

# COPD

## Pathophysio.

### Features of Inflammation

Cells: neutrophils, large T in macrophages & T CD8+ T lymphocytes

Mediators: LTB<sub>4</sub>, IL-8 & TNF- $\alpha$

### Mechanism

#### 1. Small airway disease

- airway inf. (rev.)
- airway fibrosis (irrev.)
- $\uparrow$  airway resistance

#### 2. Parenchymal Destruction

- loss of alveolar attachments (irrev.)
- $\downarrow$  elastic recoil

## Treatment - 2023 Updates

### Initial Choice

SABA monotherapy

OR

LAMA or LABA

OR

LAMA/LABA

OR

LAMA/LABA/ICS

Calculate MRC & CAT to determine best initial therapy (see guidelines for details)

### If poor control

1) Check adherence/technique

2) Step up therapy

★ LABA + ICS is recommended in COPD. LAMA + LABA + ICS recommended

## Diagnosis

### Presentation

#### Symptoms

- chronic cough
- sputum
- dyspnea

#### Physical

- cyanosis of mucosal mb
- barrel chest
- $\uparrow$  RR
- pursed lips
- accessory muscle use

### Lung Tests

COPD stage	Spirometry (postbronchodilator)
Mild	FEV <sub>1</sub> $\geq$ 80% predicted, FEV <sub>1</sub> /FVC $<$ 0.7
Moderate	50% $\leq$ FEV <sub>1</sub> $<$ 80% predicted, FEV <sub>1</sub> /FVC $<$ 0.7
Severe	30% $\leq$ FEV <sub>1</sub> $<$ 50% predicted, FEV <sub>1</sub> /FVC $<$ 0.7
Very severe	FEV <sub>1</sub> $<$ 30% predicted, FEV <sub>1</sub> /FVC $<$ 0.7

★ FEV<sub>1</sub>/FVC  $<$  0.7

•  $\uparrow$  RV &  $\downarrow$  FVC

## Rationale - 2023 Updates

### LAMA/LABA vs LAMA vs LABA

- LAMA/LABA had  $\uparrow$  lung function,  $\uparrow$  symptoms,  $\downarrow$  treatment failure compared to either monotherapy

### LABA vs LAMA

- LAMA shown to be superior on exacerbation rates &  $\downarrow$  hospitalization rates

### LAMA/LABA vs ICS/LABA

- LAMA/LABA  $\uparrow$  time to 1st exacerbation (better)

### Roflumilast

- $\uparrow$  FEV<sub>1</sub>
- used in addition to ICS/LABA/LAMA

### Azithromycin

- reduce exacerbations

## Use ICS?

### YES

- hx of hospitalizations for exacerbations
- 2+ moderate exac./yr
- blood eosinophils  $>$  300 cells/ $\mu$ L
- hx or have asthma

### MAYBE

- 1 exacerbation/yr
- blood eosinophils 100-300 cells/ $\mu$ L

### NO

- repeated pneumonia
- eosinophils  $<$  100 cells/ $\mu$ L
- hx of mycobacteria inf.

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