Asthma Medications and Management: Empowering Patients to Learn Their Options

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ASTHMA MEDICATIONS AND MANAGEMENT: EMPOWERING PATIENTS TO LEARN THEIR OPTIONS

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DISCLOSURES

Speakers Bureaus

Grifols: AAT
AstraZeneca: Asthma

Advisory Boards

Takada: AAT
AstraZeneca: Asthma
OBJECTIVES

• Understand the clinical nature of asthma
• Briefly review the 2023 GINA guideline asthma updates that are relevant to medical management
• Discuss how to empower patients in their care
ASTHMA: PAST, PRESENT, & FUTURE
ASTHMA’S PAST

2500 BC asthma was first described as whistling sound while breathing

300 BC Hippocrates termed Asthma meaning respiratory distress & panting caused by triggers.

1905 asthma treatment was then as it is now: acute rescue treatment, controller treatment, and prevention of long-term complications.
ASTHMA’S PRESENT

Worldwide: 262 million affected & 455,000 deaths from asthma (2019)

Approximately 10 people in the U.S. die from asthma each day

In 2021, 3,517 people died from asthma.

In 2020, deaths due to asthma rose for the first time in 20 years.

https://www.who.int/news-room/fact-sheets/detail/asthma

https://aafa.org/asthma/asthma-facts/
GINA 2023: WHAT’S NEW

New Definition:

“Asthma is a heterogeneous disease, usually characterized by chronic airway inflammation. It is defined by the history of respiratory symptoms, such as wheeze, shortness of breath, chest tightness and cough that very over time and in intensity together with variable expiratory air flow limitation” - GINA 2023 Definition of Asthma

How is that relevant to practice & patients?
GINA PHENOTYPES

- **Childhood Onset: allergic/exercise**
- **Adult Onset Atopic**
  - hx: allergic rhinitis in childhood. More IgE driven
- **Adult Onset Non-atopic**
  - Post viral/occupational or other toxic exposure hx
- **Hypereosinophilic Adult Onset (Eos gone wild!)**
  - +/- Atopy, +/- AERD, +/- nasal polyps
- **Other:**
  - Asthma Associated with Obesity
  - Perimenopausal Asthma (neutrophilic action)
  - Obstructive Asthma
  - Not ACOS

Understanding phenotypes helps patients correlate their “type” of asthma and why it behaves the way it does.

Helps providers focus on treatment options.
GINA 2023 CLINICAL UPDATES

Diagnostics:

*Significant BD Response updated:*  
+10% of Predicted Value (FEV1 or FVC) vs. 12% and 200mls (don’t get me started on GLI-Global)

*FeNO* finally has a place...but not by itself  
(A normal blow = FeNO)

Terms:

*AIR PRN* (Anti-Inflammatory Reliever) or *AIR-only*  
ICS (formoterol or budesonide) plus SABA  
Airsupra (Albuterol-Budesonide 90mcg/80mcg per puff)

*MART* (Maintenance And Reliever Therapy)  
*SMART* (Single Maintenance And Reliever Therapy)  
*Maintenance* not Controller  
*Apparently Mild Asthma* not Mild Asthma
AIRSUPRA (ALBUTEROL 90MCG/BUDESONIDE 80MCG) (AIR)

- 18 years old and older
- 2 puffs as needed for asthma symptoms
- Max 6 puffs per day
- Add on therapy, not a stand alone therapy
- Same side effects as albuterol and budesonide alone
- Oral hygiene necessary
- Hit the US market in October 2023. Insurance coverage?
meta-analysis of 5 randomized clinical trials

4863 patients with poorly controlled asthma

SMART vs step up or continuation of GINA treatment step with ICS-LABA plus SABA

Who had the longer time to first severe asthma exacerbation?

Switching to SMART at either step 3 or 4 GINA was associated with a prolonged time to first severe asthma exacerbation, with a 29% reduced risk compared with stepping up to step 4 ICS/LABA maintenance plus SABA reliever (hazard ratio, 0.71; 95% CI, 0.52-0.97).

https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2789512
<table>
<thead>
<tr>
<th>Step</th>
<th>Age (years)</th>
<th>Medication and device (check patient can use inhaler)</th>
<th>Metered dose (mcg/inhalation)</th>
<th>Delivered dose (mcg/inhalation)</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steps 1–2 (AIR-only)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–11</td>
<td></td>
<td>(No evidence)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>12–17</td>
<td>≥18</td>
<td>Budesonide-formoterol DPI</td>
<td>200/6</td>
<td>160/4.5</td>
<td>1 inhalation whenever needed</td>
</tr>
<tr>
<td><strong>Step 3 MART</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–11</td>
<td></td>
<td>Budesonide-formoterol DPI</td>
<td>100/6</td>
<td>80/4.5</td>
<td>1 inhalation once daily, PLUS 1 inhalation whenever needed</td>
</tr>
<tr>
<td>12–17</td>
<td>≥18</td>
<td>Budesonide-formoterol DPI</td>
<td>200/6</td>
<td>160/4.5</td>
<td>1 inhalation once or twice daily, PLUS 1 inhalation whenever needed</td>
</tr>
<tr>
<td>≥18</td>
<td></td>
<td>BDP-formoterol pMDI</td>
<td>100/6</td>
<td>84.6/5.0</td>
<td></td>
</tr>
<tr>
<td><strong>Step 4 MART</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<tr>
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<td>Budesonide-formoterol DPI</td>
<td>200/6</td>
<td>160/4.5</td>
<td>2 inhalations twice daily, PLUS 1 inhalation whenever needed</td>
</tr>
<tr>
<td>≥18</td>
<td></td>
<td>BDP-formoterol pMDI</td>
<td>100/6</td>
<td>84.6/5.0</td>
<td></td>
</tr>
<tr>
<td><strong>Step 5 MART</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6–11</td>
<td></td>
<td>(No evidence)</td>
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<td>2 inhalations twice daily, PLUS 1 inhalation whenever needed</td>
</tr>
</tbody>
</table>

