Pulmonary Year in Review 2020

Brett Collander, MD

Healthy Driven™
Edward-Elmhurst HEALTH

2020 FOCUSED UPDATES TO THE Asthma Management Guidelines

A Report from the National Asthma Education and Prevention Program Coordinating Committee Expert Panel Working Group

AGES 12+ YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA

Treatment	Intermittent Asthma	Management of Persistent Asthma in Individuals Ages 12+ Years				
	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6 ■
Preferred	PRN SABA	Daily low-dose ICS and PRN SABA or PRN concomitant ICS and SABA▲	Daily and PRN combination low-dose ICS-formoterol▲	Daily and PRN combination medium-dose ICS-formoterol▲	Daily medium-high dose ICS-LABA + LAMA and PRN SABA▲	Daily high-dose ICS-LABA + oral systemic corticosteroids + PRN SABA
Alternative		Daily LTRA* and PRN SABA or Cromolyn,* or Nedocromil,* or Zileuton,* or Theophylline,* and PRN SABA	Daily medium-dose ICS and PRN SABA or Daily low-dose ICS-LABA, or daily low-dose ICS + LAMA,▲ or daily low-dose ICS + LTRA,* and PRN SABA or Daily low-dose ICS + Theophylline* or Zileuton,* and PRN SABA	Daily medium-dose ICS-LABA or daily medium-dose ICS + LAMA, and PRN SABA▲ or Daily medium-dose ICS + LTRA,* or daily medium-dose ICS + Theophylline,* or daily medium-dose ICS + Zileuton,* and PRN SABA	Daily medium-high dose ICS-LABA or daily high-dose ICS + LTRA,* and PRN SABA	
		Steps 2–4: Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in individuals ≥ 5 years of age whose asthma is controlled at the initiation, build up, and maintenance phases of immunotherapy▲			Consider adding Asthma Biologics (e.g., anti-IgE, anti-IL5, anti-IL5R, anti-IL4/IL13)**	

National Asthma Education and Prevention Program (NAEPP) Asthma Management Guidelines 2020

Edward-Elmhurst HEALTH | Healthy Driven

For individuals with **moderate to severe** persistent asthma already taking low- or medium-dose ICS, the preferred treatment is a single inhaler with ICS-formoterol (referred to as single maintenance and reliever therapy, or "SMART") used both daily and as needed.

SMART

- ✓ Individuals whose asthma is uncontrolled on maintenance ICS-LABA with SABA as quick-relief therapy should receive the preferred SMART if possible before moving to a higher step of therapy.
- ✓ ICS-formoterol should be administered as maintenance therapy with 1–2 puffs once or twice daily (depending on age, asthma severity, and ICS dose in the ICS-formoterol preparation) and 1–2 puffs as needed for asthma symptoms.
- ✓ Maximum number of puffs per day is 8 (36 mcg formoterol) for children ages 4–11 years and 12 (54 mcg formoterol) for individuals ages 12 years and older.
- ✓ Dose of formoterol was based on 4.5 mcg/inhalation, the most common preparation used in the studies reviewed.

Potential benefits: In studies this treatment consistently reduced asthma exacerbations requiring unscheduled medical visits or systemic corticosteroids and in some studies improved asthma control and quality of life. Reduced exposure to oral corticosteroids and to ICS treatment suggest that the intervention might reduce future corticosteroid-associated harms.

