

Guidelines for Asthma care in 2022

- *what's new: can it reduce over-reliance on SABAs?*

U G Lalloo

Pulmonology and Critical Care

*Busamed Gateway Private and Life Mount Edgecombe
Hospitals*

SATS Adult and Adolescent Asthma Guideline Committee

Exec Director: Enhancing Care Foundation

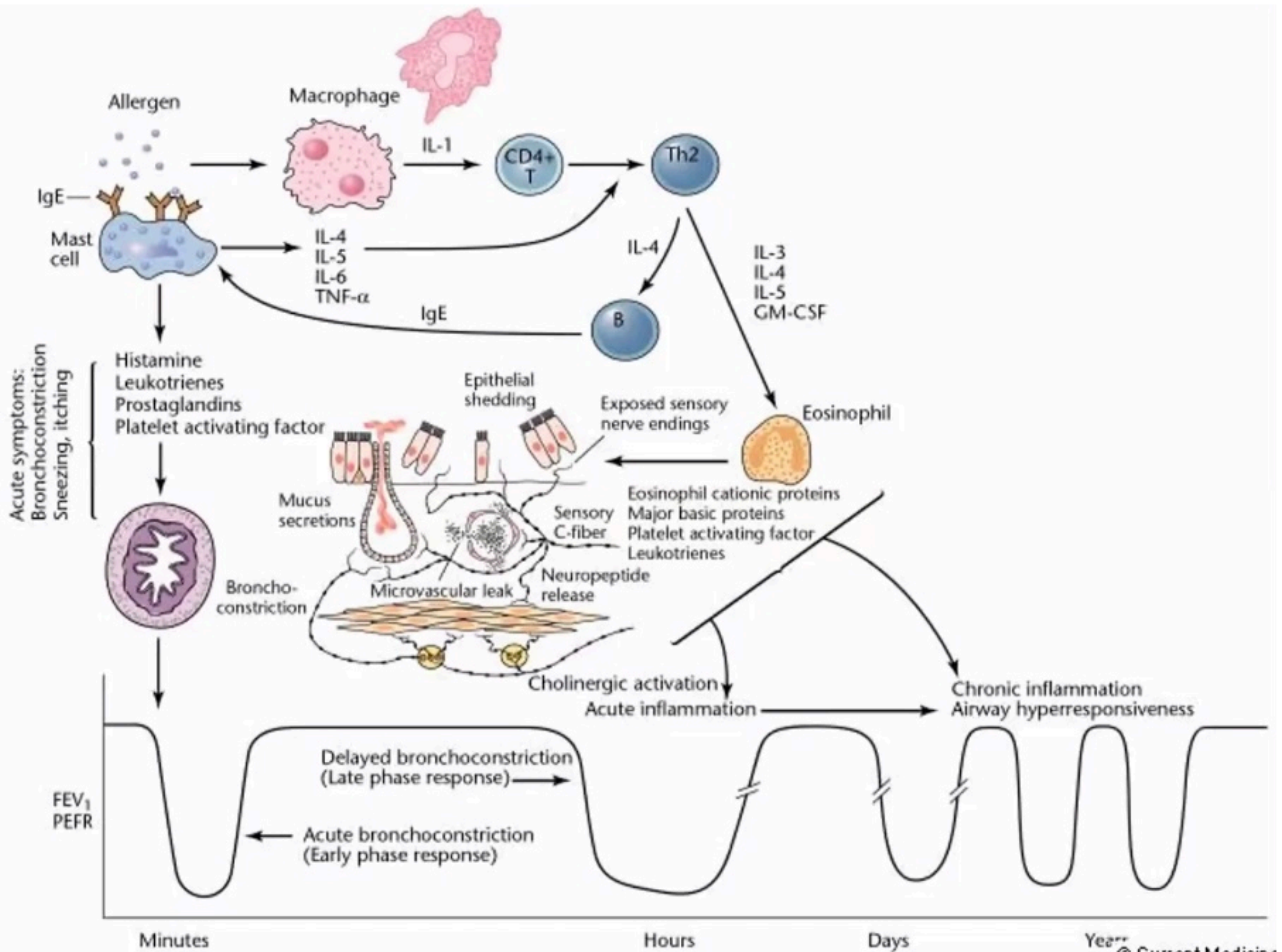
*Principal Investigator Durban International Clinical
Research Site*