DPI: dry powder inhaler; pMDI: pressurized metered dose inhaler. For budesonide-formoterol pMDI with 3 mcg [2.25 mcg] formoterol, use double number of puffs.
# Current Biologic Options

<table>
<thead>
<tr>
<th>Biologics Comparison</th>
<th>Xolair™ (omalizumab)</th>
<th>Nucala™ (mepolizumab)</th>
<th>Fasenra™ (benralizumab)</th>
<th>CinquaIR™ (resilizumab)</th>
<th>Dupixent™ (dupilumab)</th>
<th>Tezspire™ (tezepelumab)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturer</td>
<td>Genentech</td>
<td>GSK/Novartis</td>
<td>AstraZeneca</td>
<td>Teva</td>
<td>Sanofi/Genzyme</td>
<td>AstraZeneca</td>
</tr>
<tr>
<td>Approved age</td>
<td>≥ 6 years</td>
<td>≥ 6 years</td>
<td>≥ 12 years</td>
<td>≥ 18 years</td>
<td>≥ 6 years</td>
<td>≥ 12 years</td>
</tr>
<tr>
<td>Number of doses/year</td>
<td>12-26</td>
<td>12</td>
<td>8</td>
<td>12</td>
<td>12-28</td>
<td>12</td>
</tr>
<tr>
<td>Dosing</td>
<td>Based on total IgE and weight SQ every 2-4 weeks</td>
<td>≥12: 100 mg SQ every 4 weeks 6-11: 40 mg SQ every 4 weeks</td>
<td>30 mg SQ every 4 weeks x 3 doses, then 30 mg SQ every 4 weeks</td>
<td>3 mg/kg IV every 4 weeks</td>
<td>Dosing depends on age, weight, indication: every 2-4 weeks</td>
<td>210mg SQ every 4 weeks</td>
</tr>
<tr>
<td>Available as pre-filled syringe</td>
<td>Yes (75 mg &amp; 150 mg)</td>
<td>Yes (100 mg)</td>
<td>Yes (30 mg)</td>
<td>No</td>
<td>Yes (200 mg &amp; 300 mg)</td>
<td>Yes</td>
</tr>
<tr>
<td>Available as auto-injector</td>
<td>No</td>
<td>Yes (100 mg)</td>
<td>Yes (30 mg)</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Mechanism of Action</td>
<td>IgE antagonist</td>
<td>IL-5 antagonist</td>
<td>IL-5 antagonist</td>
<td>IL-5 antagonist</td>
<td>IL-4 and IL-13 dual inhibitor</td>
<td>Thymic stromal lymphopoietin (TSLP) inhibitor</td>
</tr>
<tr>
<td>Qualifying lab data</td>
<td>Total IgE ≥ 30 IU/mL</td>
<td>Eosinophils ≥ 150 cells/µL</td>
<td>Eosinophils ≥ 150 cells/µL</td>
<td>Eosinophils ≥ 400 cells/µL</td>
<td>None required but benefits seen with Eosinophils ≥ 150-300 cells/µL</td>
<td>None required</td>
</tr>
<tr>
<td>Reduction (%) in Exacerbation</td>
<td>48%-58% reduction at 16 weeks</td>
<td>53% reduction at 32 weeks (MENSA trial) 58% reduction at 24 weeks (MUSCA trial)</td>
<td>51% reduction at 48 weeks (SIRROCO trial)</td>
<td>50-59% reduction at 52 weeks (Trial 1 &amp; 2)</td>
<td>Trial 1: 71-81% reduction at 24 weeks  Trial 2: 66-67% reduction at 52 weeks (eos≥300) OR 46-48% reduction at 52 weeks (eos≥150)</td>
<td>Reduced exacerbations by up to 75% (PATHWAY trial) and 56% (NAVIGATOR trial)</td>
</tr>
<tr>
<td>Reduction (%) in OCS dose</td>
<td>75% reduction</td>
<td>50% reduction (SIRIUS trial)</td>
<td>75% reduction (ZONDA trial)</td>
<td>N/A</td>
<td>28% reduction (VENTURE trial)</td>
<td>No significant reduction (SOURCE trial)</td>
</tr>
<tr>
<td>Patient assistance program</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Opportunity for Shared Decision Making Which Improves:

- QOL
- Outcomes
- Adherence

Opportunity for Patient Empowerment

- ACT/AirQ
- Peak Flow Monitoring
- Rules of 2

Shared Decision Making Tools:
ASTHMA’S FUTURE: WHAT’S TO COME…

New Phenotypes:

Rheumatoid arthritis??
Asthmatic granulomatosis

New Type 2 biomarkers:

More interleukins to memorize
Neutrophilic asthma therapies?

Drugs:

- In the works:
  - Masitinib, Budesonide/Formoterol, Ensifentrine, Bedoradrine, Tregalizumab, Lumicitabine, Ifetroban, Halix(TM) Albuterol, Rilzabrutinib, Dexpramipexole, Voriconazole Inhalation Powder, Nomacopan, Anti mlgE+B-cell
  - Dexpramipexole to inhibit the maturation and release of eosinophils in bone marrow
  - UPB-101: a monoclonal antibody blocking (TLSP-R) inhibiting TSLP

- Going generic:
  - Spiriva Handihaler

- Going away:
  - Flovent Brand diskus and HFA will be discontinued after 12/31/2023