AGES 12+ YEARS: STEPWISE APPROACH FOR MANAGEMENT OF ASTHMA

	Intermittent Asthma	Management of Persistent Asthma in Individuals Ages 12+ Years				
Treatment	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5	STEP 6 ■
Preferred	PRN SABA	Daily low-dose ICS and PRN SABA or PRN concomitant ICS and SABA▲	Daily and PRN combination low-dose ICS-formoterol▲	Daily and PRN combination medium-dose ICS-formoterol▲	Daily medium-high dose ICS-LABA + LAMA and PRN SABA▲	Daily high-dose ICS-LABA + oral systemic corticosteroids + PRN SABA
Alternative		Daily LTRA* and PRN SABA or Cromolyn,* or Nedocromil,* or Zileuton,* or Theophylline,* and PRN SABA	Daily medium-dose ICS and PRN SABA or Daily low-dose ICS-LABA, or daily low-dose ICS + LAMA,▲ or daily low-dose ICS + LTRA,* and PRN SABA or Daily low-dose ICS + Theophylline* or Zileuton,* and PRN SABA	Daily medium-dose ICS-LABA or daily medium-dose ICS + LAMA, and PRN SABA▲ or Daily medium-dose ICS + LTRA,* or daily medium-dose ICS + Theophylline,* or daily medium-dose ICS + Zileuton,* and PRN SABA	Daily medium-high dose ICS-LABA or daily high-dose ICS + LTRA,* and PRN SABA	
		Steps 2–4: Conditionally recommend the use of subcutaneous immunotherapy as an adjunct treatment to standard pharmacotherapy in individuals ≥ 5 years of age whose asthma is controlled at the initiation, build up, and maintenance phases of immunotherapy▲			Consider adding Asthma Biologics (e.g., anti-IgE, anti-IL5, anti-IL5R, anti-IL4/IL13)**	

National Asthma Education and Prevention Program (NAEPP) Asthma Management Guidelines 2020

Edward-Elmhurst HEALTH | Healthy Driven

EDITORIAL
GINA 2019

GINA 2019: a fundamental change in asthma management

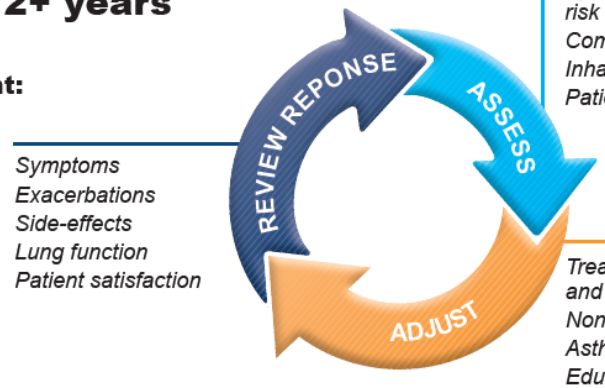
Treatment of asthma with short-acting bronchodilators alone is no longer recommended for adults and adolescents

Helen K. Reddel[1], J. Mark FitzGerald[2], Eric D. Bateman[3], Leonard B. Bacharier[4], Allan Becker[5], Guy Brusselle[6], Roland Buhl[7], Alvaro A. Cruz[8], Louise Fleming[9], Hiromasa Inoue[10], Fanny Wai-san Ko[11], Jerry A. Krishnan[12], Mark L. Levy[13], Jiangtao Lin[14], Søren E. Pedersen[15], Aziz Sheikh[16], Arzu Yorgancioglu[17] and Louis-Philippe Boulet[18]

Box 3-5A

Adults & adolescents 12+ years

Personalized asthma management:
Assess, Adjust, Review response



Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

Treatment of modifiable risk factors and comorbidities
Non-pharmacological strategies
Asthma medications (adjust down or up)
Education & skills training

Asthma medication options:
Adjust treatment up and down for individual patient needs

	STEP 1	STEP 2	STEP 3	STEP 4	STEP 5
PREFERRED CONTROLLER to prevent exacerbations and control symptoms	As-needed low dose ICS-formoterol *	Daily low dose inhaled corticosteroid (ICS), or as-needed low dose ICS-formoterol *	Low dose ICS-LABA	Medium dose ICS-LABA	High dose ICS-LABA Refer for phenotypic assessment ± add-on therapy, e.g.tiotropium, anti-IgE, anti-IL5/5R, anti-IL4R
Other controller options	*Low dose ICS taken whenever SABA is taken †*	*Daily leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken †*	*Medium dose ICS, or low dose ICS+LTRA #*	*High dose ICS, add-on tiotropium, or add-on LTRA #*	*Add low dose OCS, but consider side-effects*
PREFERRED RELIEVER	As-needed low dose ICS-formoterol *		As-needed low dose ICS-formoterol for patients prescribed maintenance and reliever therapy‡		
Other reliever option	*As-needed short-acting β_2-agonist (SABA)*				

* *Data only with budesonide-formoterol (bud-form)*
† *Separate or combination ICS and SABA inhalers*

