Asthma

A review of medications, quality measures and recommendations

Authored By: Farhan Hasan, Pharm.D.

Objectives

- Review asthma treatment algorithm & drug classes
- Review pharmacy HEDIS measures
- Review MHS preferred drug list (PDL)
- Review of biologics indicated for the treatment of asthma
- Summarize best asthma practices

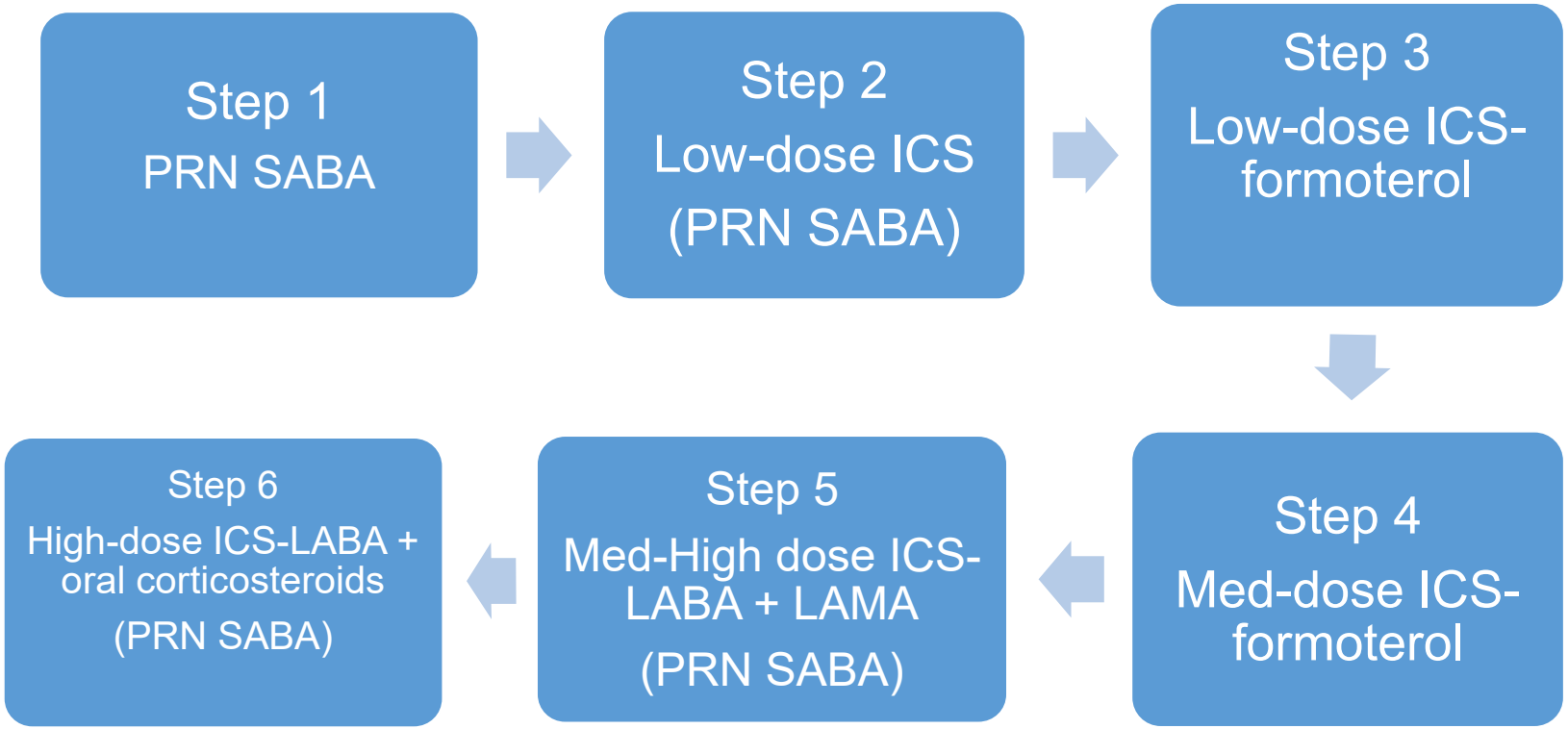
Classifying Asthma Severity & Treatment

- Classification of asthma severity guides intensity/steps of initial treatment.
- Long term asthma management should focus on reducing impairment and reducing risk.
  - Initiating, monitoring and adjusting treatment follows a step-wise and continuous process.

