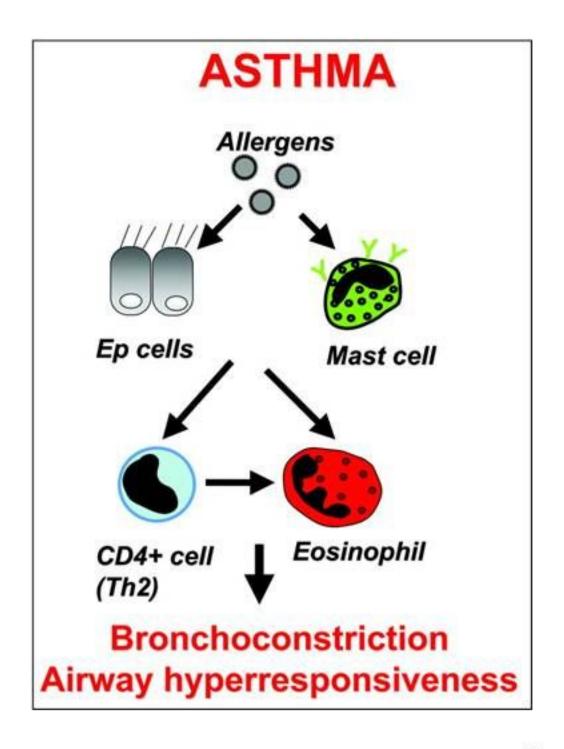
# ICS in treatment acute asthma



#### **Asthma**

- Chronic inflammatory disease.
- inflammatory cells
- Increasing pulmonary tract respond.
- Obstructive pulmonary.
- Could be stopped by itseft or treatment.

## Inflammatory mechanism



Source: Peter J. Barnes, MD

## Inflammatory cells & mediators

## Inflammatory cells Mast cells

Eosinophils Th2 cells Basophils

Neutrophils Platelets

#### Structural cells

Epithelial cells Sm muscle cells Endothelial cells Fibroblast

Nerves

#### **Mediators**

Histamine Leukotrienes Prostanoide

**Prostanoids** 

PAF

**Kinins** 

Adenosine

**Endothelins** 

Nitric oxide

Cytokines

Chemokines

**Growth factors** 

#### **Effects**

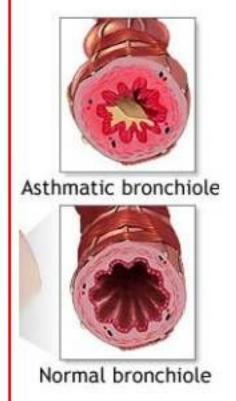
Bronchospasm

Plasma exudation

Mucus secretion

AHR

Structural changes

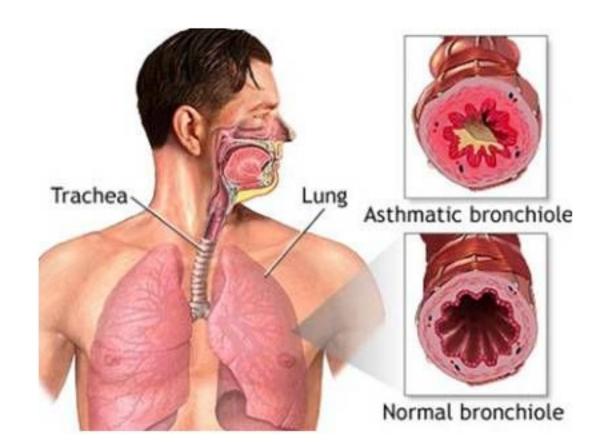


Source: Peter J. Barnes, MD



#### Corticosteroide roles

- Treatment to achieve control
- Acute Asthma Exacerbations





## Corticosteroide roles in acute asthma

- □ ICS: effective in acute asthma treatment
- High dose of ICS + Salbutamol : more effective than Salbutamol. (evidence B)
- High dose of ICS + β<sub>2</sub>: more effective than GCS + β<sub>2</sub> on symtoms, signs, PEFR. ( evidence B)

# Early High dose ICS treatment – Fast release symptoms of acute asthma

- 100 patients wit moderate acute asthma
- Age: 1-18

group 1: treatment with high dose ICS < 72 hours

group 2: treatment with high dose ICS > 72 hours

#### Results:

Group 1: 6% need oral steroids for release symptoms.