‡ *Low-dose ICS-form is the reliever only for patients prescribed bud-form or BDP-form maintenance and reliever therapy*
\# *Consider adding HDM SLIT for sensitized patients with allergic rhinitis and FEV1 >70% predicted*

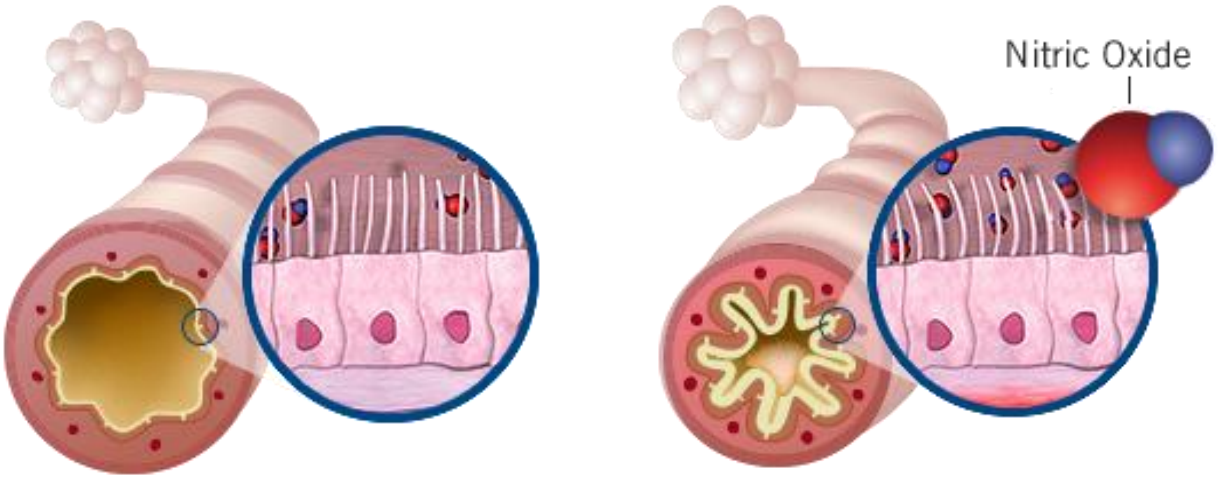
Adverse effects with montelukast

FDA requires Boxed Warning about serious mental health side effects for asthma and allergy drug montelukast (Singulair); advises restricting use for allergic rhinitis

Risks may include suicidal thoughts or actions

Fractional exhaled nitric oxide (FeNO)

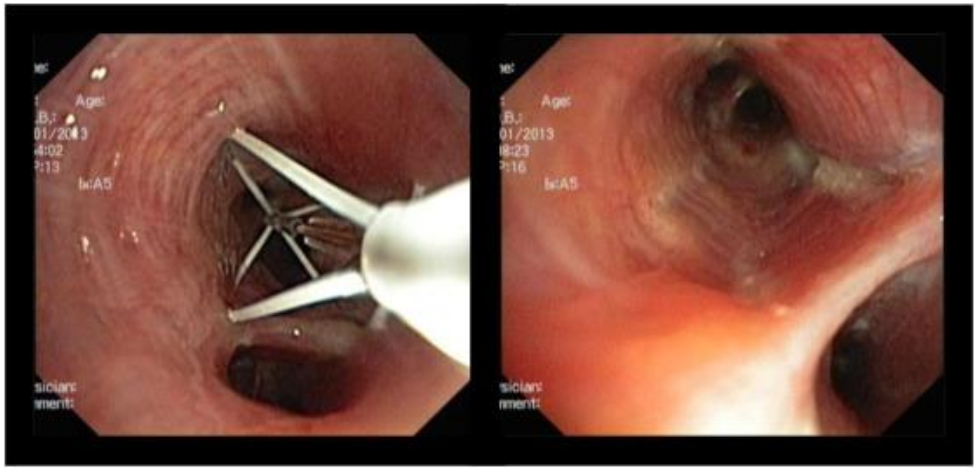
Nitric oxide can be measured in exhaled breath and can serve as a measure of the level of airway inflammation. In individuals with asthma, fractional exhaled nitric oxide (FeNO) may be a useful indicator of type 2 (T2) inflammation in the airway.



