

Case discussion

พ.ญ. ณ์ับผลิกา กองพลพรหม

สาขาวิชาโรคระบบทางเดินหายใจและเวชบำบัดวิกฤต

ภาควิชาอายุรศาสตร์ คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

Case Study 1

Patient: Mrs. Ant

OPD visit (in schedule)

36 year old

Previously diagnosed with moderate persistent asthma

Physical exam: unremarkable

Relevant Medical Hx

Symptoms approximately 1-3x/wk, approximately 2 months

No nocturnal symptoms

Claims to use rescue medication “a few times a month”

The best peak flow at the clinic is 405 L/minute

Current Medication

Budesonide 400 mcg/day

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Current Medication

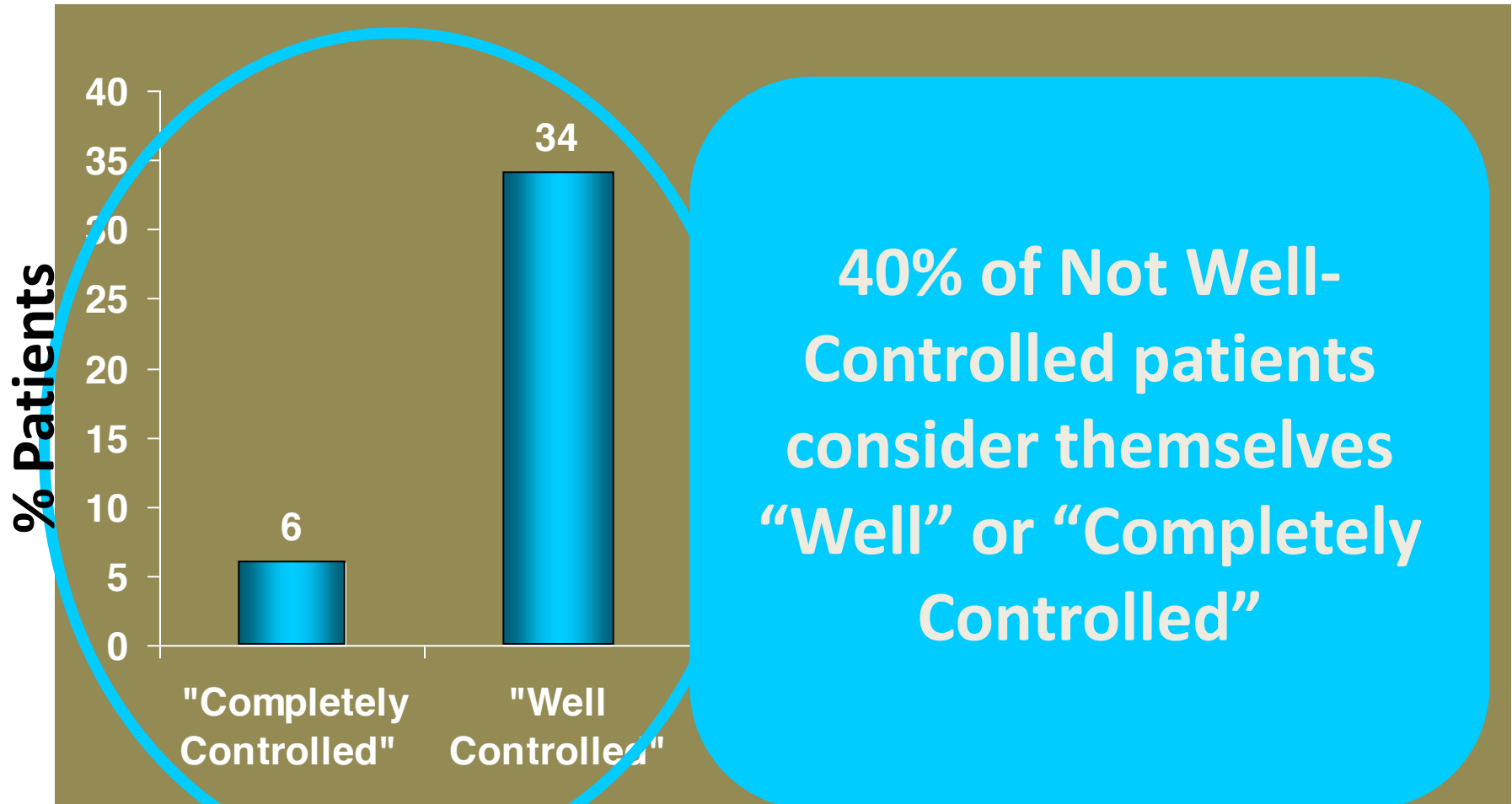
Budesonide 400 mcg/day

Q1. Which level of asthma control do you define in this patient?

