

# LONG ACTING BETA<sub>2</sub> AGONISTS (LABAs)

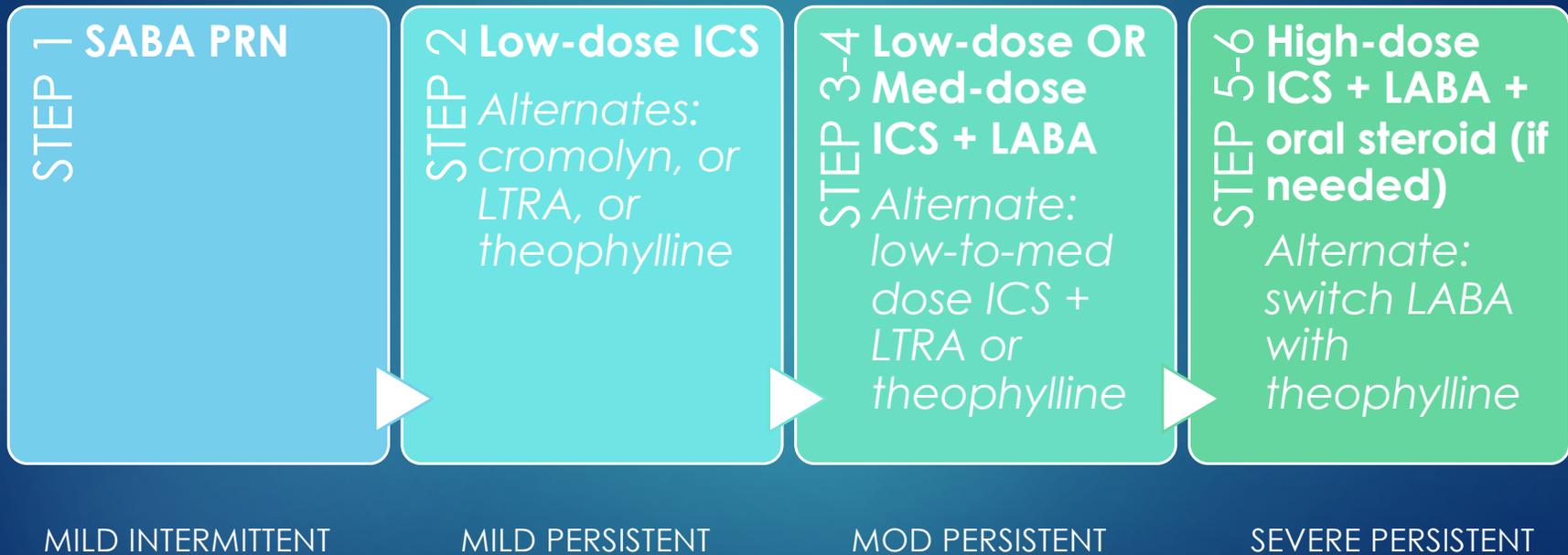
FLAME LECTURE: 28

BAQAIS 8.17.19

# LEARNING OBJECTIVES

- ▶ Describe what LABAs are and their uses
- ▶ Understand the mechanism of action of LABAs
- ▶ Detail types of Inhaled LABAs/Corticosteroids available
- ▶ Prerequisites:
  - ▶ NONE
- ▶ See also – for closely related topics
  - ▶ FLAME 19: LABAs for COPD

# REVIEW OF MAINTENANCE MGMT



## OVERVIEW

- ▶ “Long-acting” beta agonists are often used in STEP 3-6 of asthma management and include:
  - ▶ Formoterol, salmeterol, vilanterol
- ▶ LABAs have bronchodilator effects that last 12 to 24 hours (depending on the agent)
- ▶ Mainly used for long term asthma control
- ▶ Contraindicated as monotherapy due to increased asthma related mortality
- ▶ Often used safely in combination with corticosteroids for persistent asthma

# MECHANISM OF ACTION

- ▶ Beta agonists were developed through modifications of the epinephrine molecule to allow selective interaction with the beta<sub>1</sub> and beta<sub>2</sub> receptors (ex. isoproterenol), RATHER than the combined alpha and beta effects of epinephrine
- ▶ Further modification allows selectivity for beta<sub>2</sub> receptors on bronchial smooth muscle to achieve bronchodilation while minimizing the tachycardia associated with activation of beta<sub>1</sub> receptors on cardiac muscle

# INHALED LABA / STEROID COMBOS

- ▶ Advair (fluticasone / salmeterol)
- ▶ Symbicort (budesonide / formoterol)
- ▶ Breo Ellipta (fluticasone / vilanterol)
- ▶ Airduo (fluticasone / salmeterol)
- ▶ Dulara (mometasone / formoterol)

# ADVERSE EFFECTS

- ▶ >10% are CNS related: headache and pain
- ▶ Respiratory: nasal congestion, bronchitis, tracheitis, throat irritation
- ▶ Hypertension

# CONTRAINDICATIONS

- ▶ Hypersensitivity
- ▶ LABAs increase the risk of asthma related deaths, especially without concomitant use of controlled asthma medication
- ▶ Acute episodes of COPD

# REFERENCES

1. <https://www.aafp.org/afp/2016/0915/p454.html>
2. <https://accpjournals.onlinelibrary.wiley.com/doi/10.1002/phar.1913>
3. [https://www.aaaai.org/conditions-and-treatments/drug-guide/long-acting-bronchodilators-\(labas\)](https://www.aaaai.org/conditions-and-treatments/drug-guide/long-acting-bronchodilators-(labas))