Common Problems in Diagnosis and Management of Allergic disease

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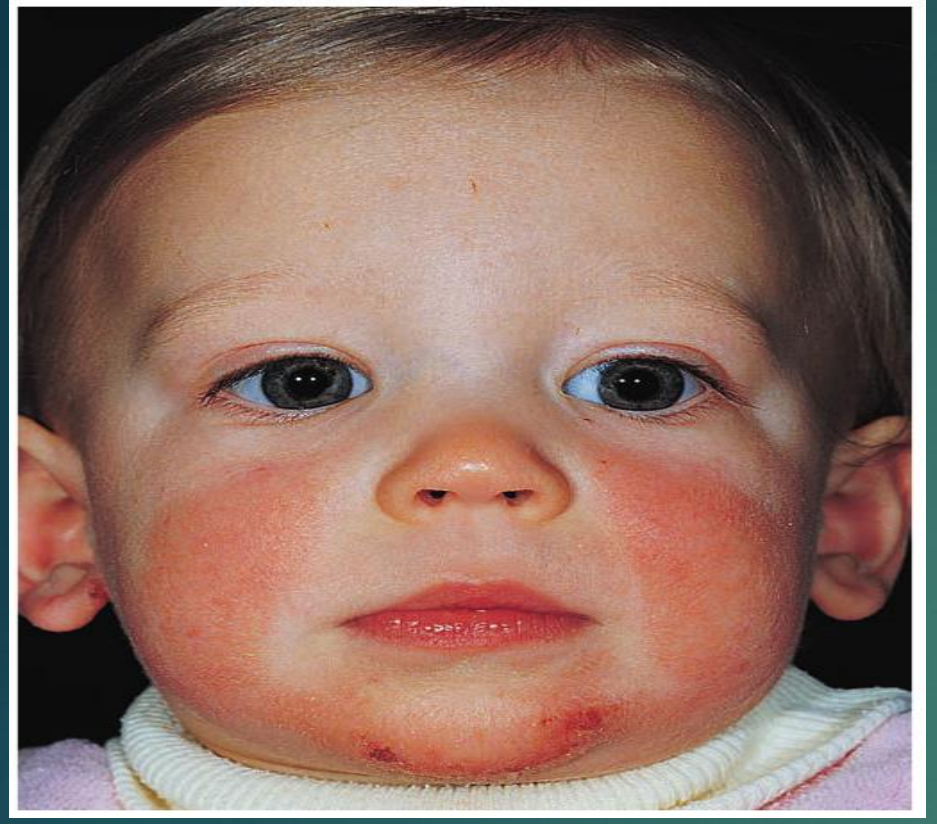
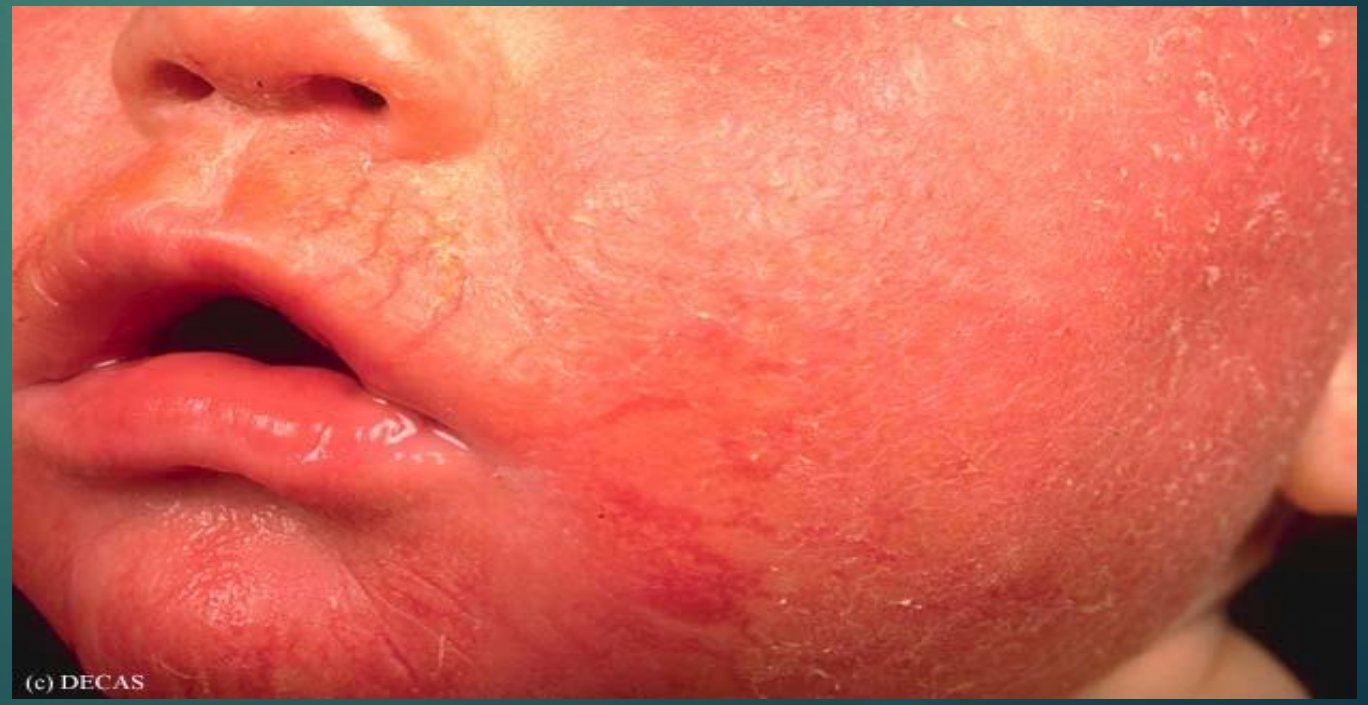
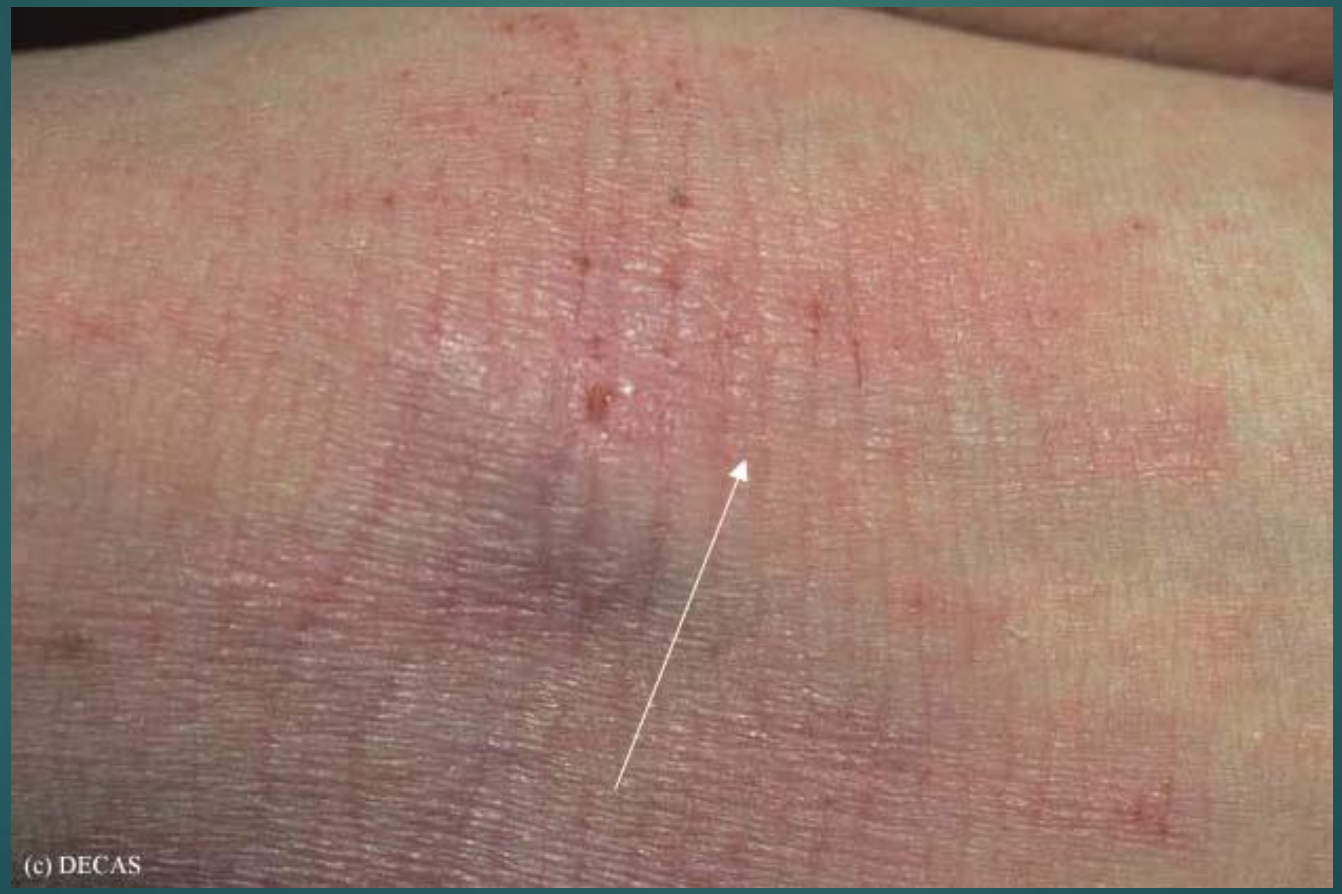
1

6 months breast feed infant girl with skin lesions from 4 months ago that have fluctuation over days with redness and dryness



Dryness and Pruritis




(c) DECAS

Mother encouraged to avoid caws milk products and less bath for infant

Med: Atopix Irox daily in lesions- Syr hydroxyzine 1.5 Bid- hydrocortison for face and trunk only If sever redness exist

After 1 month lesions a little better; mother encouraged to avoid beef. Nuts and grains

In next visit RIDA lab test done with result of: milk- egg- tomato- walnut-additive positive +1

Mother diet restricted again and not start these foods in infant
Medications: Megacort local in trunk and face lesions- less bath- Neotadin 2 cc Bid-start of HA Formula specially for supplementary food

Q1: Change of breast milk to formula?
Q2: Elimination Diet and role of Allergy in AD
Q3: What about if infant was formula feed or have proctocolitis?
Q4: Treatment?
Q5: start of foods regularly?

