University Health System

Omalizumab (Xolair®) Guideline for Use

INDICATION: Patients above 12 years of age with severe, persistent allergic asthma with high levels of serum IgE and recurrent exacerbations that are not controlled with high dose inhaled corticosteroids and long acting beta$_2$-agonists.

CRITERIA:

- Severe asthma: multiple exacerbations (i.e. > 2 exacerbations) in the past 6 months where systemic steroids were required or presence of daily symptoms despite aggressive therapy.
- High dose inhaled corticosteroids/long acting beta$_2$-agonist have been tried without improvement in symptoms or frequency of exacerbations.
- A total serum IgE level between 30-700 IU/mL, which is the range over which the drug can bind to enough free IgE to ensure a therapeutic effect.
- Positive testing for perennial allergens
- The patient must be an established patient of the Downtown Pulmonary Clinic at the Brady Green Campus.

SELECTION of PATIENTS:

- We will follow the stepwise approach delineated by the Asthma Guidelines (Global Initiative for Asthma [GINA] and Guidelines for the Diagnosis and Management of Asthma [NHLBI]. Please see attached documentation (p. 2).
- Patients that meet the above criteria will be initiated on therapy after they understand the side effects, potential complications and sign an informed consent.
- Patients must demonstrate compliance with clinic appointments before they are considered for therapy.

DOSING and ADMINISTRATION OF THE MEDICATION

- Patients should be dosed according to the pre-established dosing tables provided by the manufacturer (see below). Dosing is based on weight and IgE levels. IgE levels must be recent (i.e. within 3 months).
- The medication will be administered at the Infusion Center at the Brady Green Campus/UHS by a Registered Nurse. The medication is given subcutaneously every 2-4 weeks depending on the required dosing. The range is 150mg to 375mg every 2 or 4 weeks.
- After the first dose the patients will be observed for 2 hours in the clinic to monitor for anaphylaxis. If the patient tolerates the medication, on the next administration the patient will require an observation period of 45 minutes. All patients will receive an epinephrine auto injection device as a safety precaution in case there is a delayed reaction.

MONITORING for EFFICACY

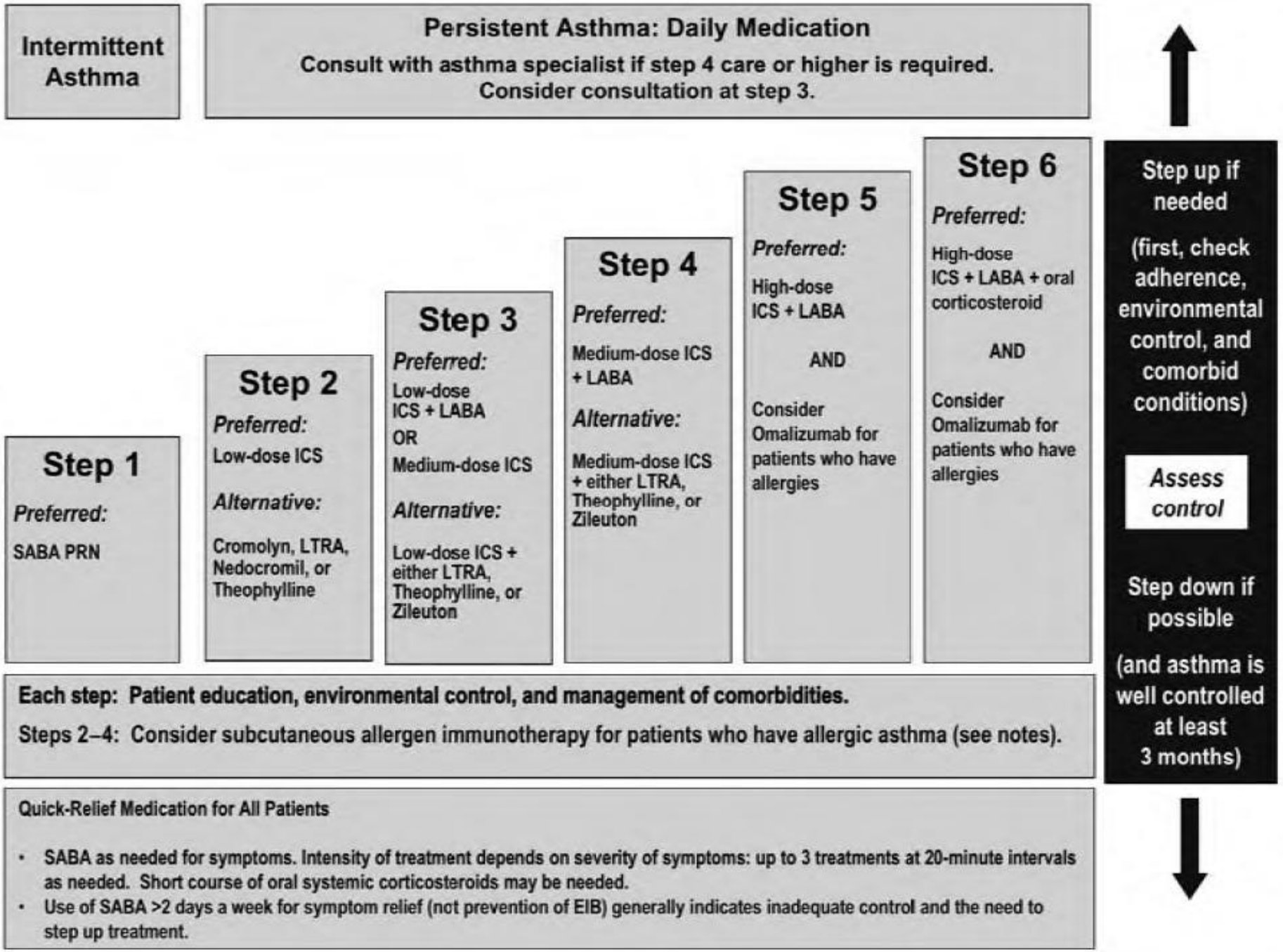
- The benefit of omalizumab therapy can be seen up to six months after therapy. The number of instances where systemic steroids were used will be documented (i.e., exacerbations, ER visits, hospitalizations). If the patient has not improved after 6 months, therapy will be stopped.