Case history

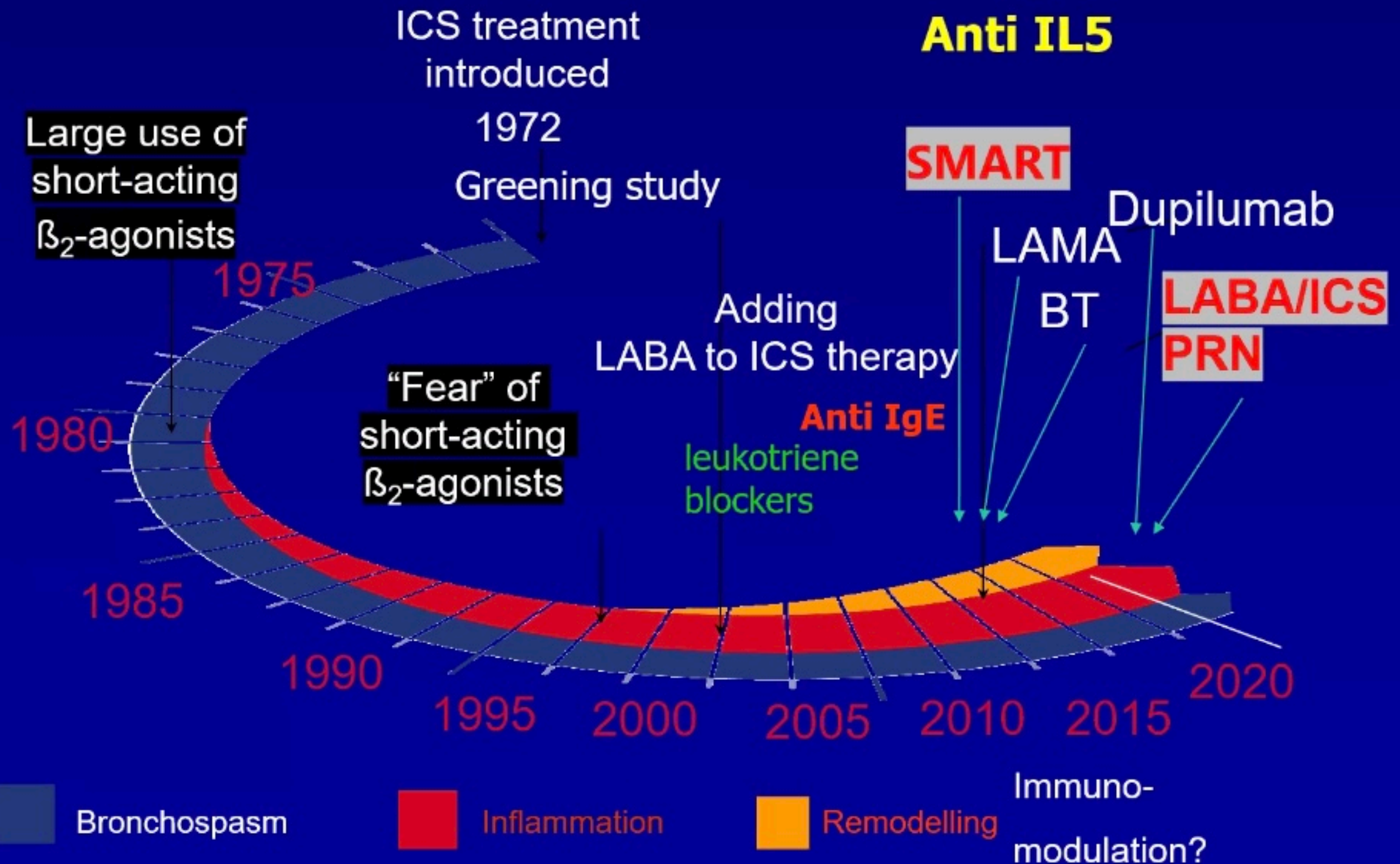
- 28 year old educator
- Presents with
 - Recurrent tight chest
 - Responsive to salbutamol prn and using it BD and PRN
 - Childhood asthma and remission by 12 years
 - F/H of asthma

Diagnosis

- Chronic persistent asthma
- Diagnostic criteria
 - *Spirometry - Δ FEV1: 12% and 200ml*
 - *PEF - Δ PEF 20%*
 - *Exercise test - Δ FEV1 or PEF post 6min exercise*
 - *Diurnal variation in PEF: 10% over 2 weeks*
 - *Histamine and methacholine challenge*



Evolving treatment options



Goals of asthma treatment

- Achieve and maintain control of symptoms
- Maintain normal activity levels, including exercise, sleep uninterrupted by asthma symptoms
- Maintain normal pulmonary function or as close to normal as possible
- Prevent asthma exacerbations
- Avoid adverse effects from asthma medications
- Prevent asthma morbidity and mortality.