In 2 years old have pruritis with tomato, berry, eggplant sometimes. Skin prick test negative

Is this allergy?

AD and allergy?

- Dry skin
- Micro fissure
- Epidermal defect

portal of entry →

irritants

allergens

pathogens

- So it is clear that allergy has a fundamental role
- but some another facts

When to search for allergy?(food allergy)

- Severity
- Early onset
- Treatment failure

- an important fact in allergy:
- avoidance or elimination is the main strategy in allergy

- The main question in this strategy?????
-
- what should be eliminated?

Detecting the allergens? “cause-and effect” relation

- History → delay onset reaction → confusing & difficult
- Skin prick test → cross reactivity, sensitization → interpretation
- Serum tests → expensive, not specific, cross reactivity, sensitization → interpretation
- Atopic patch test → not standard, not reproducible
- Oral food challenge → difficult in procedure and interpretation(“gold standard),drug discontinuing
- Elimination diet → choosing the correct allergen is challenging, elimination diet of 4 to 6 weeks

The goal: optimum management(Max results, Min side effects)
Allergy is important in developing and maintenance of AD

Allergy weight is different AD patients

Allergy evaluation and treatment has not the similar efficacy in all the AD

Allergy especially Food allergy is important in moderate to severe early onset(under one Y.O) not in mild

Healthcare professionals should consider a diagnosis of food allery in children with atopic eczema who have reacted previously to a food with immediate symptoms, or in infants and young children with moderate or severe atopic eczema that has not been controlled by optimum management, particularly if associated with gut dysmotility (colic, vomiting, altered bowel habit) or failure to thrive

Healthcare professionals should offer a 6–8 week trial of an extensively hydrolysed protein formula or amino acid formula in place of cow's milk formula for bottle-fed infants aged under 6 months with moderate or severe atopic eczema that has not been controlled by optimal treatment with emollients and mild topical corticosteroids.

Diets based on unmodified proteins of other species' milk (for example, goat's milk, sheep's milk) or partially hydrolysed formulas should not be used in children with atopic eczema for the management of suspected cow's milk allergy. (HA milk just as prophylaxis in high risk formula feeding newborn)

Healthcare professionals should inform women who are breastfeeding children with atopic eczema that it is not known whether altering the mother's diet is effective in reducing the severity of the condition. (unless with strongly suspected)

Table 7.4 Treatment options

Mild atopic eczema	Moderate atopic eczema	Severe atopic eczema
Emollients	Emollients	Emollients
Mild potency topical corticosteroids	Moderate potency topical corticosteroids	Potent topical corticosteroids
	Topical calcineurin inhibitors	Topical calcineurin inhibitors
	Bandages	Bandages
		Phototherapy
		Systemic therapy

Table 13.2 Representative topical corticosteroid preparations

Group 1*	Clobetasol propionate (Temovate) 0.05% ointment/cream Betamethasone dipropionate (Diprolene) 0.05% ointment/cream Halobetasol propionate (Ultravate) 0.05% ointment/cream
Group 2	Mometasone furoate (Elocon) 0.1% ointment Halcinonide (Halog) 0.1% cream Fluocinonide (Lidex) 0.05% ointment/cream Desoximetasone (Topicort) 0.25% ointment/cream
Group 3	Fluticasone propionate (Cutivate) 0.005% ointment Halcinonide (Halog) 0.1% ointment Betamethasone valerate (Valisone) 0.1% ointment
Group 4	Mometasone furoate (Elocon) 0.1% cream Triamcinolone acetonide (Kenalog) 0.1% ointment/cream Fluocinolone acetonide (Synalar) 0.025% ointment
Group 5	Fluocinolone acetonide (Synalar) 0.025% cream Hydrocortisone valerate (Westcort) 0.2% ointment
Group 6	Desonide (DesOwen) 0.05% ointment/ cream/lotion Alclometasone dipropionate (Aclovate) 0.05% ointment/cream
Group 7	Hydrocortisone (Hytone) 2.5% & 1% ointment/cream

Topical corticosteroids:

For patients with mild atopic dermatitis emollients should be used multiple times per day in conjunction with topical mild corticosteroids.
Emollients can be applied before or after topical corticosteroids.

use mild potency for the face and neck, except for short-term (3–5 days) use of moderate potency for severe flares

use moderate or potent preparations for short periods only (7–14 days) for flares in vulnerable sites such as axillae and groin

only apply topical corticosteroids to areas of active atopic eczema (or eczema that has been active within the past 48 hours), which may include areas of broken skin.

Antihistamines as antipruritic:

Oral antihistamines should not be used routinely in the management of atopic eczema in children.

Healthcare professionals should offer a 1 month trial of a non-sedating antihistamine to children with severe atopic eczema where there is severe itching or urticarial or allergic rhinitis.

Healthcare professionals should offer a 7–14 day trial of an age-appropriate sedating antihistamine to children aged 6 months or over during an acute flare of atopic eczema if sleep disturbance has a significant impact on the child or parents. This treatment can be repeated during subsequent flares if successful.

2

In 5 years old patient came with recurrent common cold every month in fall and winter and also have nasal symptoms in spring. Absence from kindergarten and wake-up at night. Productive cough in long day and sometimes in sleep.

Antibiotics several times in year. Now use Neotadin 4 cc Bid as treatment and multiple cough and antihistamine syrups in last months.

Parents think that it is immune problem. Check?
Is it Allergic Rhinitis?

More suggestive for AR

2 or more of the following
symptoms for > 1 hour on most days:

- Runny nose
- Sneezing, especially paroxysmal
- Nasal obstruction
- Nasal itch
- Ocular symptoms like itch,redness or tearing

Symptoms LESS suggestive for AR

- Unilateral symptoms
- Discoloured secretions
- Facial or nasal pain
- Recurrent epistaxis
- Smell disorder (anosmia)
- Posterior rhinorrhoea (post nasal drip) with thickened mucus
- Isolated rhinorrhoea

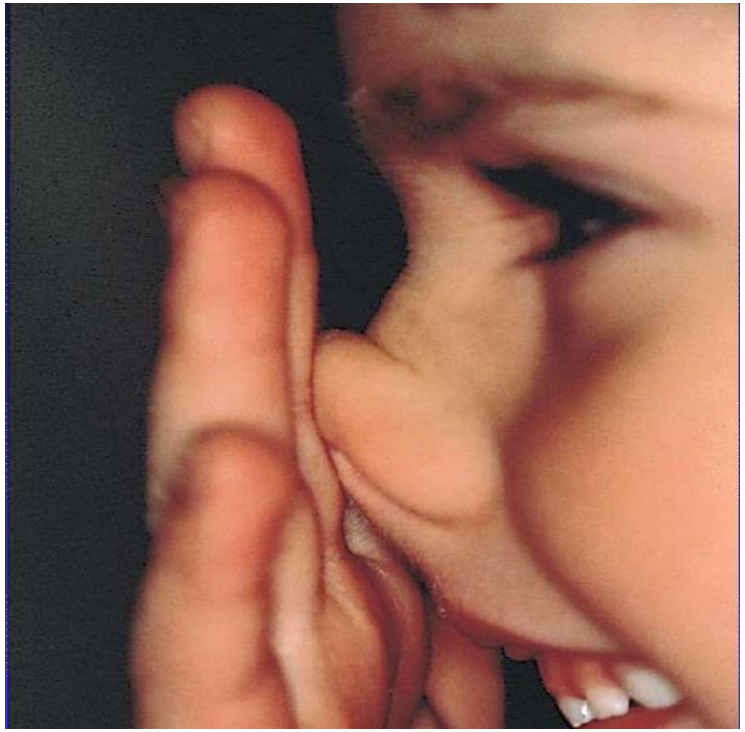
Nasal Features

Nasal Crease

OR

Allergic salute

A horizontal crease across the lower half of the bridge of the nose that is caused by repeated upward rubbing of the tip of the nose by the palm of the hand



