6	0,5-5,0%
Basophils	-	1-1,0 %
Lymphocytes	24	19-37%
Monocytes	5	3-11 %

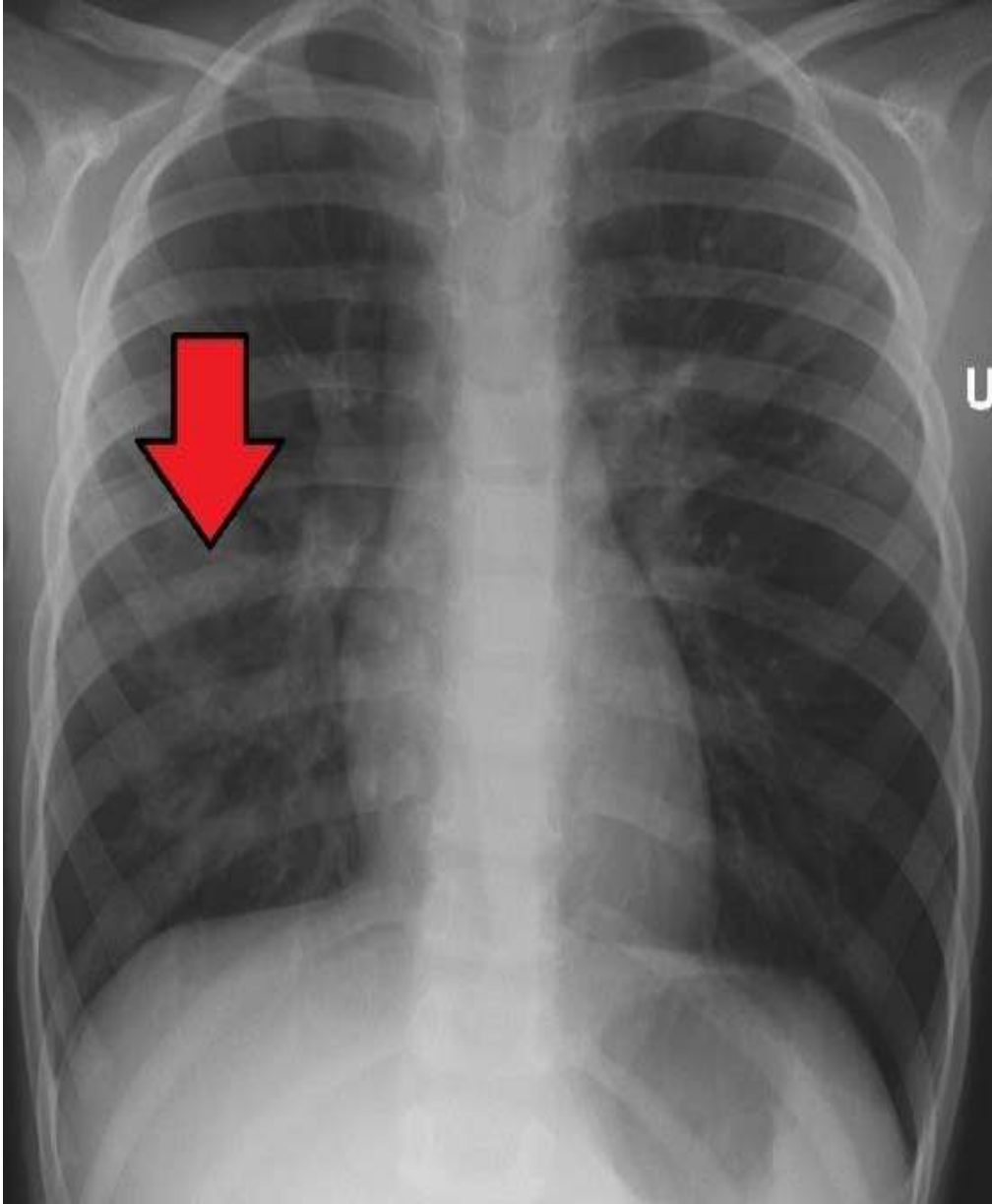
## SPIROMETRY (15/07/18)



Mild airflow obstruction FEV<sub>1</sub> – 55,3%  
• moderate

Airflow obstruction as FEV<sub>1</sub>/FVC – 61.8%;  
• severe airflow obstruction.





The lungs are hyper-expanded that the inferior border of the heart becomes visible, the heart appears to float above the diaphragm

Flattening of the diaphragm is often a more reliable feature of lung hyper expansion.

Airspace opacity, lobar consolidation, or interstitial opacities.

# MANAGEMENT

## NON-PHARMACOLOGICAL APPROACH

### ○Recommendations **STOP SMOKING!!!!**

- To maintain healthy lifestyle decrease sodium intake
- lipid lowering diet
- Reduce aerobic non strenuous exercises

## PHARMACOLOGICAL APPROACH

### PNEUMONIA

- Ceftriaxone 2g IV 12-24hr for 5 days
- Ambroxol Hydrochloride 30 mg 3times dly X 7days

### COPD

- Dexamethazone 16mg / day x 2 days
- Euphiline 125 mg/dly X 30 days
- Oxymethazoline 2-3 sprays every 10-12hours
- Tiotropium 18 mcg 1/dly
- Salbutamol 100 mcg 3-4x
- Lisinopril 10 mg in the morning
- Aspirin 75mg once daily continuously

# DIAGNOSIS

COPD, II stage, moderate degree according to the patient's spirometry, FEV1 – 55,3% from predictive value, FEV1/FVC – 61.8% which represent GOLD 3(Severe).

Community-acquired right-sided focal pneumonia of the inferior lobe.

Sinusitis

Arterial hypertension

# CONCLUSION

Pneumonia in patients with COPD aggravates the course of the underlying disease; at the same time, the presence of structural changes of lungs in COPD patients affects the state and prognosis of patients with pneumonia.

Exacerbation of COPD is crucial events in its management because they negatively affect the health status, rates of hospitalization readmission and the disease progress.

In this regard, general practitioners should use accurate approach to this category of patients.

# REFERENCES

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THANKS FOR YOUR ATTENTION