Initiation of treatment

Presentation	Choice of initiation medication
<i>Infrequent symptoms (2-4 times a month)</i>	<i>As-needed low dose ICS-formoterol or as-needed SABA and low dose ICS when SABA used; If more than twice a month consider regular low dose ICS and as needed SABA.</i>
<i>Frequent symptoms, night waking and /or risk of exacerbations</i>	<i>Low dose ICS-LABA and as-needed SABA or low dose ICS-formoterol as regular maintenance and used as reliever.</i>

Step 1 and 2: mild asthma - low dose inhaled corticosteroid therapy

- As needed low dose inhaled corticosteroid-formoterol ^a

Alternatively

- As needed SABA - and additional inhaled corticosteroid-taken on each occasion SABA used

Or

- Regular low dose inhaled corticosteroid with SABA as reliever

If the patient remains uncontrolled, review adherence and triggers and step-up therapy:

Step 3: mild to moderate asthma - medium dose inhaled corticosteroid therapy

- Low dose inhaled corticosteroid-formoterol as regular maintenance and reliever

Alternatively

- Low dose LABA-ICS as regular maintenance and SABA reliever

Or

- Medium dose inhaled steroid as regular maintenance with SABA reliever

If the patient remains uncontrolled, review adherence and triggers and step-up therapy:

Step 4: moderate asthma - medium to high dose inhaled corticosteroid therapy with additional controllers

- Medium dose inhaled corticosteroid-formoterol as regular maintenance and low-dose Inhaled corticosteroid formoterol as reliever

Alternatively

- Medium dose LABA-ICS as regular maintenance and SABA reliever

Or

- High dose LABA-ICS as regular maintenance and SABA reliever

And

- Consider additional LAMA or LRTA to LABA-ICS maintenance

If the patient remains uncontrolled on step 4 therapy, they should be reviewed by a specialist in asthma care: phenotyping should be performed, and consideration given to additional alternative controllers, biological therapy, or other interventions ^b

Step 5: more severe asthma ^c - high dose inhaled corticosteroid therapy with additional controllers and biological therapies

- High dose inhaled steroid-formoterol regular maintenance with low dose ICS-formoterol as reliever ±separate LAMA

Or

- High dose inhaled corticosteroid-LABA-LAMA with SABA as needed ^d

Or

- Medium dose inhaled corticosteroid-LABA-LAMA with SABA as needed

And

- Consider addition of azithromycin / LTRA / theophylline/ low dose oral steroids
- Consider biological therapy if uncontrolled on inhaled therapies: anti-IgE, anti-IL5/r, anti-IL4r. etc.
- Consider bronchial thermoplasty ^e

Key points

- Recognise that mild asthma is associated with increased mortality
- Incorporate new treatment strategies
 - LAMA
 - Biologics
 - Bronchial thermoplasty
- As needed LABA/ICS
- Asthma/COPD overlap
- Severe asthma
- COVID-19 risks

Severe asthma

- Adherence and inhaler technique
- Rhinosinusitis/(adults) nasal polyps
- Psychological factors: personality trait, symptom perception, anxiety, depression
- Smoking/smoking related disease
- Vocal cord dysfunction
- Obesity and obstructive sleep apnoea
- Hyperventilation syndrome
- Hormonal influences: premenstrual, menarche, menopause, thyroid disorders
- Medications: aspirin, NSAIDs, β -blockers, ACEI

Management of patient

- Initiate treatment
- Achieve and monitor control

SPECIAL CONSIDERATIONS

- Is it safe to perform lung function?
- SARS COV-2 vaccine?

Lung function in the time of COVID-19

- Can it be performed safely:
 - Not during pandemic waves
 - Personal and environmental protection
 - Sanitizing equipment
 - Vaccine status?

ASTHMA AND COVID-19

ASTHMA DOES NOT INCREASE RISK OF ACQUIRING INFECTION

- Evidence lacking that patients with asthma are at increased risk of acquiring COVID-19
- Studies of people with suspected COVID-19 showed that the asthma prevalence is lower or similar in people who tested positive compared with those who tested negative for COVID-19

GUIDELINE-BASED ASTHMA THERAPY SHOULD BE CONTINUED

- **Inhaled corticosteroids** may be protective in severe COVID-19
- **Biologics also appear safe**
 - Some studies suggest that the need for hospital admission in patients with asthma on biologics is lower compared with patients with asthma not on biologics, suggesting a protective effect

ALL PATIENTS WITH ASTHMA SHOULD BE VACCINATED AGAINST COVID-19

- What about patients on **inhaled corticosteroids**?
 - No evidence that low to moderate doses of inhaled corticosteroids impact vaccine effectiveness
- What about patients on **oral corticosteroids**?
 - Should still get vaccine, but more research is needed about immune response to vaccine
- What about patients on **biologic therapy**?
 - Should still get vaccine, but AAAAI recommends a 48-hour separation (before or after) between vaccine and biologic administration

DOES ASTHMA INCREASE RISK OF DEATH FROM COVID-19?