1. Total control
2. Partial control
3. Uncontrolled
4. I don't know

Patients overestimate their asthma control

Self-reported level of control by Not Well-Controlled patients



NHWS: A population based cross-sectional survey conducted in 2006 in 2337 patients diagnosed with asthma in France (n=476), Germany (n=486), Italy (n=223), Spain (n=227) and the UK (n=915)
Not Well-Controlled defined as Asthma Control Test score ≤ 19

Desfougeres JL et al. Abstract 1590, ERS 2007

แบบประเมินการควบคุมโรคหืด (ACT™)



ขั้นที่ 1: กรุณาตอบคำถามแต่ละข้อโดยวงกลมตัวเลขในคำตอบที่คุณเลือก และนำตัวเลขนั้นไปเขียนในช่องสี่เหลี่ยมขวามือ กรุณาตอบตรงกับความเป็นจริงให้มากที่สุด เพื่อช่วยให้ทั้งตัวท่านและหมอของท่าน สามารถเข้าใจได้ถูกต้องว่าโรคหืดของท่าน เป็นอย่างไรบ้างในตอนนี

การทดสอบตั้งแต่ 15 ปีขึ้นไป
ADL
ในการควบคุมโรคหืดของตนเองได้

คำตา: Overall symptoms
แต่ละข้อ โดยวงกลมตัวเลขคำตอบที่ตรงกับความเป็นจริงที่สุดเพียงคำตอบเดียว

Nocturnal attack

Rescue med

Overall perception

มาตรฐานการควบคุมโรคหืดของคุณกันเลย

ในช่วง 4 สัปดาห์ที่ผ่านมา บ่อยแค่ไหนที่โรคหืดทำให้คุณไม่สามารถทำงานที่โดยทำได้ไม่ว่าจะเป็นงานที่ทำงาน ที่โรงเรียน หรือที่บ้าน ?

คำถาม 1



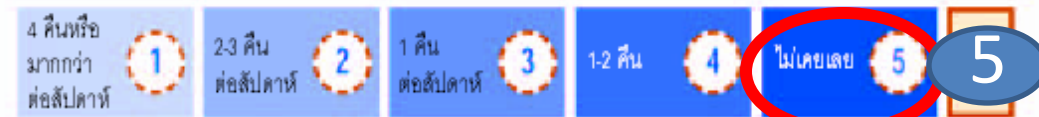
ในช่วง 4 สัปดาห์ที่ผ่านมา บ่อยแค่ไหนที่คุณรู้สึกหายใจไม่เต็ม ?

คำถาม 2



ในช่วง 4 สัปดาห์ที่ผ่านมา บ่อยแค่ไหนที่คุณมีอาการของโรคหืด (หายใจมีเสียงวี๊ดๆ ไอ หายใจไม่เต็ม แน่นหน้าอกหรือเจ็บหน้าอก) จนทำให้ต้องตื่นขึ้นกลางดึก หรือตื่นเช้ามืดกว่าปกติ ?

คำถาม 3



ในช่วง 4 สัปดาห์ที่ผ่านมา คุณต้องใช้ยาสูดพ่นขยายหลอดลมชนิดออกฤทธิ์เร็ว หรือยาเม็ดขยายหลอดลมชนิดออกฤทธิ์เร็ว บ่อยแค่ไหนเพื่อช่วยให้คุณหายใจได้ดีขึ้น ?

คำถาม 4



ในช่วง 4 สัปดาห์ที่ผ่านมา คุณคิดว่าคุณสามารถควบคุมโรคหืดของคุณได้ด้วยวงนัยแคไหน ?