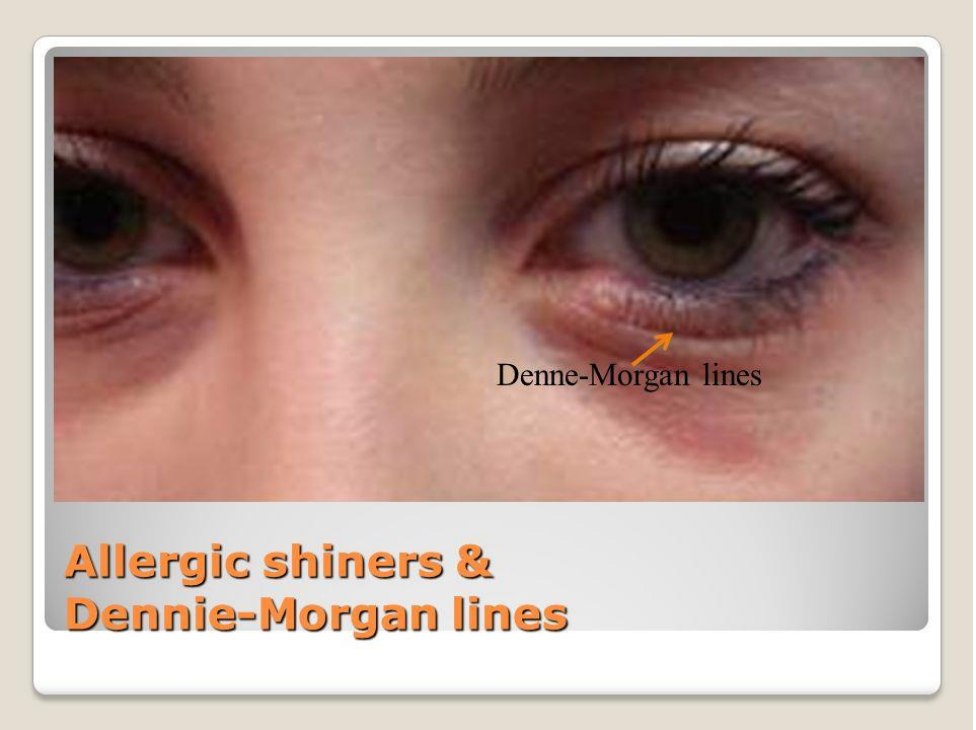
Eye Features

"**Allergic shiners**"

Dark circles around the eyes

"**Dennie-Morgan" lines**

prominent creases below the inferior eyelid



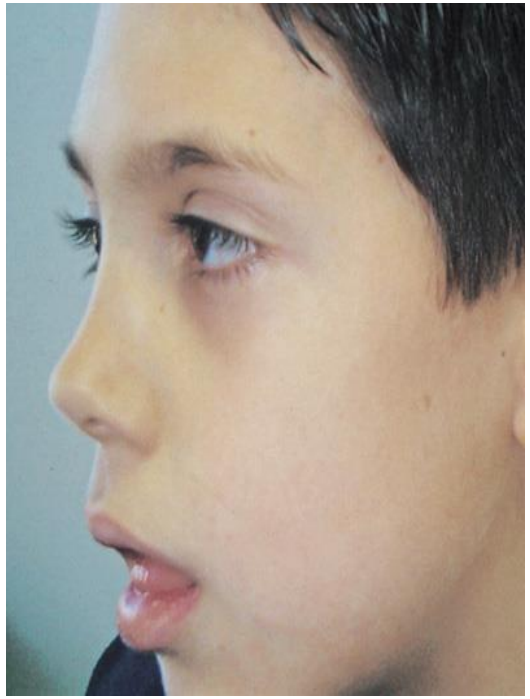
Mouth Features

"cobblestoning"

streaks of lymphoid tissue on the posterior pharynx, which is commonly observed with allergic rhinitis

Malocclusion (overbite) and a high-arched palate

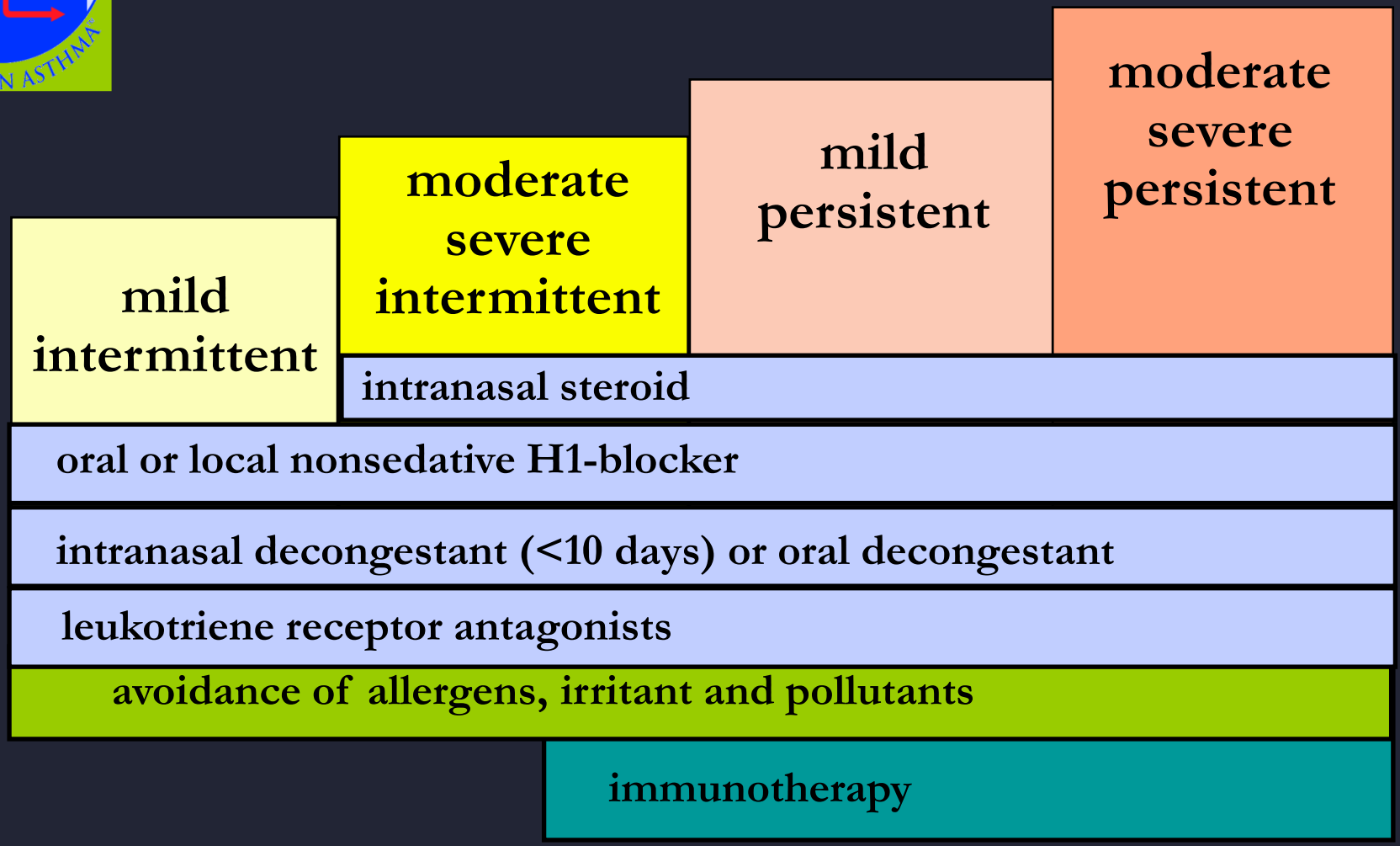
can be observed in patients who breathe from their mouths excessively



Allergic rhinitis classification

Intermittent	Persistent
Symptoms • < 4 days / week • or < 4 weeks	Symptoms • > 4 days / week • or > 4 weeks
Mild	**Moderate- severe**
• **Sleep:** normal • **Daily activities (incl. sports):** normal • **Work-school activities:** normal • **Severe symptoms:** no	• Sleep: disturbed • Daily activities: Restricted • Work and school activities: disrupted • Severe symptoms: yes

Management of Allergic Rhinitis: ARIA Guidelines



Modified from Bousquet J et al. J Allergy Clin Immunol. 2001;108:S147.

Add of oral anti-histamine to INS not help more in Mod to Sever AR (not contraindicate) But local intranasal anti-histamine yes

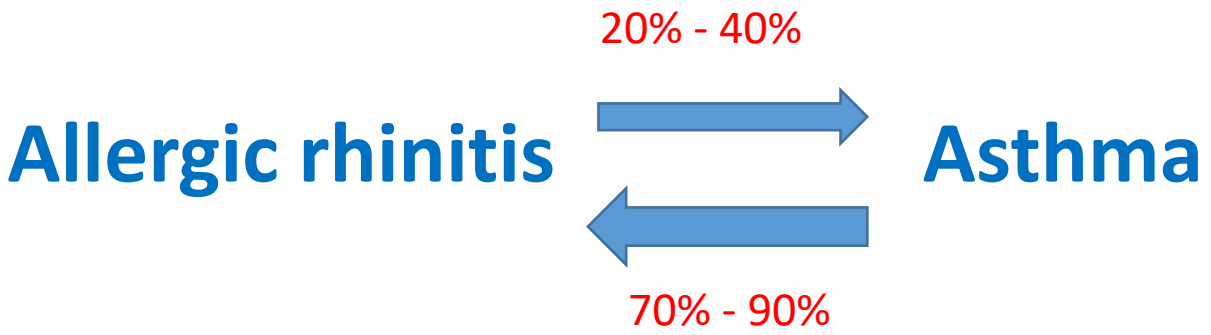
Montelucast best if there is mild Asthma symptoms with AR

3

In 7 years old patient admitted in hospital with dry cough and dyspnea post common cold in last day.
Impression in noted croup received Dexa and neb epinephrine and got better.

