Gaining Control

ADHERENCE AND THE IMPACT OF POOR CONTROL
Objectives

REVIEW NAEPP TARGETED UPDATES

EXPLORE DEVICE TECHNIQUE AND ISSUES WITH ADHERENCE

REVIEW LONG-TERM SIDE EFFECTS OF SABA AND OCS OVERUSE
What does Adherence Mean?

**Vocabulary:**
- Adherence: patient focused, active, patient is involved
- Compliance: provider focused, what the provider says
- Persistence: how long you continue to take your medication

**How do you check adherence?**
- Call the pharmacy- fill vs pick-up
- Ask what medication did you take today?
- Ask how frequently they have missed doses in the last week
- Make it ok to tell you that they have missed doses

Adherence to controller regimens have consistently been found to be only 30% to 40% in clinical practice settings and only as high as 70% in well monitored clinical trial settings (Sumino & Cabana, 2013).

What Does Control Mean?

- Symptoms
- Exacerbations
- ED visits, Hospitalizations
- Quality of Life
- Refills
- Assessment

2020 NAEPP Targeted Updates:
- Definition of control was not changed

GINA 2021:
- “Mild asthma” - no distinction between mild and intermittent asthma as both are at high-risk of exacerbations and both benefit from ICS.
- “Severe asthma” - asthma that is uncontrolled despite high-dose ICS/LABA, or that requires ICS-LABA to remain controlled.

Patient Reported Outcomes:
- ACT: 19 or less
- AIRQ: 2 or greater

OVERALL: Rules of 2 still apply
- Daytime symptoms more than 2 times per week
- Nighttime symptoms more than 2 times per month
- ***Rescue filled more than 2 times per year***

(SMART therapy changes this!!)
Uncontrolled Asthma is Common

Control can be defined using criteria including:
- ≥ 2 annual systemic corticosteroids (SCS) fills
- ≥ 2 short acting beta agonist (SABA) fills
Uncontrolled Asthma: Are SABA safe?

Use of ≥6 ICS canisters per year reduces mortality by 50%²

Mortality risk escalates rapidly when >1-2 SABA canisters are used per month¹

ICS = inhaled corticosteroid, SABA = short-acting β₂-agonist
Why Decrease SABA use?

Regular use of SABA, even for 1–2 weeks, is associated with adverse effects
- b-receptor downregulation, decreased broncho-protection, rebound hyperresponsiveness, decreased bronchodilator response; increased allergic response, and increased eosinophilic airway inflammation

Higher use of SABA is associated with adverse clinical outcomes
- Dispensing of ≥3 canisters per year (i.e. daily use) is associated with higher risk of severe exacerbations
- Dispensing of ≥12 canisters per year is associated with much higher risk of death

Inhaled corticosteroids reduce the risk of asthma deaths, hospitalization and exacerbations requiring oral corticosteroids (OCS)

BUT adherence is poor, particularly in patients with mild or infrequent symptoms
NAEPP 2020 FOCUSED UPDATES

Topics covered:
- FeNO in diagnosis, medication selection, and monitoring of treatment response in asthma
- Remediation of indoor allergens in asthma management
- Adjustable medication dosing in recurrent wheezing and asthma
- Long-acting antimuscarinic agents (LAMA) in asthma management as add-ons to ICS
- Immunotherapy and the management of asthma
- Bronchial Thermoplasty (BM) in adult severe asthma
Today’s FOCUS

- Adjustable medication dosing in recurrent wheezing and asthma
- SMART Therapy and age group updates
- Long-acting antimuscarinic agents (LAMA) in asthma management as add-ons to ICS
**Children Ages 0-4 years with Recurrent Wheezing**

**KEYPOINT:** A short (7-10 day) course of daily ICS with as-needed inhaled SABA for quick-relief therapy is recommended starting at the onset of a respiratory tract infection.

**Target population:** children 0-4 with at least 3 episodes of wheezing triggered by URI in their lifetime OR 2 episodes in the past year with no symptoms between infections

**Treatment:** budesonide 1 mg twice daily for 7 days

**Potential benefits:** reduction in exacerbations requiring OCS

**Potential risks:** could affect growth. Need to carefully monitor.

**Other considerations:** Caregivers can initiate at home without a visit to their provider when they have clear instructions about when to start, how long to continue and when to call.
Children 4 years and Older with Persistent Asthma

**KEYPOINT:** Mild to moderate persistent asthmatics who are taking daily ICS (adherent) as a controller, increasing the regular daily dose for short periods is **NOT** recommended.