คำถาม 5



คะแนน

ขั้นที่ 2: นำคะแนนในแต่ละข้อมาบวกกันเป็นคะแนนรวม

มาตรฐานการควบคุมโรคหืดของคุณกันเลย



คะแนน: 25 – ยอดแสดงความยินดี !

คุณสามารถควบคุมโรคหืดได้อย่างสมบูรณ์ในช่วง 4 สัปดาห์ที่ผ่านมา คุณไม่มีอาการหอบหืดที่เป็นข้อจำกัดในการใช้ชีวิตของคุณ ถ้าไม่มีอะไรเปลี่ยนแปลงไปจากที่เป็นอยู่นี้ ขอให้ไปพบหมอหรือพยาบาลของคุณ

คะแนน: 20 ถึง 24 – คุณทำได้แล้ว

คุณอาจจะควบคุมโรคหืดได้ดีแล้วในช่วง 4 สัปดาห์ที่ผ่านมา แต่ยังไม่สมบูรณ์แบบหรือพยาบาลของคุณน่าจะให้คำแนะนำได้ว่า คุณจะควบคุมโรคหืดให้ได้ผลสมบูรณ์ได้อย่างไร

คะแนน: น้อยกว่า 20 – คุณยังทำได้ไม่มากนัก

คุณอาจจะยังควบคุมโรคหืดได้ไม่มากนักในช่วง 4 สัปดาห์ที่ผ่านมา หมอหรือพยาบาลของคุณสามารถช่วยแนะนำ เพื่อปรับปรุงวิธีการควบคุมโรคหืดของคุณให้ได้ผลดีขึ้น

แบบประเมิน
การควบคุม
โรคหืด
(ACT™)



มาตรฐาน
การควบคุมโรคหืด
ของคุณกันเลย

GINA 2007: Levels of asthma control

Characteristic	Controlled (all of the following)	Partly controlled (any measure present in any week)	Uncontrolled
Daytime symptoms	None (≤ 2/week)	>2/week	Three or more features of partly controlled asthma present in any week
Limitations of activities	None	Any	
Nocturnal symptoms/ awakening	None	Any	
Need for reliever/ rescue treatment	None (≤ 2/week)	>2/week	
Lung function (PEF or FEV₁)	Normal	$<80\%$ predicted or personal best (if known)	
Exacerbations	None	≥ 1/year*	One in any week[†]

*Any exacerbation should prompt review of maintenance treatment to ensure that it is adequate

[†]By definition, an exacerbation in any week makes that an uncontrolled asthma week

GINA goals of treatment

The aim of asthma management
“TREATING TO ACHIEVE CONTROL”

Characteristic	Controlled (all of the following)	Partly Controlled (any measure present in any week)	Uncontrolled
Daytime symptoms	None (twice or less/week)	More than twice/week	Three or more features of partly controlled asthma present in any week
Nocturnal symptoms/ awakening	None	Any	
Need for reliever/ rescue medication	None (twice or less/week)	More than twice/week	
Limitations of activities	None (twice or less/week)	Any	
Lung function (PEF or FEV ₁)*	Normal	<80% predicted or best (if known)	
Exacerbations	None	One or more / year [†]	One in any week [‡]