Patient have history of prolong cough and wake-up with cough at night in episodes of common colds before.

It is Croup or Asthma? Severity? Discharge medications?


20% - 40%
Allergic rhinitis
Asthma
70% - 90%

When to suspect comorbid asthma?[3]

Have you had an episode or recurrent episodes of wheezing?
Do you have troublesome cough, especially at night/during awakening/excercise?
Do you cough or wheeze after exercise?
Do you experience extended common cold/laryngitis/bronchitis?
Does your chest feel tight or do you feel impaired breathing out?

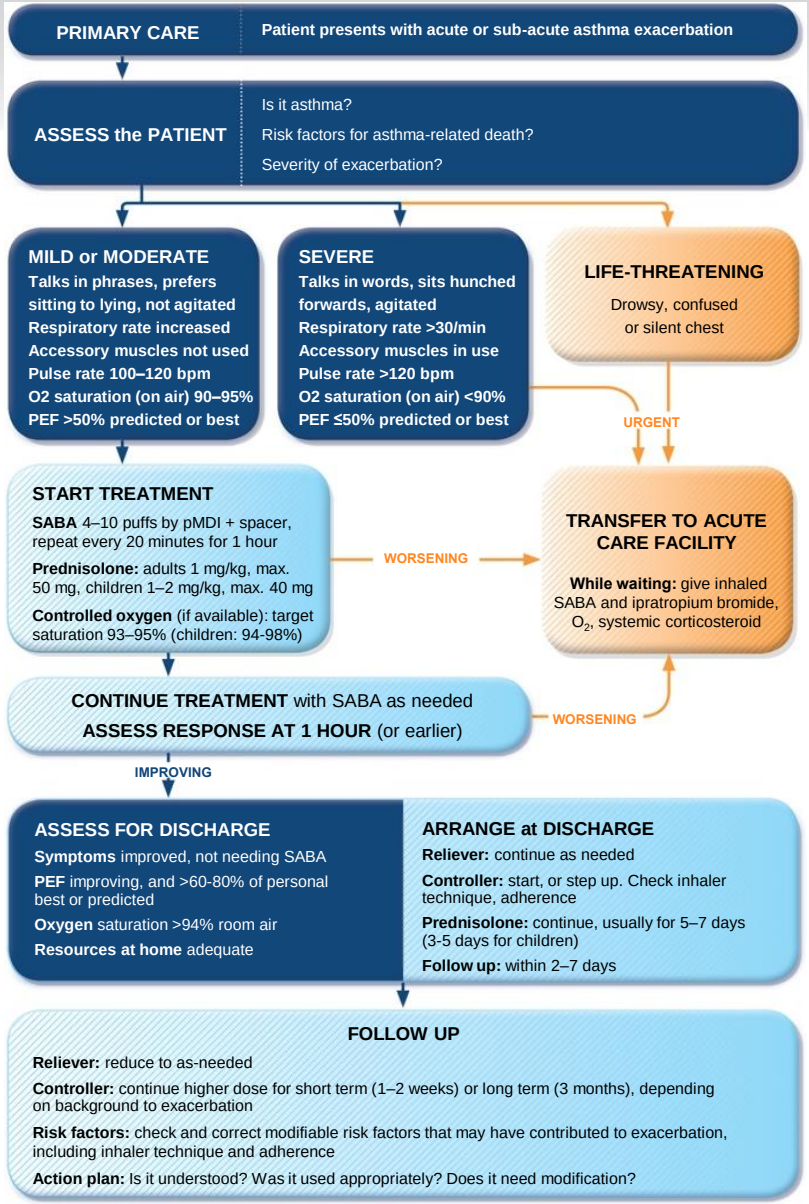
Table 138-4 FORMAL EVALUATION OF ASTHMA EXACERBATION SEVERITY IN THE URGENT OR EMERGENCY CARE SETTING*

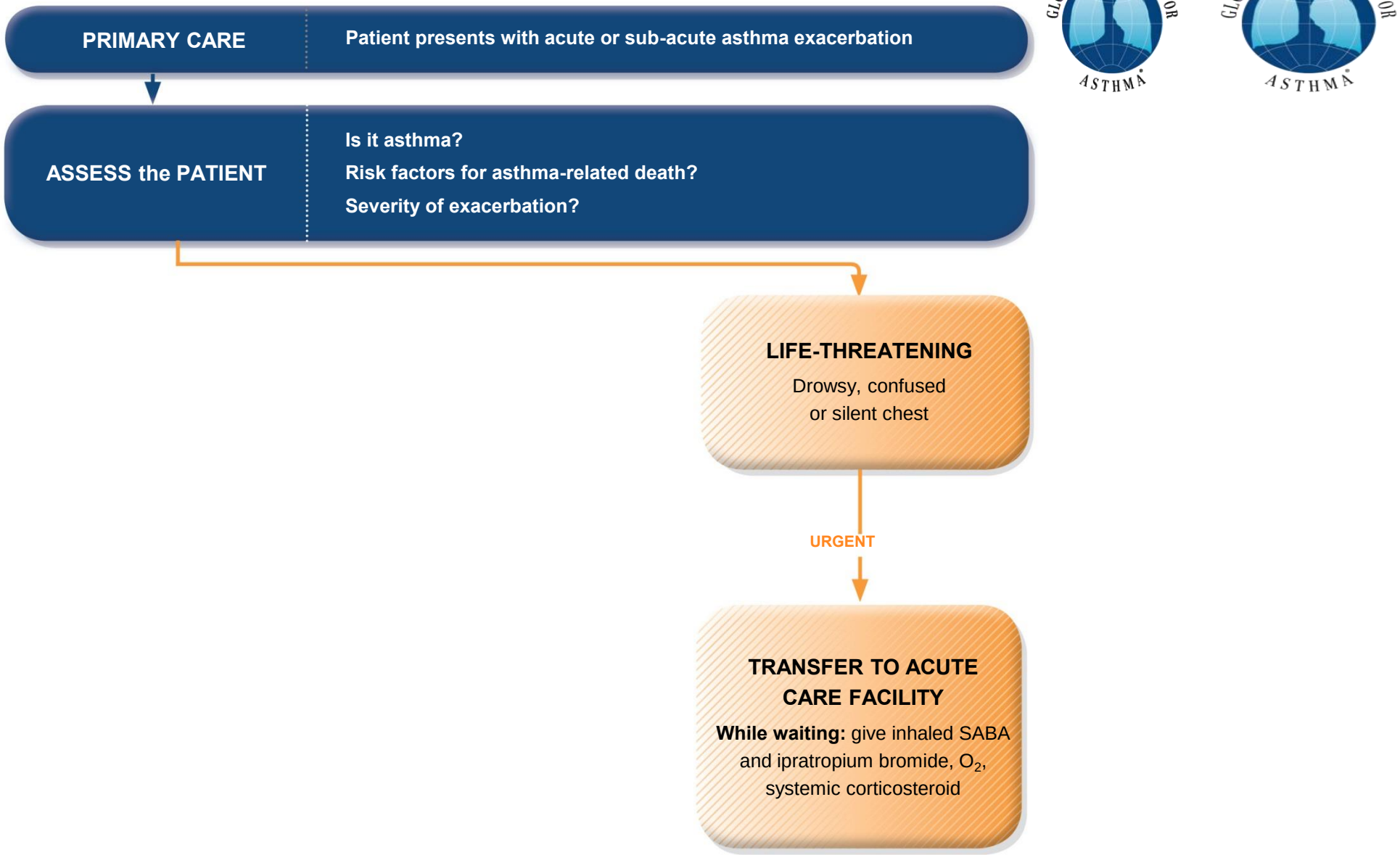
	MILD	MODERATE	SEVERE	SUBSET: RESPIRATORY ARREST IMMINENT
SYMPTOMS				
Breathlessness	While walking	While at rest (infant—softer, shorter cry, difficulty feeding)	While at rest (infant—stops feeding)	
	Can lie down	Prefers sitting	Sits upright	
Talks in	Sentences	Phrases	Words	
Alertness	May be agitated	Usually agitated	Usually agitated	Drowsy or confused
SIGNS				
Respiratory rate†	Increased	Increased	Often >30 breaths/min	
Use of accessory muscles; suprasternal retractions	Usually not	Commonly	Usually	Paradoxical thoracoabdominal movement
Wheeze	Moderate; often only end-expiratory	Loud; throughout exhalation	Usually loud; throughout inhalation and exhalation	Absence of wheeze
Pulse rate (beats/min)‡	<100	100-120	>120	Bradycardia
Pulsus paradoxus	Absent <10 mm Hg	May be present 10-25 mm Hg	Often present >25 mm Hg (adult) 20-40 mm Hg (child)	Absence suggests respiratory muscle fatigue
FUNCTIONAL ASSESSMENT				
Peak expiratory flow (value predicted or personal best)	≥70%	Approx. 40-69% or response lasts <2 hr	<40%	<25%§
Pao_2 (breathing air) *and/or*	Normal (test not usually necessary)	≥60 mm Hg (test not usually necessary)	<60 mm Hg; possible cyanosis	
Pco_2	<42 mm Hg (test not usually necessary)	<42 mm Hg (test not usually necessary)	≥42 mm Hg; possible respiratory failure	
Sao_2 (breathing air) at sea level	>95% (test not usually necessary)	90-95% (test not usually necessary)	<90%	
	Hypercapnia (hypoventilation) develops more readily in young children than in adults and adolescents			