MONITORING for TOXICITY and side effects

- Omalizumab has not been shown to cause any liver or renal impairment. There is no need to monitor liver function tests or renal function during therapy.
- A minority of patients may experience fevers, arthralgias and rash after administration.
- A minority of patients may experience a local reaction at the site of injection.
- Anaphylaxis has been rarely reported after therapy (incidence of 0.1-0.2%). Patients will be observed after therapy in the Infusion Center.
- Although malignancy has been a concern in the initial studies, a large number of studies over the past 10 years have not shown an increase risk of malignancy. A pooled analysis of 7,789 patients did not show any association of omalizumab and malignancy (Ref 1).

CONTRAINDICATIONS

- Omalizumab is contraindicated in patients that had a severe hypersensitivity reaction to the medication
- Omalizumab is considered safe during pregnancy. Preliminary data from the EXPECT Registry has shown no increased risk for any complication during pregnancy or increased risk of fetal anomalies. Omalizumab probably should not be started during pregnancy, but if omalizumab has achieved asthma control and the patient becomes pregnant, the benefits may outweigh the risks of uncontrolled asthma.


Intermittent Asthma
Persistent Asthma: Daily Medication
Consult with asthma specialist if step 4 care or higher is required.
Consider consultation at step 3.
Step 1
Preferred:
SABA PRN
Step 2
Preferred:
Low-dose ICS
Alternative:
Cromolyn, LTRA, Nedocromil, or Theophylline
Step 3
Preferred:
Low-dose ICS + LABA
OR
Medium-dose ICS
Alternative:
Low-dose ICS + either LTRA, Theophylline, or Zileuton
Step 4
Preferred:
Medium-dose ICS + LABA
Alternative:
Medium-dose ICS + either LTRA, Theophylline, or Zileuton
Step 5
Preferred:
High-dose ICS + LABA
AND
Consider Omalizumab for patients who have allergies
Step 6
Preferred:
High-dose ICS + LABA + oral corticosteroid
AND
Consider Omalizumab for patients who have allergies
Step up if needed
(first, check adherence, environmental control, and comorbid conditions)
Assess control
Step down if possible
(and asthma is well controlled at least 3 months)
Each step: Patient education, environmental control, and management of comorbidities.
Steps 2–4: Consider subcutaneous allergen immunotherapy for patients who have allergic asthma (see notes).
Quick-Relief Medication for All Patients
• SABA as needed for symptoms. Intensity of treatment depends on severity of symptoms: up to 3 treatments at 20-minute intervals as needed. Short course of oral systemic corticosteroids may be needed.
• Use of SABA >2 days a week for symptom relief (not prevention of EIB) generally indicates inadequate control and the need to step up treatment.

DOSING TABLE 1 For administration every 4 weeks

PRE-TREATMENT SERUM IGE (IU/ML)	BODY WEIGHT (KG)			
	30-60	> 60-70	> 70-90	> 90-150
≥ 30-100	150	150	150	300
> 100-200	300	300	300	
> 200-300	300	SEE TABLE 2		
> 300-400				
> 400-500				
> 500-600				

DOSING TABLE 2 For administration every 4 weeks

PRE-TREATMENT SERUM IGE (IU/ML)	BODY WEIGHT (KG)			
	30-60	> 60-70	> 70-90	> 90-150
≥ 30-100	SEE TABLE 1			
> 100-200				225
> 200-300		225	225	300
> 300-400	225	225	300	
> 400-500	300	300	375	
> 500-600	300	375	DO NOT DOSE	
> 600-700	375			

Doses >150 mg should be divided over more than one injection site (eg, 225 mg or 300 mg administered as two injections, 375 mg administered as three injections). Injections may take 5-10 seconds to administer (solution is slightly viscous).

References:

1. Busse W, Buhl R, Fernandez Vidaurre C, Blogg M, Zhu J, Eisner MD, Canvin J. Omalizumab and the risk of malignancy: results from a pooled analysis. J Allergy Clin Immunol. 2012 Apr;129(4):983-9.e6.
2. National Heart, Lung and Blood Institute. Expert Panel Report 3: Guidelines for the Diagnosis and management of Asthma – summary report 2007. Available at: http://www.nhlbi.nih.gov/guidelines/asthma/asthsumm.pdf.
3. Omalizumab in Lexicomp™, Hudson, Ohio: Lexi-Comp, Inc.; July 2, 2013.
4. Barnes, PJ. Anti-IgE Therapy. In: UpToDate, Basow, DS (Ed), UpToDate, Waltham, MA, July 2013.

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