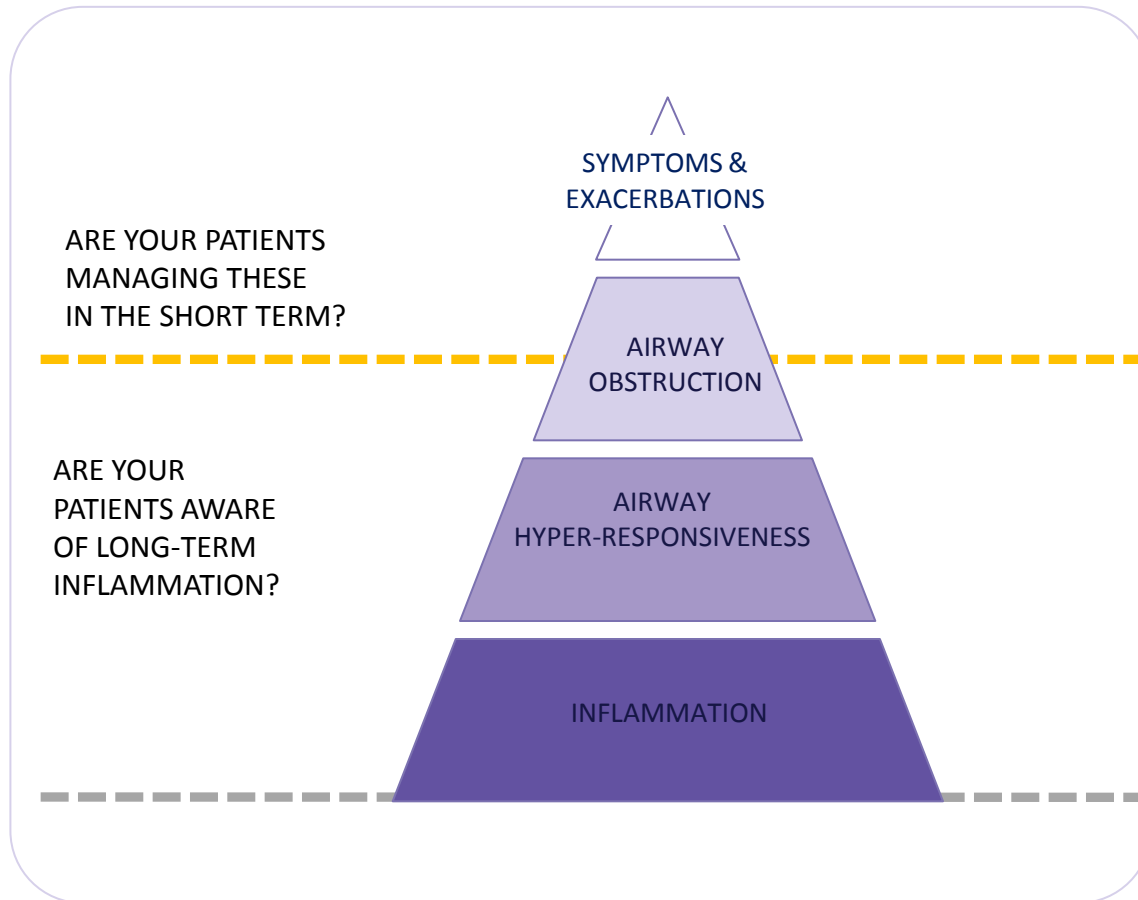


70%

Discuss about using PEF to monitor in asthma clinic

Asthma symptoms VS Asthma control

Symptoms and exacerbations represent
only *'the tip of the iceberg'*



**“Asthma, even during
symptom-free periods,
is characterised by
inflammation which
contributes to AHR”**

-Lundback B et al. 2006

Patient: Mrs. Ant

OPD visit (in schedule)

36 year old

Previously diagnosed with moderate persistent asthma

Physical exam: unremarkable

The best peak flow at the clinic is 405 L/minute, now PEFr only 70% predicted

Relevant Medical Hx

Symptoms approximately 1-3x/wk, approximately 2 months

No nocturnal symptoms

Claims to use rescue medication "a few times a month"

Current Medication

Budesonide 400 mcg/day

Q2. What would be the most appropriate treatment regimen?

1. The same dose of ICS, advise SABA prn
2. Double dose ICS
3. The same dose ICS + antileukotriene
4. ICS + LABA
5. The same dose ICS + theophylline

The aim is asthma control...