FeNO levels and inflammation			
FeNO (ppb)*	**LOW**	**INTERMEDIATE**	**HIGH**
Adults	<25	25-50	>50
Children (<12 years)	<20	20-35	>35
Th2-driven inflammation	Unlikely	Likely	Significant

Bronchial thermoplasty

Bronchial thermoplasty (BT), a procedure that uses heat to remove muscle tissue from the airways of adults with moderate to severe asthma, was developed over the last decade.



- In individuals ages 18 years and older with persistent asthma, the Expert Panel conditionally recommends *against* bronchial thermoplasty.
- Individuals ages 18 years and older with persistent asthma who place a low value on harms (short-term worsening symptoms and unknown long-term side effects) and a high value on potential benefits (improvement in quality of life, a small reduction in exacerbations) might consider bronchial thermoplasty.


GLOBAL INITIATIVE FOR
CHRONIC OBSTRUCTIVE LUNG DISEASE™

INITIAL PHARMACOLOGICAL TREATMENT

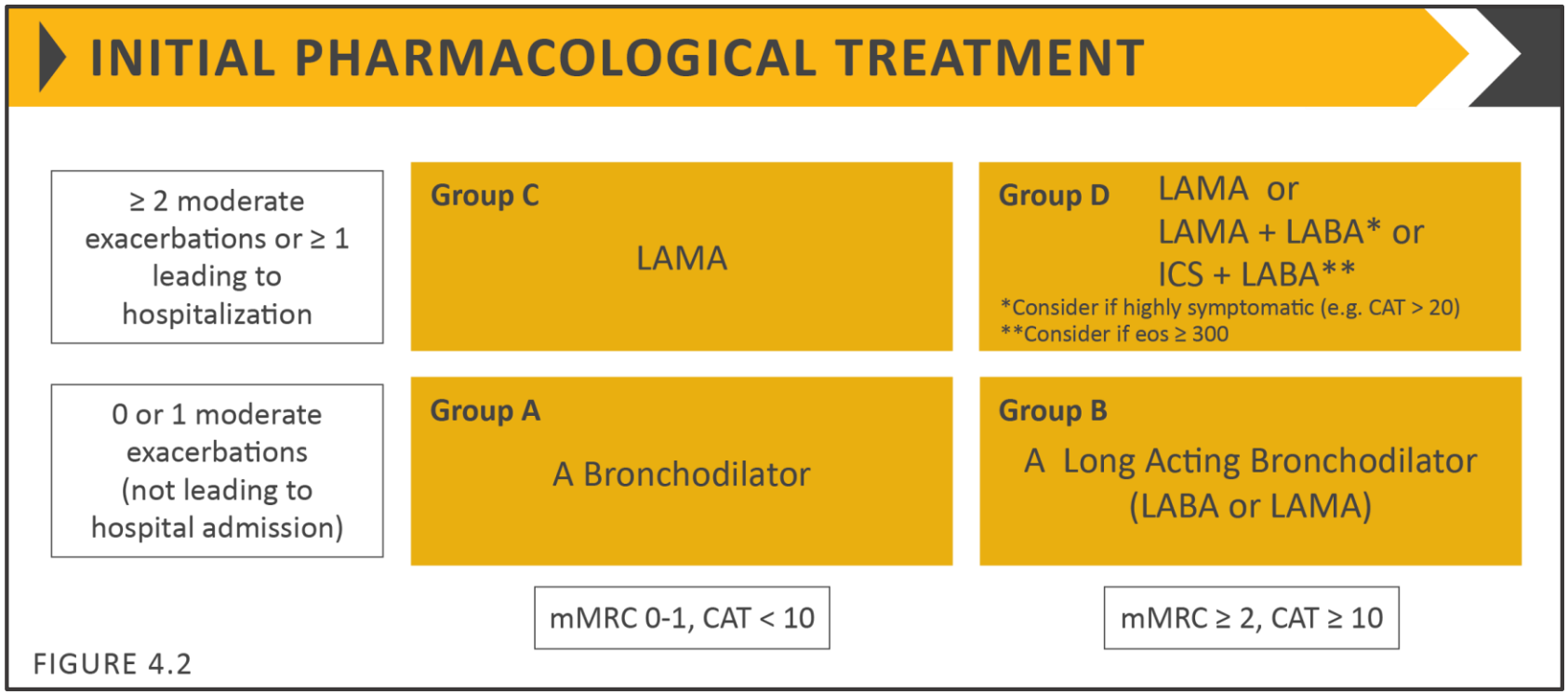


FIGURE 4.2

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Triple Inhaled Therapy at Two Glucocorticoid Doses in Moderate-to-Very-Severe COPD