Relievers vs. Controllers

- Relievers (Rescue Drugs):
  - Inhaled short-acting beta-2 agonists (SABA)
  - Systemic steroids
- Controllers (Maintenance Drugs):
  - Inhaled corticosteroids (ICS)
  - Inhaled long-acting beta-2 agonists (LABA)
  - Leukotriene receptor antagonists (LTRA)
  - Inhaled long-acting muscarinic antagonist/anticholinergics (LAMA)
- Biologics/monoclonal antibodies

General Preferred Treatment Algorithm per NHLBI Guidelines



Detailed Treatment Algorithm per NHLBI

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)**	

Pharmacy HEDIS Measures

- Tool used to measure performance on important dimensions of care and service-developed and maintained by NCQA
- Used for health plan accreditation
- Measures are specifically defined, which makes it possible to compare performance against other health plans (“report cards”)
  - Two specific respiratory measures: AMR and MMA
- Asthma control HEDIS measure is part of the pay for performance program
  - Providers are incentivized to help our members achieve asthma control
  - Monthly reports are available to providers on the MHS portal

AMR-Asthma Medication Ratio

- What?
  - Ratio of controller medication to total asthma mediation used during measurement year
  - Ratio of 0.5 or greater is reported, i.e. at least 50% of a patients medication regimen should be controllers (higher number is better)
  - Measured for Medicaid & Marketplace line of business
- Who?
  - Members who are 5-64 years old with asthma

MMA-Medication Management for People with Asthma

- What?
  - % of asthma members during the measurement year who were dispensed medications
  - Two rates are reported:
    - % of members who remained on controllers for at least 50% of their treatment period
    - % of members who remained on controllers for at least 75% of their treatment period
  - Measured for Medicaid & Ambetter line of business
- Who?
  - 5-64 year old moderate to severe persistent asthmatic members who were dispensed medications
  - Excludes members with acute respiratory failure, COPD, CF, emphysema

Keeping the Rates High

- AMR of less than 0.5 indicates that patients can benefit from a discussion with their physicians.
  - They can be reevaluated and educated on adherence to their controller medication or other factors causing them to use their rescue medication more frequently.
  - As the frequency of the use of rescue medications decreases and the fills of controller medications increases, both the AMR and the MMA ratio & percentage increases!

Medicaid Preferred Formulary

Medication Options	Beta Adrenergics (SABA/LABA)	Steroid Inhalants (ICS)	Bronchodilators-Anticholinergics (SAMA/LAMA)	Antiasthmatic & Bronchodilator Agents	Biologics	Other agents
Preferred Formulary	Albuterol	Arnuity Ellipta	Atrovent	Budesonide-Formoterol	Cinqair	Cromolyn
	Levalbuterol	Budesonide	Incruse Ellipta (LAMA)	Combivent Respimat	Fasenra	Elixophyllin
	ProAir	Flovent	Ipratropium	Fluticasone-Salmeterol	Nucala	Montelukast
	Proventil	Pulmicort	Spiriva Respimat (LAMA)	Ipratropium-Albuterol	Xolair	Theophylline
	Serevent (LABA)	Qvar		Wixela		Theo-24
	Terbutaline					
	Ventolin					

Ambetter Formulary

Medication Options	Beta Adrenergics (SABA/LABA)	Steroid Inhalants (ICS)	Bronchodilators-Anticholinergics (SAMA/LAMA)	Antiasthmatic & Bronchodilator Agents	Biologics	Other agents
Preferred Formulary	Albuterol	Arnuity Ellipta	Atrovent	Advair HFA	Fasenra	Aminophylline
	Levalbuterol	Budesonide	Incruse Ellipta (LAMA)	Anoro Ellipta	Nucala	Cromolyn
	Serevent (LABA)	Flovent	Ipratropium	Budesonide-Formoterol	Xolair	Elixophyllin
	Terbutaline	Pulmicort	Spiriva Handihaler (LAMA)	Fluticasone-Salmeterol		Metaproterenol
	Xopenex	Qvar	Spiriva Respimat (LAMA)	Ipratropium-Albuterol		Montelukast
				Symbicort		Theophylline
				Trelegy Ellipta		Zafirlukast
						Zileuton