**KEYPOINT:** Moderate to severe persistent asthmatics who are taking low- or medium-dose ICS, the preferred treatment is ICS-formoterol used as both daily and as needed.
12 years and Older with Persistent Asthma

- **KEYPOINT**: MILD PERSISTENT ASTHMA
  - Intermittent as needed SABA + ICS
  - 2–4 puffs albuterol followed by 80–250 mcg beclomethasone every 4 hours PRN symptoms, OR
  - Daily low-dose ICS and as needed SABA
  - Think about patients with low or high symptom perception!

- **KEYPOINT**: MODERATE TO SEVERE PERSISTENT
  ICS + LABA daily AND as needed
SMART: Single Maintenance and Reliever Therapy implementation

Target Population: 4 years and older
- Patients that are not well controlled on ICS+LABA with prn SABA should try before stepping up to higher ICS.

Not advised for people using ICS + salmeterol as maintenance

Treatment: Step 3 and 4 only
- ICS + formoterol* 1-2 puffs once to twice daily
  - Step 3
    - 4-11: Symbicort 80/4.5 one puff once daily AND one puff PRN
    - 12+: Symbicort 160/4.5 one puff once or twice daily
  - Step 4
    - 4-11: Symbicort 80/4.5 one puff twice daily
    - 12+: Symbicort 160/4.5 two puffs twice or twice daily
- Maximum number of puffs per day (control + rescue):
  - PRN one puff
  - 4-11 years: 8 puffs total
  - 12 & older: 12 puffs total

Medications available:
- Budesonide/formoterol 80/4.5
- Budesonide/formoterol 160/4.5
- Symbicort 80/4.5
- Symbicort 160/4.5
- ?? Dulera 100/5*
- ?? Dulera 200/5*

*has not been studied with Dulera or combination drugs containing salmeterol
Smart Therapy continued

**BENEFITS & RISKS**
- Reduced exacerbations
- Reduced OCS use
- Reduced corticosteroid-associated adverse SE?
- Improved asthma control
- Improved quality of life
- No increased risk compared to previous recommendations

**OTHER CONSIDERATIONS**:
- Lower risk of growth suppression
- Insurance issues:
  - Cost
  - Formulary issues
  - 1-month supply may not last if used for reliever
- Medication intolerance
Long-acting Muscarinic Antagonists (LAMA) 12 and older

**KEYPOINTS:**
- Not controlled with ICS alone? Add LABA rather than LAMA
- Can not use a LABA? Add a LAMA
- Not controlled with ICS + LABA? Add a LAMA

**Potential benefits:**
- Improved asthma control
- Improved QOL

**Other considerations:**
- At risk for urinary retention
- Glaucoma
- May increase risk of harm in Black patients
- ICS + LABA and LAMA requires multiple types of devices
Other Stuff that Impact Control

POOR

- Adherence
- Device Technique
- Insurance Coverage
- Environmental controls

LEADS TO:

- Increased SABA use
- Increased OCS use
Device Techniques

Metered Dose Inhalers (MDI)
- “Puffer”- chamber/chamber with mask
- Redihaler (no chamber)

Dry Powdered Inhalers (DPI)
- RespiClick
- Digihaler
- Turbuhaler/Twisthaler
- Diskus/Wixela
- Ellipta

Respimat
- Chamber/chamber with mask
More, more, more: SABA

Regular use of β2-agonists has been shown to result in:

- poor asthma control
- Loss of functional antagonism
- enhanced exercise-bronchoconstriction
- enhanced airway inflammation

Overuse of SABAs is associated with increased asthma exacerbation frequency and mortality.

3 or more canisters/year is associated with doubled risk of an ED visit.

6. Nwaru et al, ERJ 2021
More, more, more: OCS

Exposure to 4 or more OCS prescriptions in the current year was associated with statistically significantly greater odds of having an adverse event in that year for:

- Hypertension
- Osteoporosis
- Obesity
- Type 2 Diabetes
- Gastrointestinal ulcer
- Bleeds
- Fractures
- Cataracts

More, more, more: OCS

Cumulative lifetime dose of 1 to less than 2.5 grams of OCS significantly increases the risk of adverse outcomes:

- Cerebrovascular accident
- Heart Failure
- Myocardial Infarction
- Cardio-cerebrovascular disease
- Type 2 Diabetes
- Cataracts and Glaucoma
- Osteoporosis diagnosis/Fractures
- Pneumonia
- Sleep Apnea
- Depression
- Peptic Ulcer
- Renal Impairment
Bringing it all together

Gaining control of asthma through:
- Encouraging adherence
- Teaching and regularly assessing technique
- Following guidelines

Leads to less SABA and OCS which leads to:
- Improved quality of life
- Decreased risk of poor outcomes
- Decreased risk of life-altering diagnoses
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