Klaus F. Rabe, M.D., Ph.D., Fernando J. Martinez, M.D., Gary T. Ferguson, M.D., Chen Wang, M.D., Ph.D., Dave Singh, M.D., Jadwiga A. Wedzicha, M.D., Roopa Trivedi, M.S., Earl St. Rose, M.S., Shaila Ballal, M.S., Julie McLaren, M.D., Patrick Darken, Ph.D., Magnus Aurivillius, M.D., Ph.D., Colin Reisner, M.D., and Paul Dorinsky, M.D., for the ETHOS Investigators*

FACTORS TO CONSIDER WHEN INITIATING ICS TREATMENT

Factors to consider when initiating ICS treatment in combination with one or two long-acting bronchodilators (note the scenario is different when considering ICS withdrawal):

· STRONG SUPPORT ·	· CONSIDER USE ·	· AGAINST USE ·
• History of hospitalization(s) for exacerbations of COPD#	• 1 moderate exacerbation of COPD per year#	• Repeated pneumonia events
• ≥ 2 moderate exacerbations of COPD per year#	• Blood eosinophils 100-300 cells/µL	• Blood eosinophils <100 cells/µL
• Blood eosinophils >300 cells/µL		• History of mycobacterial infection
• History of, or concomitant, asthma		

#despite appropriate long-acting bronchodilator maintenance therapy (see Table 3.4 and Figure 4.3 for recommendations);

*note that blood eosinophils should be seen as a continuum; quoted values represent approximate cut-points; eosinophil counts are likely to fluctuate.

NEJM Journal Watch

SPECIALTIES & TOPICS | NEWS | BLOGS | CME | SPECIAL FEATURES | ARCHIVES/PDFs

MEDICAL NEWS | PHYSICIAN'S FIRST WATCH, PSYCHIATRY

July 15, 2020

Guidelines Strongly Recommend Varenicline for Smoking Cessation

By Kelly Young

Edited by Susan Sadoughi, MD, and Richard Saitz, MD, MPH, FACP, DFASAM

Varenicline is strongly recommended over the nicotine patch and bupropion for adults who are trying to quit smoking, according to new guidelines from the American Thoracic Society published in the *American Journal of Respiratory and Critical Care Medicine*.

Among the other recommendations:

- Varenicline is also strongly recommended over the patch in patients with a comorbid psychiatric condition and for those who aren't ready to quit.
- For patients who are starting a controller therapy (e.g., varenicline, nicotine patch, bupropion), a treatment duration greater than 12 weeks is strongly recommended over 6-12 weeks.
- Varenicline is recommended over e-cigarettes for smoking cessation, but the authors caution that if adverse events continue to be reported with e-cigarettes, the strength of the recommendation could change.
- In another recommendation, they say that the use of varenicline plus a nicotine patch is preferred over varenicline monotherapy.

Pulmonary rehabilitation

- Pulmonary rehabilitation improves dyspnea, health status and exercise tolerance in stable patients **(Evidence A)**.
- Pulmonary rehabilitation reduces hospitalization among patients who have had a recent exacerbation (≤4 weeks from prior hospitalization) **(Evidence B)**.
- Pulmonary rehabilitation leads to a reduction in symptoms of anxiety and depression **(Evidence A)**.

Pulmonary rehabilitation requirements

- COPD
  - FEV1/FVC <70%
  - FEV1 <80% (GOLD grade 2-4)

Pulmonary function laboratory

- Edward-Elmhurst lab is open
- COVID-19 test needed prior to performing PFT (arranged by lab)
- Testing completed in negative pressure room with air scrubber
- Albuterol MDI used and not nebulizer
- No bronchial challenge testing being completed at this time

Questions?