

# Drugs used in chronic pulmonary diseases (COPD)

# 4



## Respiratory Block

# CHRONIC PULMONARY DISEASES (COPD)



## What is COPD

Is a chronic irreversible airway obstruction, lung damage and inflammation of the airway sacs (Treatment is very hard).

## Risk

### High risk:

\_smokers

### Can contribute:

- pollution
- Genetic factors

## treatment

Inhaled bronchodilators

Inhaled glucocorticoids

Oxygen therapy

### **Antibiotics**

specifically macrolides such as azithromycin to reduce the number of exacerbations.

Lung transplantation ( if the patient didn't respond to medications )

# CHRONIC PULMONARY DISEASES (COPD)



## Inhaled bronchodilators in COPD

Inhaled antimuscarinics		$\beta_2$ agonists	
Ipratropium	Tiotropium.	salbutamol + Ipratropium	Salmeterol + Tiotropium (long acting-less dose frequency)
They are superior to $\beta_2$ agonists in COPD		these drugs can be used either alone or combined	

# CHRONIC PULMONARY DISEASES (COPD)



## Does treatment of COPD differ from bronchial Asthma?

1- Antimuscarinic drugs like Ipratropium is preferred for COPD. Why?  
( Because ipratropium has rapid onset of action and short duration of action, that's why it's preferred in acute asthma)

2-Short acting b2-adrenergic agonist is used like for Asthma

3- However, oral or inhaled corticosteroids are only used for severe form of COPD.

4- Mucolytics like Acetylcysteine may be used.

5- Routine administration of Oxygen may be included for advanced cases.

# BRONCHODILATORS (RELIEVERS FOR BRONCHOSPASM)



Drugs	Pharmacokinetics	Action
<b>B2 agonists</b> Salbutamol, terbutaline	– Short acting – <b>main choice</b> in acute attack of asthma – Inhalation	↑ Adenyl cyclase
Salmeterol, formoterol	Long acting, Prophylaxis Nocturnal asthma	↑ cAMP
<b>Antimuscarinics</b>	<b>Main drugs For COPD</b>  Inhalation	Blocks M receptors
<ul style="list-style-type: none"> <li>• Ipratropium (Short)</li> </ul>		
<ul style="list-style-type: none"> <li>• Tiotropium (long)</li> </ul>		
<b>Xanthine derivatives</b>	(orally)  (parenterally)	• Inhibits phosphodiesterase ↑ cAMP
<ul style="list-style-type: none"> <li>• Theophylline</li> <li>• Aminophylline</li> </ul>		

# ANTI-INFLAMMATORY DRUGS (PROPHYLACTIC)



Drug	Administration
<b>Corticosteroids</b> (Inhibits phospholipase A2) Dexamethasone, Fluticasone, budesonide	Inhalation
prednisolone	Orally
Hydrocortisone	parenterally
<b>Mast stabilizers</b> Cromoglycate (Cromolyn), Nedocromil	Inhalation, prophylaxis in children
<b>Cysteinyl antagonists (CyLT1 antagoist)</b> Zafirlukast	orally
<b>Omalizumab (Anti IgE antibody)</b>	Injection, SC

# MCQs

**Which of the following is the best to be prescribed as a 1<sup>st</sup> choice for a patient with COPD :**

- A. Adrenaline
- B. Ipratropium
- C. Theophylline
- D. Salmeterol

**A patient diagnosed with COPD, which one of the following could be prescribed to him :**

- A. a combination of Budesonide + Ipratropium
- B. a combination of Salbutamol + Nedocromil
- C. a combination of Salmeterol + Formeterol
- D. a combination of Tiotropium + Salmeterol

Answers: Q1-B, Q2-D

We hope we made this lecture easier for you  
Contact us for any questions or comments  
Good Luck !

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