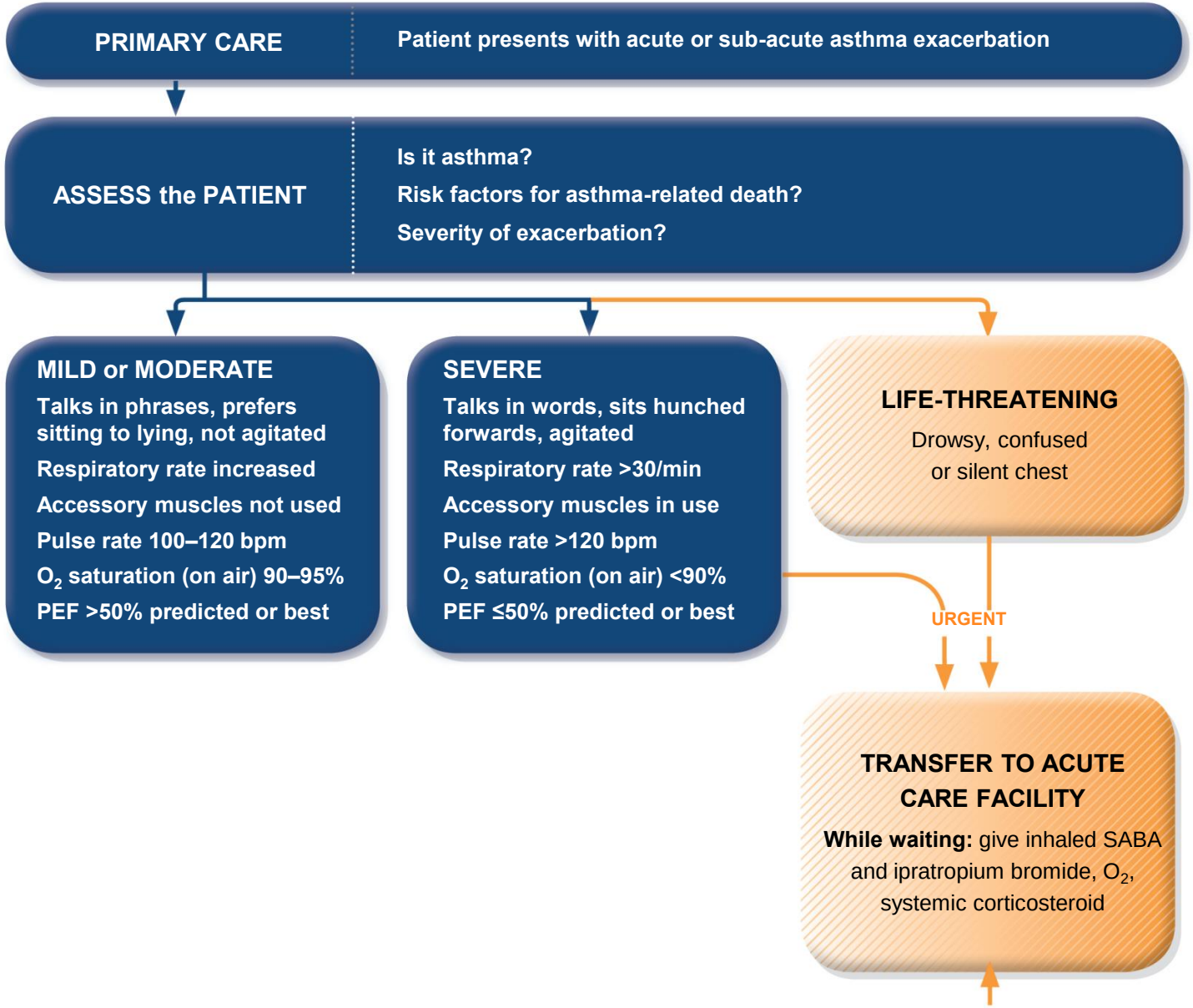
*Notes:
- The presence of several parameters, but not necessarily all, indicates the general classification of the exacerbation.
- Many of these parameters have not been systematically studied, especially as they correlate with each other. Thus, they serve only as general guides.
- The emotional impact of asthma symptoms on the patient and family is variable but must be recognized and addressed and can affect approaches to treatment and follow-up.

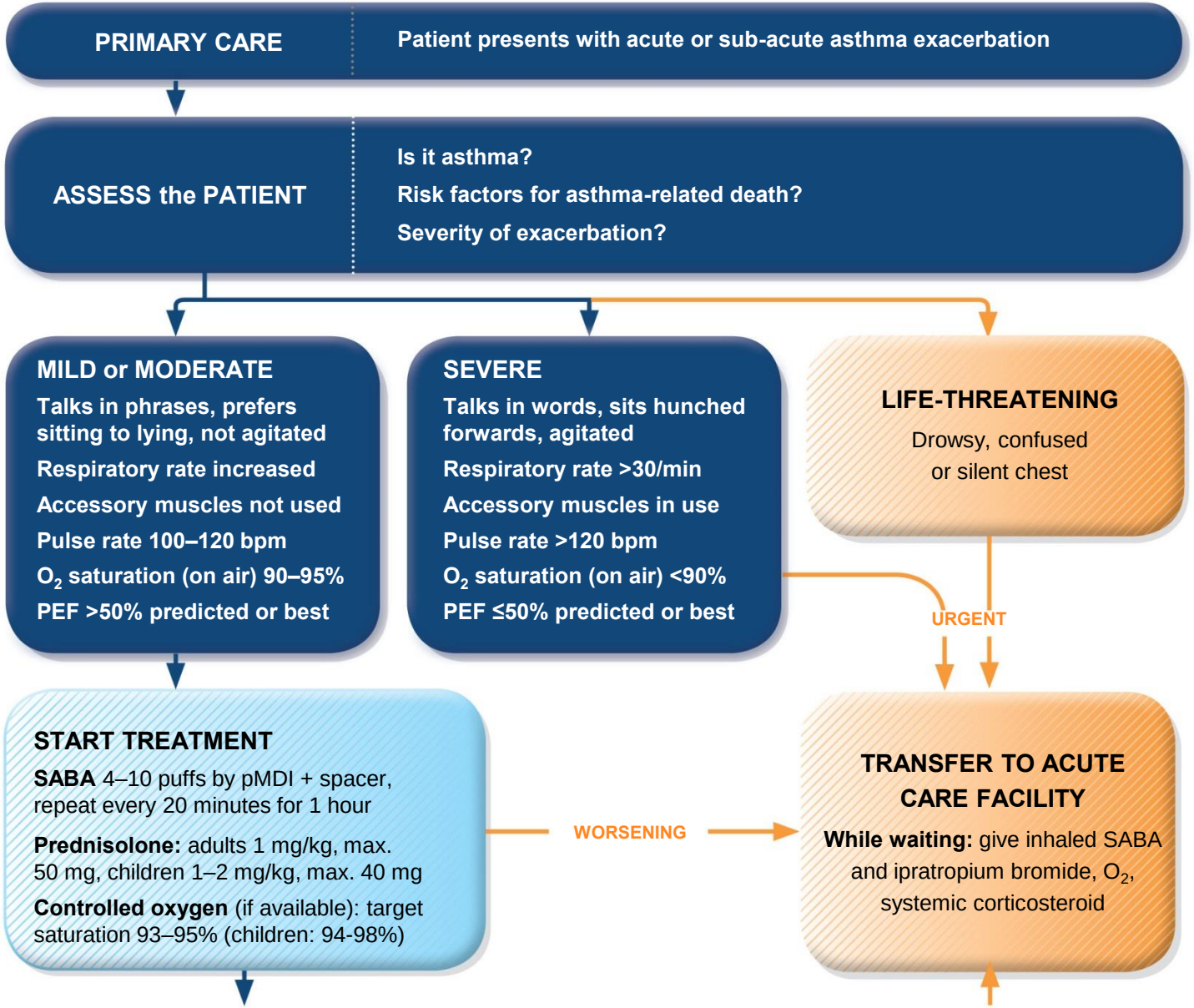
†Normal breathing rates in awake children by age: <2 mo, <60 breaths/min; 2-12 mo, <50 breaths/min; 1-5 yr, <40 breaths/min; 6-8 yr, <30 breaths/min.
‡Normal pulse rates in children by age: 2-12 mo, <160 beats/min; 1-2 yr, <120 beats/min; 2-8 yr, <110 beats/min.
§Peak expiratory flow testing may not be needed in very severe attacks.
Modified from EPR—3. Expert panel report 3: guidelines for the diagnosis and management of asthma, NIH Publication No. 07-4051, Bethesda, MA, 2007, U.S. Department of Health and Human Services; National Institutes of Health, National Heart, Lung, and Blood Institute; National Asthma Education and Prevention Program. www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm.