- Asthma does not confer an increased risk of severe illness or death from COVID-19
- In one study, patients with asthma and COVID-19 were 48% less likely to require ICU admission and 58% less likely to require mechanical ventilation and were not at increased risk of death when compared with patients with asthma and without COVID-19

ASTHMA ALONE DOES NOT INCREASE RISK OF MORE SEVERE ILLNESS, BUT THERE ARE FACTORS IN ASTHMATICS THAT DO INCREASE RISK

- Age >55 years
- Hypertension
- Dyslipidemia
- Diabetes
- Obesity



COVID-19 and asthma (as at April 3, 2020)

- Advise patients with asthma to continue taking their prescribed asthma medications, particularly *inhaled corticosteroids* (ICS), and oral corticosteroids (OCS) if prescribed
 - Asthma medications should be continued as usual. Stopping ICS often leads to potentially dangerous worsening of asthma
 - For patients with severe asthma: continue biologic therapy, and do not suddenly stop OCS if prescribed
- Make sure that all patients have a *written asthma action plan* with instructions about:
 - Increasing controller and reliever medication when asthma worsens
 - Taking a short course of OCS for severe asthma exacerbations
 - When to seek medical help
 - See the GINA 2020 report for more information about treatment options for asthma action plans.
- *Avoid nebulizers* where possible
 - Nebulizers increase the risk of disseminating virus to other patients AND to health care professionals
 - Pressurized metered dose inhaler via a spacer is the preferred treatment during severe exacerbations, with a mouthpiece or tightly fitting face mask if required

COVID-19 and asthma (as at March 30, 2020)

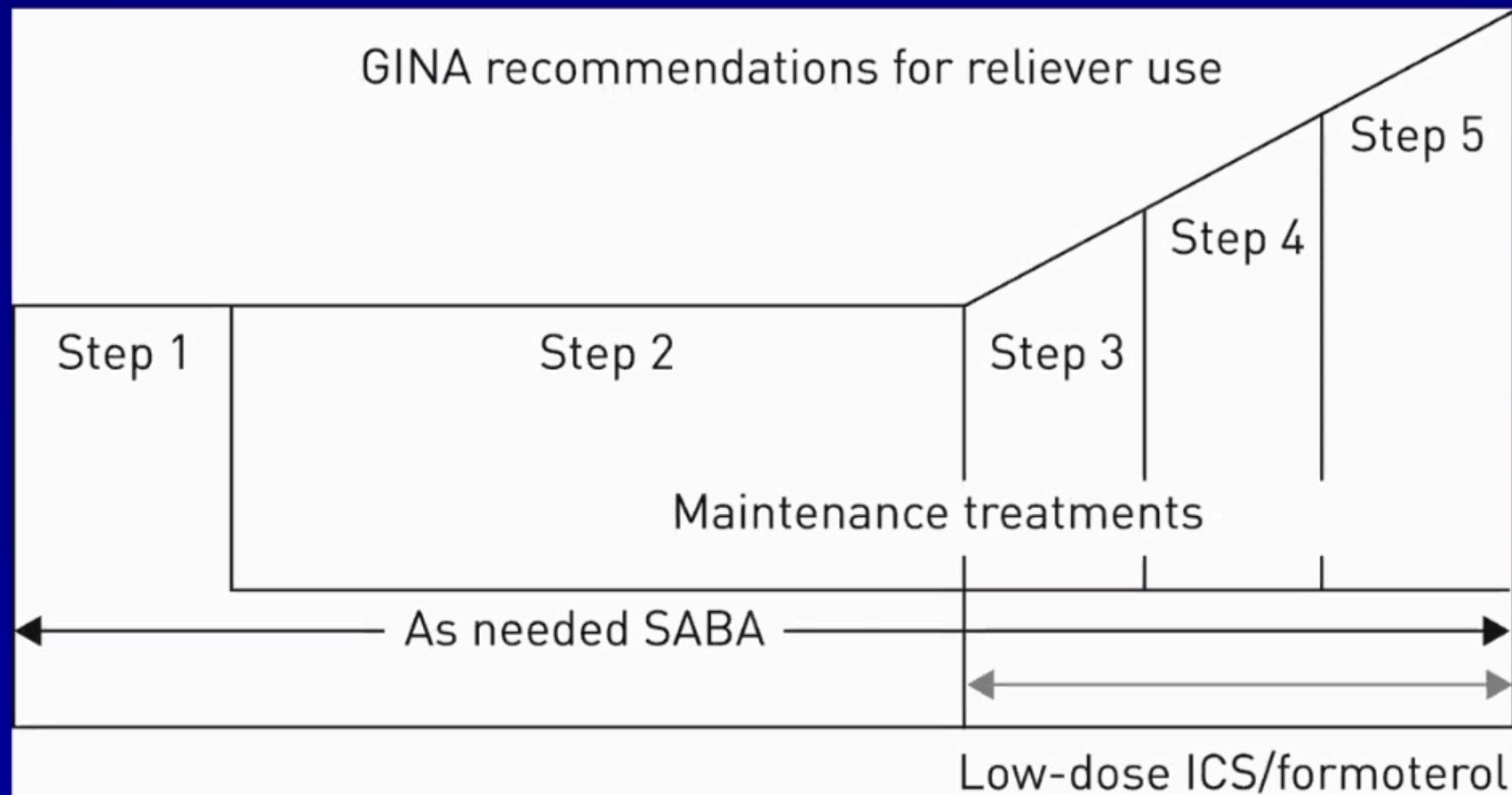
- *Avoid spirometry* in patients with confirmed/suspected COVID-19
 - Spirometry can disseminate viral particles and expose staff and patients to risk of infection
 - While community transmission of the virus is occurring in your region, postpone spirometry and peak flow measurement within health care facilities unless there is an urgent need
 - Follow contact and droplet precautions
- *Follow strict infection control procedures* if aerosol-generating procedures are needed
 - For example: nebulization, oxygen therapy (including with nasal prongs), sputum induction, manual ventilation, non-invasive ventilation and intubation
 - World Health Organization (WHO) infection control recommendations are found here: [www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-\(ncov\)-infection-is-suspected-20200125](http://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125)
- *Follow local health advice* about hygiene strategies and use of personal protective equipment, as new information becomes available in your country or region