Characteristic	Controlled (all of the following)
Daytime symptoms	None (≤ 2/week)
Limitations of activities	None
Nocturnal symptoms/awakening	None
Need for reliever/rescue treatment	None (≤ 2/week)
Lung function (PEF or FEV₁)	Normal
Exacerbations	None

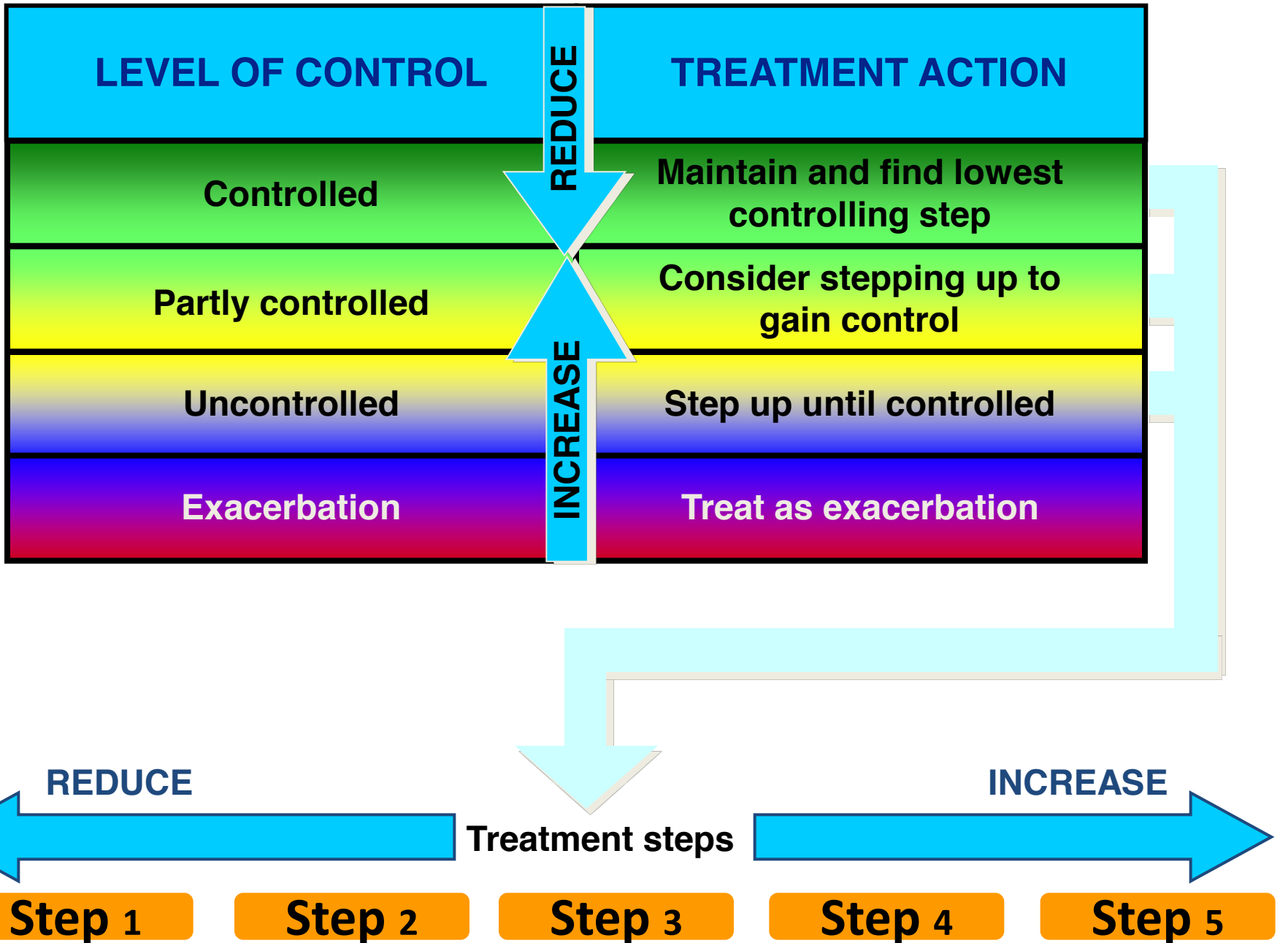
How can this be achieved and maintained?