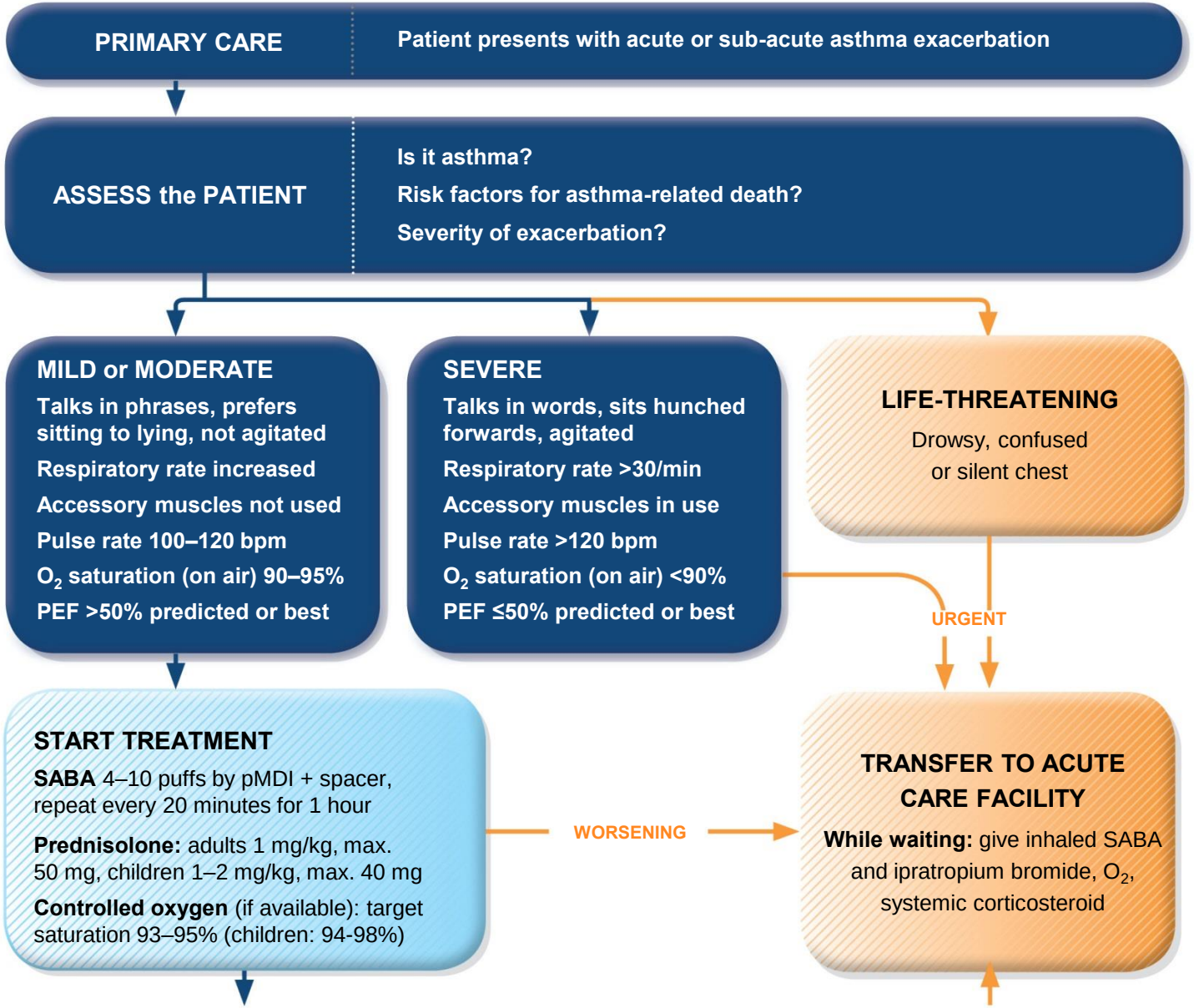
Managing exacerbations in primary care

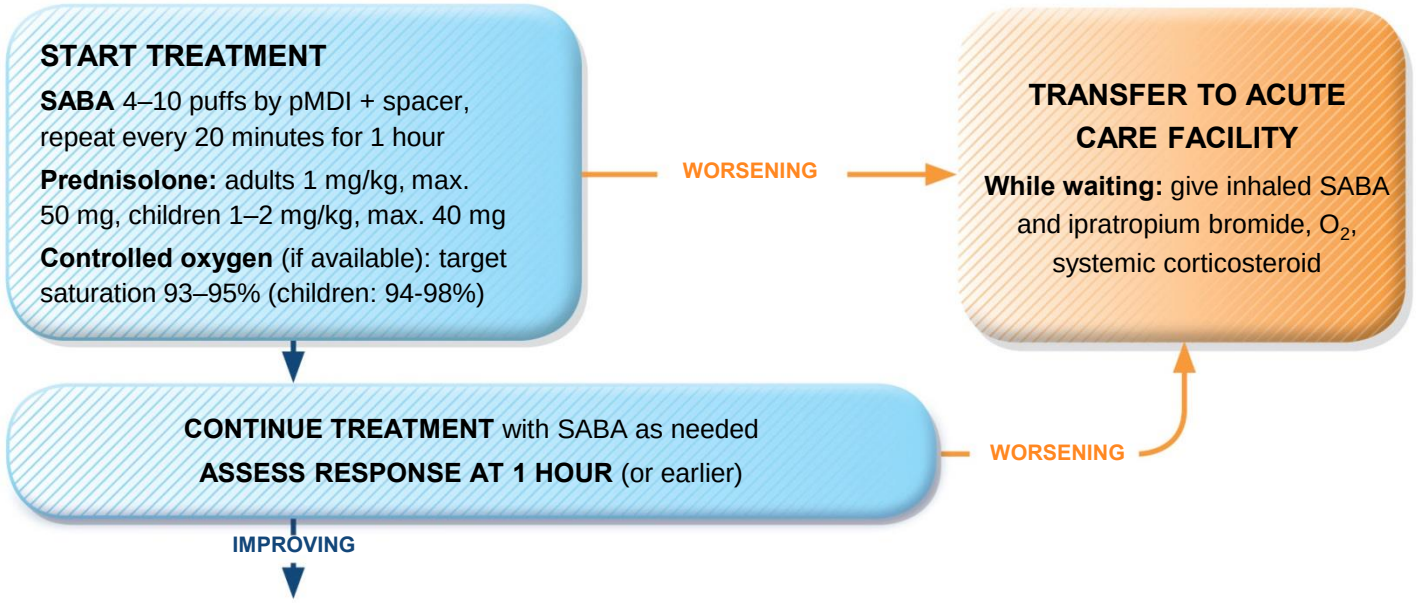


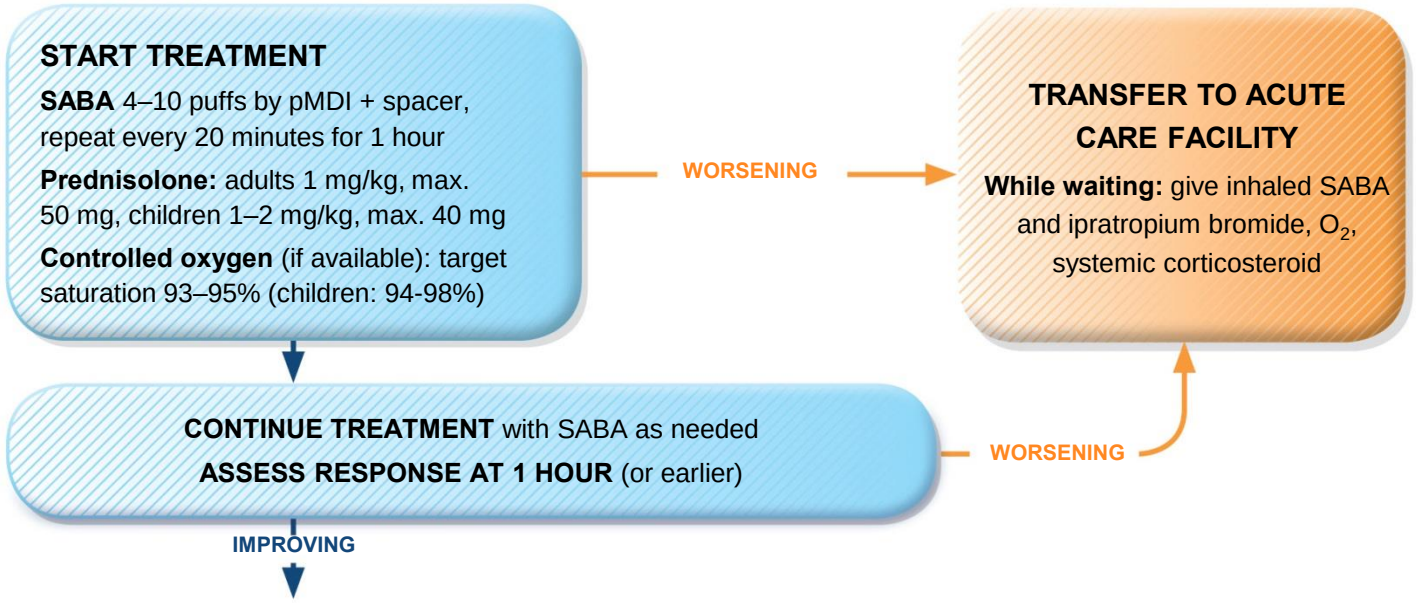


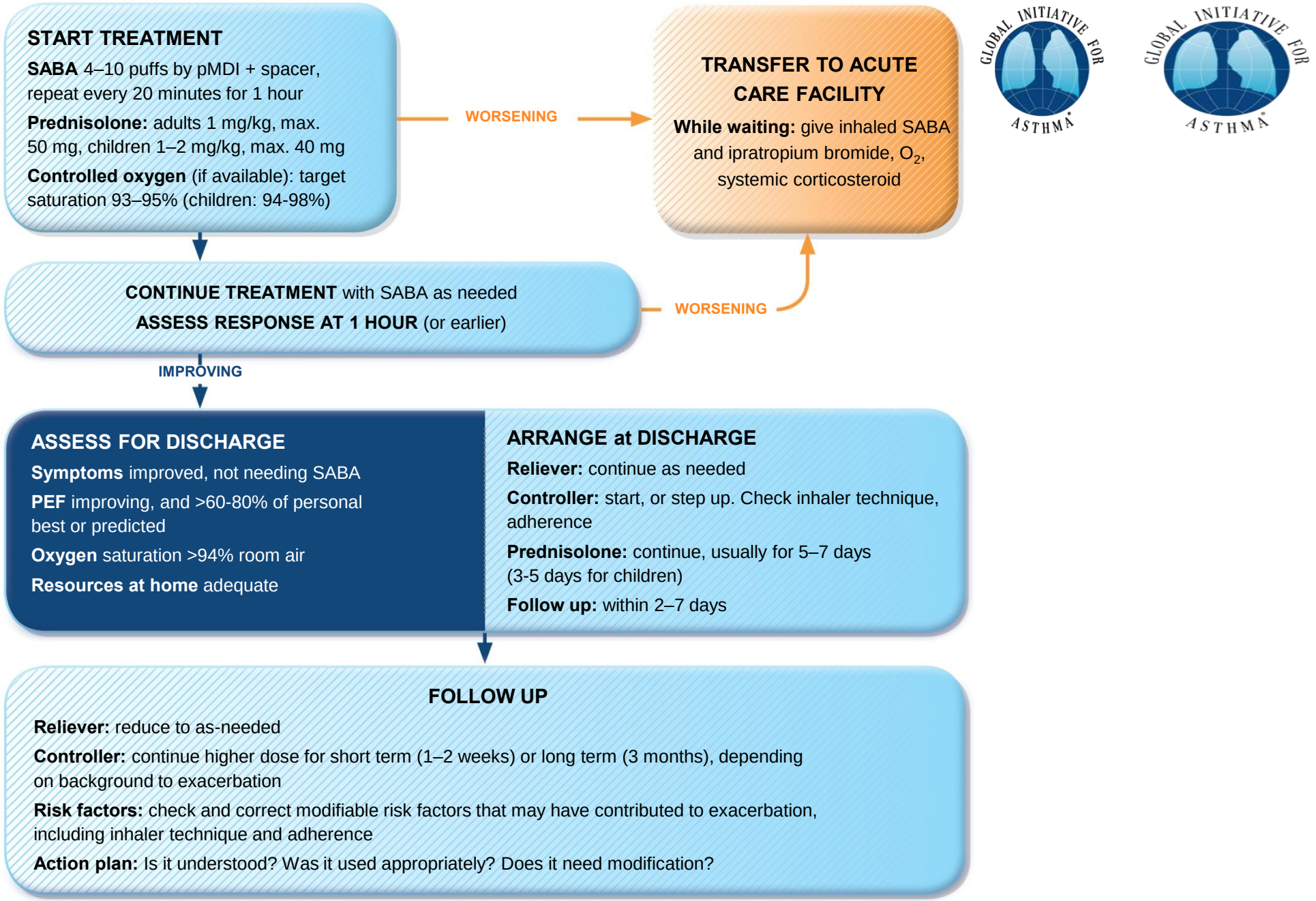












MILD or MODERATE

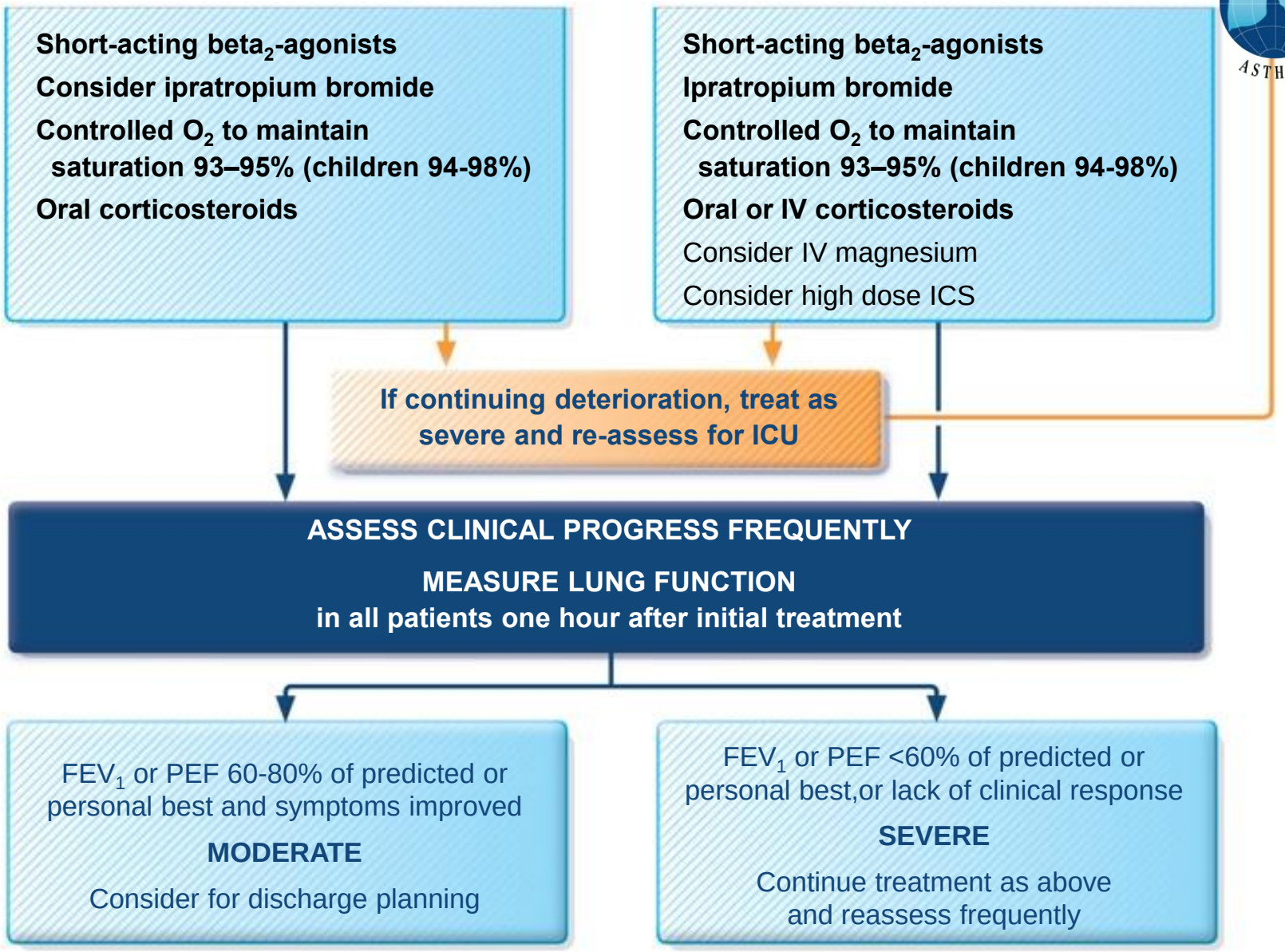
Talks in phrases
Prefers sitting to lying
Not agitated
Respiratory rate increased
Accessory muscles not used
Pulse rate 100–120 bpm
O_2 saturation (on air) 90–95%
PEF >50% predicted or best

Short-acting beta$_2$-agonists
Consider ipratropium bromide
Controlled O_2 to maintain saturation 93–95% (children 94-98%)
Oral corticosteroids

SEVERE

Talks in words
Sits hunched forwards
Agitated
Respiratory rate >30/min
Accessory muscles being used
Pulse rate >120 bpm
O_2 saturation (on air) < 90%
PEF ≤50% predicted or best

Short-acting beta$_2$-agonists
Ipratropium bromide
Controlled O_2 to maintain saturation 93–95% (children 94-98%)
Oral or IV corticosteroids
Consider IV magnesium
Consider high dose ICS