Allwell Formulary

Medication Options	Beta Adrenergics (SABA/LABA)	Steroid Inhalants (ICS)	Bronchodilators-Anticholinergics (SAMA/LAMA)	Antiasthmatic & Bronchodilator Agents	Biologics	Other agents
Formulary Allwell	Albuterol	Arnuity Ellipta	Atrovent	Advair Diskus	Fasenra	Cromolyn
	Levalbuterol	Budesonide	Incruse Ellipta (LAMA)	Anoro Ellipta	Xolair	Montelukast
	Serevent (LABA)	Flovent	Ipratropium	Breo Ellipta		Theophylline
	Terbutaline	Pulmicort		Combivent Respimat		Theo-24
	Ventolin			Symbicort		Zafirlukast
				Trelegy Ellipta		

Biologic Therapy/Monoclonal Antibodies

- 10-20% of the total asthmatic patients are in the severe refractory stage (stage 5)
  - They have tried conventional therapy and it does not adequately control symptoms
- Biologic therapy is a change towards targeted therapies to fit patient specific disease

IgE Antibody

- IgE is one of the key contributors to the proinflammatory cascade in allergic asthma
- omalizumab (Xolair)-only FDA approved anti-IgE therapy
  - binds to human IgE's high affinity Fc receptor
    - prevents the binding of IgE to a variety of cells associated with the allergic response
    - lowers free serum IgE concentrations
- quilizumab & ligelizumab: in clinical trials
  - ligelilzumab binds to IgE with higher affinity than omalizumab

IL-5 Antibody

- IL-5 is a proinflammatory cytokine secreted by T lymphocytes, mast cells and eosinophils
  - IL-5s are highly involved in regulation of eosinophil differentiation, proliferation and activation
- IL-5 antibody inhibits IL-5 signaling and reduces the production and survival of eosinophils
  - available agents:
    - mepolizumab (Nucala)
    - reslizumab (Cinqair)
    - benralizumab (Fasenra)

IL-4/IL-13 Antibody

- Inhibits IL-4 and IL-13 cytokine-induced inflammatory response, including the release of proinflammatory cytokines, chemokines, and IgE
  - dupilumab - approved for atopic dermatitis
    - under investigation (phase 3) for the treatment of persistent asthma
  - pitrakinra – under investigation (phase 2)
    - it is an inhaled therapy
  - AMG-317-under investigation (phase 2)

Other Investigational Biologics

- Anti-IL-9 (IL-9 binds to mast cells within the inflammatory cascade).
  - MEDI-528 (phase 2)
- Anti-IL-13
  - lebrikizumab (phase 3)
  - tralokinumab (phase 3)
- Anti-IL-17 (IL-17 stimulates production of Th17 cells ((involved in propagation of immune response))
  - secukinumab (phase 2 for asthma) approved for psoriasis
  - brodalumab (phase 2 for asthma) approved for psoriasis

Best Practices Summary

- Good asthma control is achieved when a patient has achieved minimization of both impairment and risk:
  - **Impairment** – typical frequency of daytime/nighttime symptoms; lung function; activity impairment; activity avoidance; rescue medication use
  - **Risk** – frequency and severity of exacerbation

Uncontrolled Asthma?

- The presence of the following should indicate to the provider that the patient has **uncontrolled** asthma:
  - Hospitalization
  - Multiple ED visits per year
  - >1 systemic steroid course per year
  - Activity limitation **OR** activity avoidance
  - Frequent albuterol usage (e.g. frequent albuterol refills)

Poor Control?

- Poor control can be caused by a number of factors, including (but not limited to):
  - **Adherence**
  - **Device technique**
  - **Spacer usage/technique (for HFA inhalers)**
  - Environmental exposures
  - Comorbidities (allergic rhinitis, anxiety, obesity, OSA, reflux, vocal cord dysfunction)

Best Practices

- Examine **refill history** via pharmacy data, AMR, and/or MMA
- Open, non-judgmental conversation with patient/family regarding refill data and potential adherence issue
- Identify and address **barriers** to getting/taking medications
- Review inhaler **technique at each visit**
  - Utilize **teach back** method
- Step up therapy if not well controlled
- Can consider a step down in therapy if well controlled > 3 months (for some patients longer period of control before stepping down will be appropriate)

Best Practices

- Consider referral to asthma specialist at step 3-4 of therapy, particularly if control not improving.
- Explore contributing factors
- Specialist may consider add on therapy/biologic agent:
  - Xolair, Nucala, Fasenra