What about SABA for symptom relief?

- Traditional approach
- SABA and asthma mortality
- Delivering anti-inflammatory treatment whilst treating acute symptoms?
- Is there a different approach in our patient?

A new approach!

- As needed combination ICS/ β 2 agonists
 - *Revolution or evolution?*



Continuum of care model:
patient-adjusted pharmacotherapy of asthma

Doctor-directed
maintenance treatment

Escalate or reduce treatment

Additional maintenance treatment options

Patient-adjusted
symptom-driven
reliever/controller
(single inhaler)

Intermittent
low-dose
ICS/LABA
for relief

Low-dose
ICS/LABA
maintenance
+ for relief

Medium/high-dose
ICS/LABA
maintenance
+ for relief

Higher-dose
ICS/LABA
maintenance
+ for relief

Table 2 Demographics

Characteristic[#]	
Duration of asthma (n=104)	0–62 years (median 11 years)
Age at diagnosis (n=102)	10 months–90 years (median 37 years)
Age at death (n=193)	4–97 years (median 58 years)
Severity of asthma (n=155)[¶]	
Mild	14 (9%)
Moderate	76 (49%)
Severe	61 (39%)
Previous hospital admission (n=190)	90 (47%)
Accident and Emergency attendances (n=115)	40 (34%)
Intensive care admissions (n=181)	27 (15%)
Current smokers (n=193)	39 (20%) ⁺
Psychosocial and learning disability factors (n=190)	84 (44%)
Obesity (BMI ≥ 30 kg·m⁻² at most recent assessment) (n=121)	38 (31%)

Data are presented as n (%), unless otherwise stated. [#]: data return from doctors was incomplete; n assessable data for each parameter are shown in parentheses. [¶]: classified by clinicians, 12 out of 28 children and young people (under 20 years-old) were classified with mild or moderate asthma by their clinicians. ⁺: a further 27 (10%) were exposed to smoke at work.

Levy M. Breathe;2015;11

CHOOSING WISELY: THINGS WE DO FOR NO REASON

Nebulized bronchodilators instead of
metered-dose inhalers for obstructive
pulmonary symptoms

J. Hosp. Med. 2015 October;10(10):691-693 |
10.1002/jhm.2386