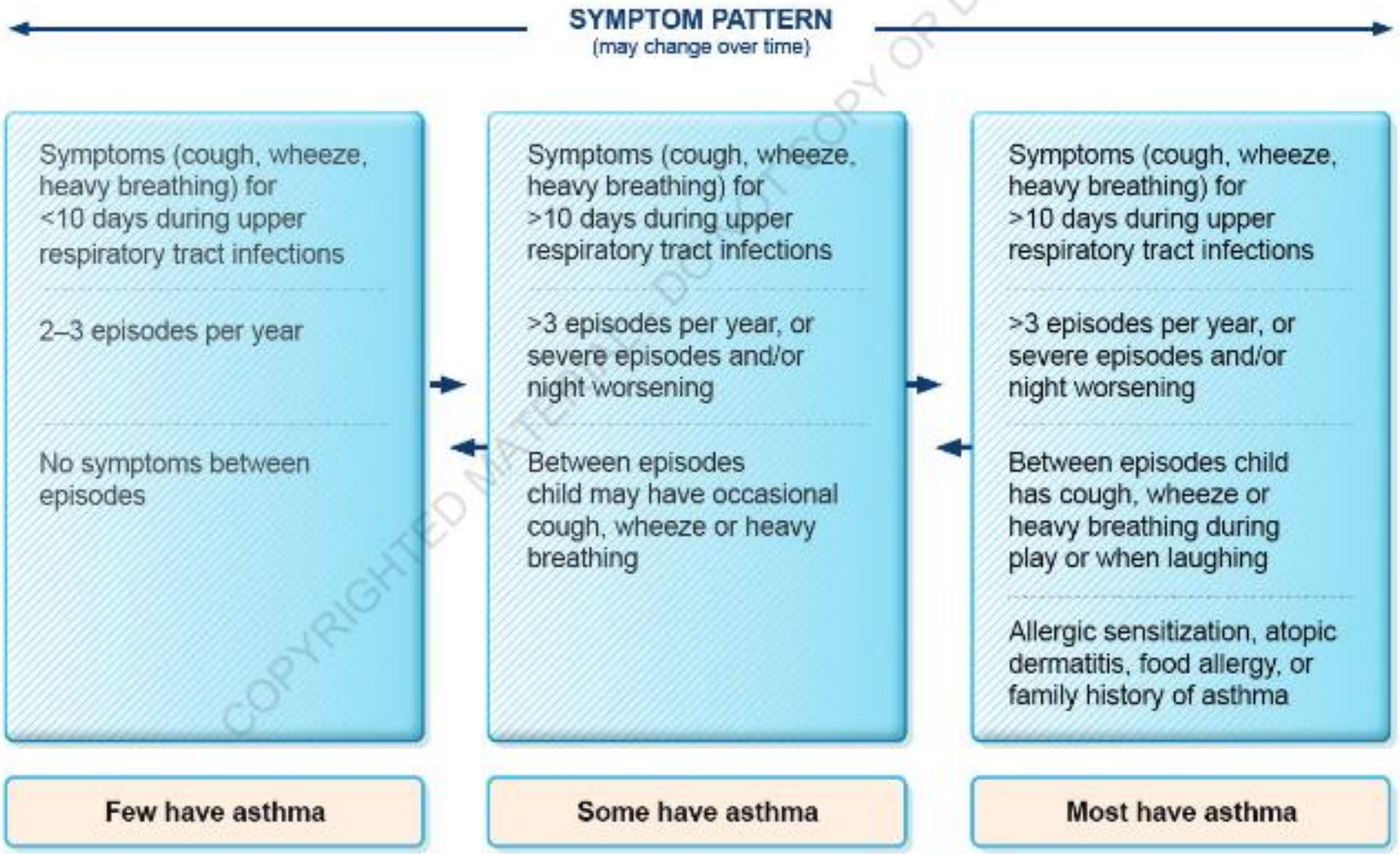
Patient admitted because of moderate to sever asthma attack received Ventolin from 20 minute to every 4 hour- Atrovent every 8 hours and pulmicort every 12 h- ceftriaxone for suspected pneumonia without fever WBC: 14000 Esr: 30 in first day and got better in second day no distress no wheeze nl symptoms at all.

- Ventolin? Atrovent? Pulmicort?
- Med for discharge?

Discharge medications:

Patient received Fluticason 125 bid- Salbutamol Bid and even more in sever symptoms for one month and continue Atrovent for 2 weeks also can use salbutamol and atrovent as action plan in exacerbations

Box 6-1. Probability of asthma diagnosis in children 5 years and younger



Components of Severity		Classification of Asthma Severity (5–11 years of age)			
			Persistent		
		Intermittent	Mild	Moderate	Severe
Impairment	Symptoms	≤2 days/week	>2 days/week but not daily	Daily	Throughout the day
	Nighttime awakenings	≤2x/month	3–4x/month	>1x/week but not nightly	Often 7x/week
	Short-acting $beta_2$-agonist use for symptom control (not prevention of EIB)	≤2 days/week	>2 days/week but not daily	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	• Normal FEV_1 between exacerbations • FEV_1 >80% predicted • FEV_1/FVC >85%	• FEV_1 = >80% predicted • FEV_1/FVC >80%	• FEV_1 = 60–80% predicted • FEV_1/FVC = 75–80%	• FEV_1 <60% predicted • FEV_1/FVC <75%
Risk	Exacerbations requiring oral systemic corticosteroids	0–1/year (see note)	≥2/year (see note) →		
		← Consider severity and interval since last exacerbation. → Frequency and severity may fluctuate over time for patients in any severity category.			
		Relative annual risk of exacerbations may be related to FEV_1.			
Recommended Step for Initiating Therapy (See figure 4–1b for treatment steps.)		Step 1	Step 2	Step 3, medium-dose ICS option	Step 3, medium-dose ICS option, or step 4 and consider short course of oral systemic corticosteroids
		In 2–6 weeks, evaluate level of asthma control that is achieved, and adjust therapy accordingly.			

Background to changes in 2019 - the risks of SABA-only treatment

- Regular or frequent use of SABA is associated with adverse effects
  - β-receptor downregulation, decreased bronchoprotection, 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 (average 1.7 puffs/day) is associated with higher risk of emergency department presentations
  - Dispensing of ≥12 canisters per year is associated with higher risk of death

- Key changes in GINA 2021 include division of the treatment figure for adults and adolescents into two tracks.
  - Track 1 (preferred) has low-dose ICS-formoterol as the reliever at all steps: as needed only in Steps 1-2 (mild asthma), and with daily maintenance ICS-formoterol (maintenance-and-reliever therapy, “MART”) in Steps 3-5.
  - Track 2 (alternative) has as-needed SABA across all steps, plus regular ICS (Step 2) or ICS-long-acting b2-agonist (Steps 3-5).

GINA 2019 – landmark changes in asthma management

- For safety, GINA no longer recommends SABA-only treatment for Step 1
  - This decision was based on evidence that SABA-only treatment increases the risk of severe exacerbations, and that adding any ICS significantly reduces the risk

- GINA now recommends that all adults and adolescents with asthma should receive ICS-containing controller treatment, to reduce the risk of serious exacerbations
  - The ICS can be delivered by regular daily treatment or, in mild asthma, by as-needed low dose ICS-formoterol

GINA 2023 – STARTING TREATMENT

Children 6–11 years with a diagnosis of asthma

ASSESS:

- Confirmation of diagnosis
- Symptom control & modifiable risk factors
- Comorbidities
- Inhaler technique & adherence
- Child and parent/caregiver preferences and goals

Short course OCS may also be needed for patients presenting with severely uncontrolled asthma

START HERE IF:

Symptoms less than twice a month	Symptoms twice a month or more, but less than daily	Symptoms most days, or waking with asthma once a week or more	Symptoms most days, or waking with asthma once a week or more, and low lung function	
PREFERRED CONTROLLER to prevent exacerbations and control symptoms	**STEP 1** Low dose ICS taken whenever SABA taken	**STEP 2** Daily low dose inhaled corticosteroid (ICS) (see table of ICS dose ranges for children)	**STEP 3** Low dose ICS-LABA, OR medium dose ICS, OR very low dose ICS-formoterol maintenance and reliever (MART)	**STEP 4** Medium dose ICS-LABA, OR low dose ICS-formoterol maintenance and reliever therapy (MART). Refer for expert advice	**STEP 5** Refer for phenotypic assessment ± higher dose ICS-LABA or add-on therapy, e.g. anti-IgE, anti-IL4R, anti-IL5
Other controller options (limited indications, or less evidence for efficacy or safety)	*Consider daily low dose ICS*	*Daily leukotriene receptor antagonist (LTRA), or low dose ICS taken whenever SABA taken*	*Low dose ICS + LTRA*	*Add tiotropium or add LTRA*	*As last resort, consider add-on low dose OCS, but consider side-effects*
RELIEVER	As-needed SABA (or low dose ICS-formoterol reliever for MART in Steps 3 and 4)				

GINA 2023 – STARTING TREATMENT

in adults and adolescents with a diagnosis of asthma

Track 1 using ICS-formoterol reliever is preferred because it reduces the risk of severe exacerbations, compared with using SABA reliever, and it is simpler for patients as it uses the same medication for reliever and maintenance treatment.

FIRST ASSESS:

- Confirm diagnosis
- Symptom control and modifiable risk factors
- Comorbidities
- Inhaler technique and adherence
- Patient preferences and goals

START HERE IF:

TRACK 1: PREFERRED CONTROLLER and RELIEVER

Using ICS-formoterol as the reliever* reduces the risk of exacerbations compared with using a SABA reliever, and is a simpler regimen

Symptoms less than 4–5 days a week

STEPS 1–2

As-needed-only low dose ICS-formoterol*

Symptoms most days, or waking with asthma once a week or more

STEP 3

Low dose maintenance ICS-formoterol

Daily symptoms, or waking with asthma once a week or more, and low lung function

STEP 4

Medium dose maintenance ICS-formoterol

Short course OCS may also be needed for patients presenting with severely uncontrolled asthma

STEP 5

Add-on LAMA

Refer for phenotypic assessment ± biologic therapy

Consider high dose ICS-formoterol

RELIEVER: As-needed low-dose ICS-formoterol*

START HERE IF:

TRACK 2: Alternative CONTROLLER and RELIEVER

Before considering a regimen with SABA reliever, check if the patient is likely to adhere to daily controller treatment

Symptoms less than twice a month

STEP 1

Take ICS whenever SABA taken*

Symptoms twice a month or more, but less than 4–5 days a week

STEP 2

Low dose maintenance ICS

Symptoms most days, or waking with asthma once a week or more

STEP 3

Low dose maintenance ICS-LABA

Daily symptoms, or waking with asthma once a week or more, and low lung function

STEP 4

Medium/high dose maintenance ICS-LABA

Short course OCS may also be needed for patients presenting with severely uncontrolled asthma

STEP 5

Add-on LAMA

Refer for phenotypic assessment ± biologic therapy

Consider high dose ICS-LABA

RELIEVER: As-needed SABA, or as-needed ICS-SABA*