Troubleshoot if Asthma Is not Under control

List of common factors affecting control

AIRESMOG

- A** Allergy and **A**dherence to therapy
- I**nfection and **I**nflammation
- R**hinitis and **R**hinosinusitis
- E**xercise and **E**rror in diagnosis
- S**moking and **pS**ychogenic factors
- M**edication(Beta blocker, NSAID, Aspirin)
- O**ccupational exposures, **O**besity and **O**SA
- G**ERD



Daily ICS Dosages

	mcg/puff or inhalation	Low Dose, mcg	Medium Dose, mcg	High Dose, mcg
Beclomethasone HFA	40 or 80	80–240	> 240–480	> 480
Budesonide DPI*	90 or 180	360–720	> 720–1440	> 1440
Flunisolide	250	500–1000	1000–2000	> 2000
Flunisolide HFA	80	320	> 320–640	> 640
Fluticasone HFA	44, 110 or 220	88–264	> 264–440	> 440
Fluticasone DPI	50,100 or 250	100–300	> 300–500	> 500
Mometasone DPI	220	220	440	> 440
Triamcinolone acetonide	75	300–750	> 750–1500	> 1500

* Indicated for patients ≥ 18 years of age

DPI = dry powder inhalation, HFA = hydrofluoroalkane

Adapted from 2007 NHLBI Expert Panel Guidelines (EPR-3).

REDUCE

INCREASE

Treatment steps

Step 1

Step 2

Step 3

Step 4

Step 5

Asthma education
Environmental control

As-needed rapid-acting β_2 -agonist

As-needed rapid-acting β_2 -agonist

Select one

Select one

Add one or more

Add one or both

Low-dose inhaled ICS

Low-dose ICS plus long-acting β_2 -agonist

Medium-or high-dose ICS plus long-acting β_2 -agonist

Oral glucocorticosteroid (lowest dose)