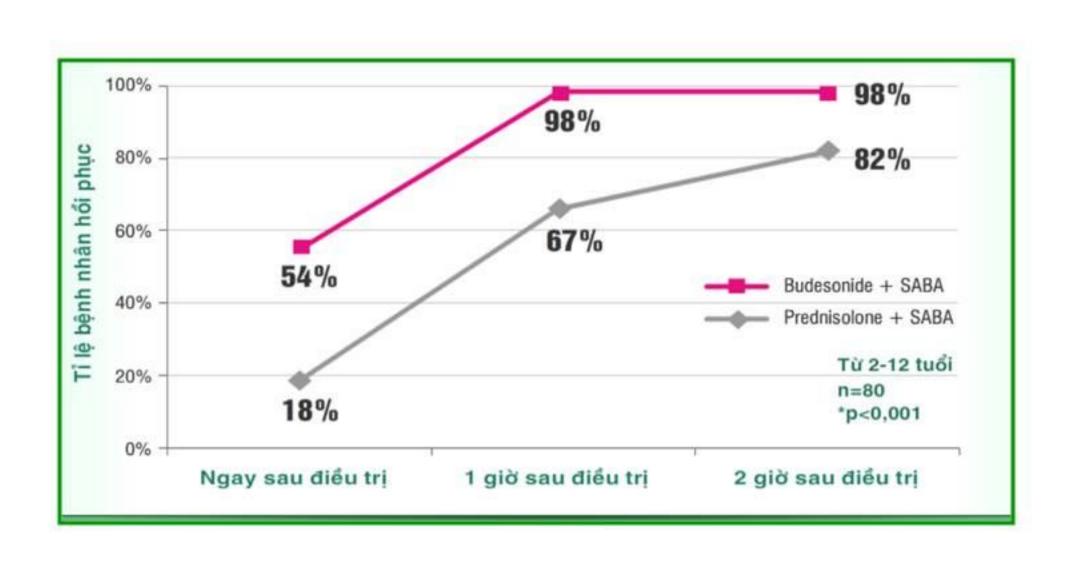
Group 2: 36% need oral steroids for release symptoms but not fast.

#### Conclusion::

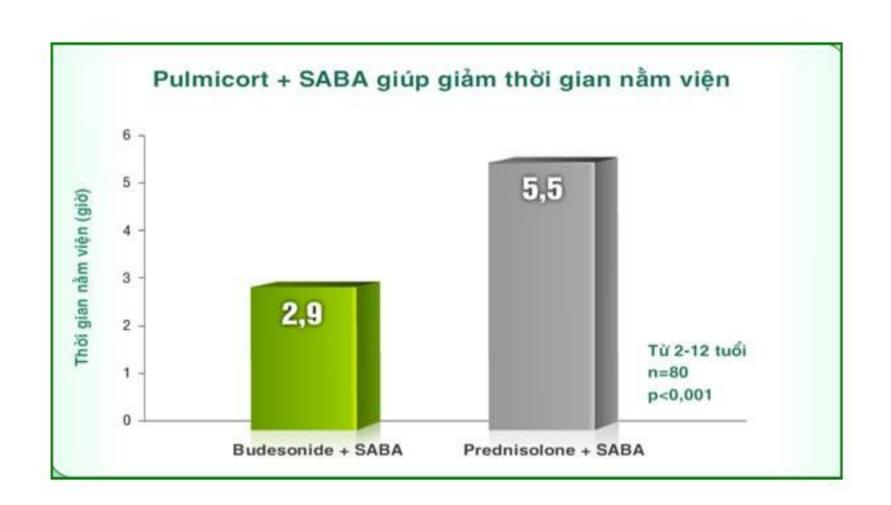
Early high dose ISC <72 hours helps fast release symptoms and decrease using oral steroids.

Source: Wachs, et al., 2004. The Journal of Allergy and Clinical Immunology, 113, 2, P.114.

## Effect of ICS vs Prednisolone in acute asthma treatment



## ICS +SABA = decrease hospital time because of acute asthma



### Rapid effect ICS in acute asthma

- RCT (MEDLINE, EMBASE, the Cochrane Controlled Trials Register).
- 17 studies (1996-2006), including: 470 adults and 663 children.
- Evaluation: hospitalization rates and likely out of the ER.
- Results:
  - After 2 to 4 h, the rate of hospitalization decreased significantly in trials using multiple doses of ICS ([OR], 0.30; 95%, [CI]:0.16 to 0.55)
  - Patients treated with ICS: rapid clinical improvement (CI: 2.97 to 7.42; p = 0.0001).
  - Resp. function in 60 minutes early.
  - The efficiency is only achieved when patients receiving multi-dose ICS
- Conclusions: ICS for effective early (1 to 2 h) when using multiple doses ≤ 30 minutes.

### CONCLUSION

- Asthma is a chronic inflammatory conditions.
   Corticosteroids have a clear role in the control of asthma.
- ICS is a component in the treatment of asthma, help improve early symptoms and resp. function.
- ICS is effective in preventing recurrent acute asthma as oral corticosteroids and reduce acute asthma relapse after leaving the emergency room.