Leukotriene modifier

Medium-or high-dose ICS

Leukotriene modifier

Anti-IgE treatment

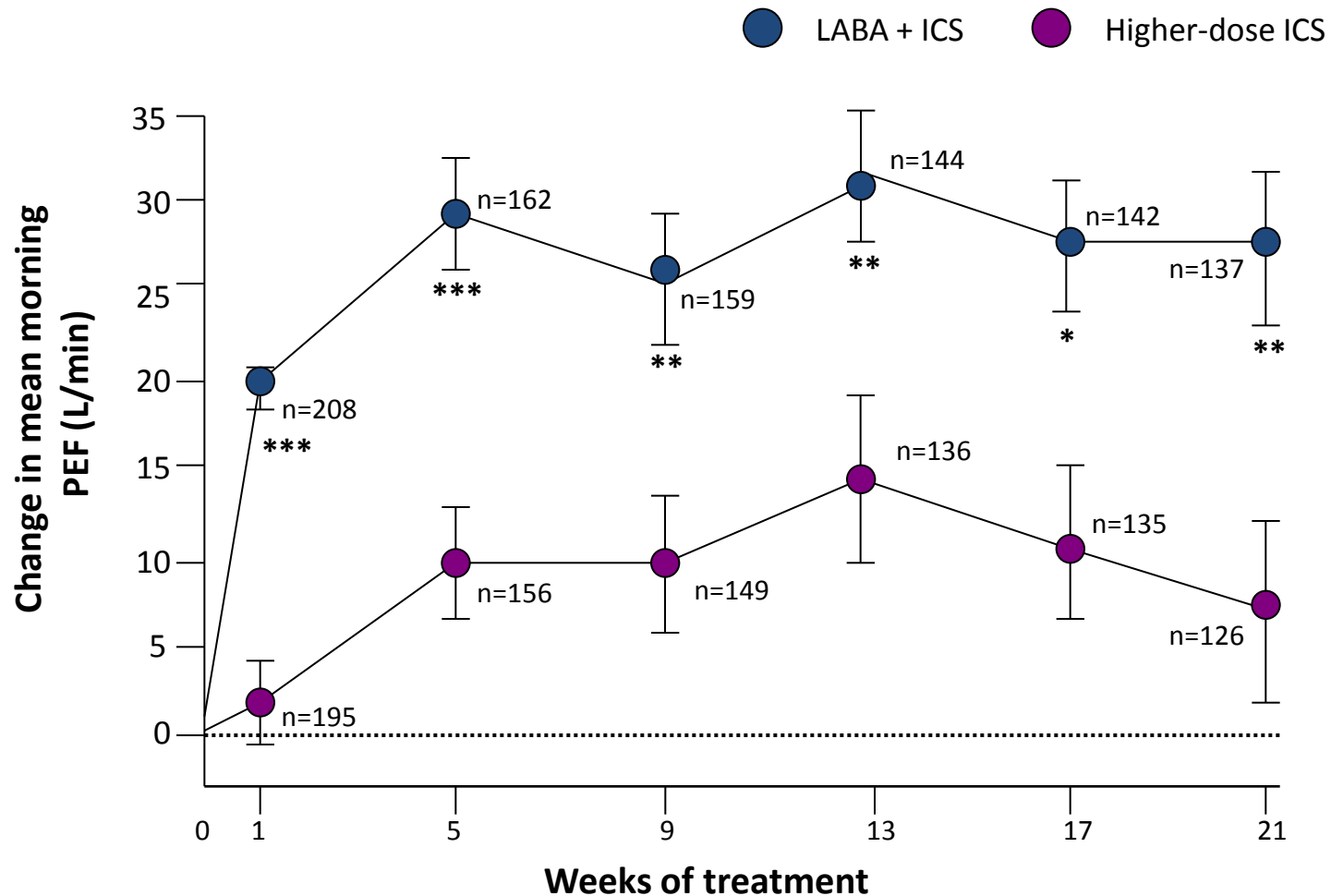
Controller options

Low-dose ICS plus leukotriene modifier

Sustained release theophylline

Low-dose ICS plus sustained release theophylline

Adding a LABA versus higher-dose ICS in patients with uncontrolled asthma on ICS alone



*p<0.05; **p<0.01; ***p<0.001

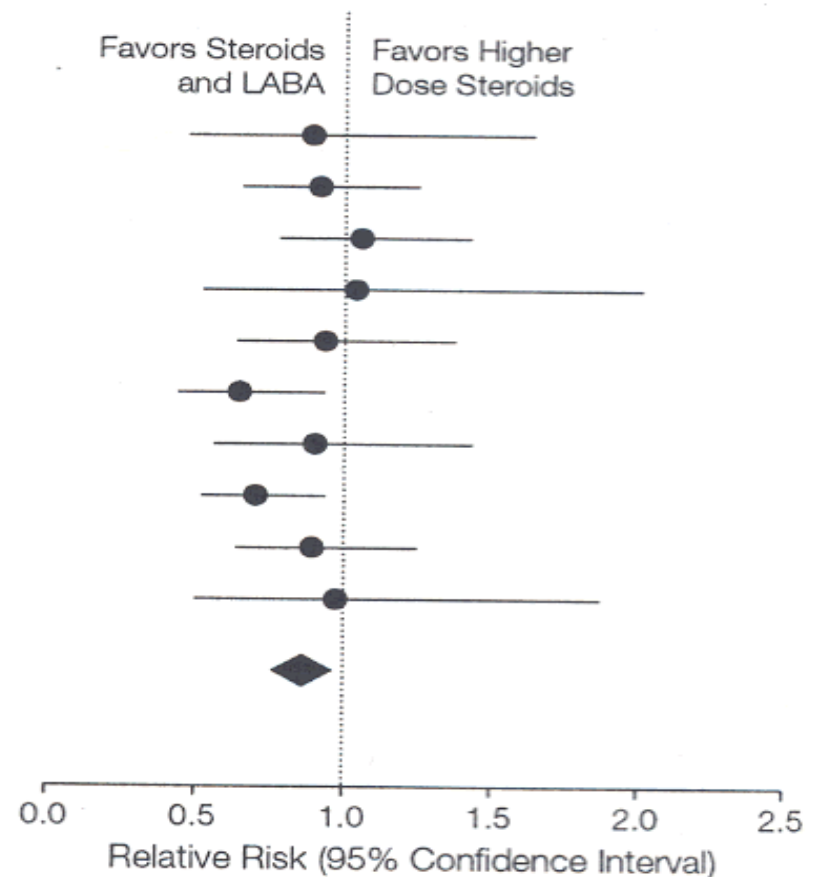
Pharmacological Management to Reduce Exacerbations in Adults with Asthma

A Systematic Review and Meta-Analysis

Effects of ICS & LABA vs Higher-Dose ICS

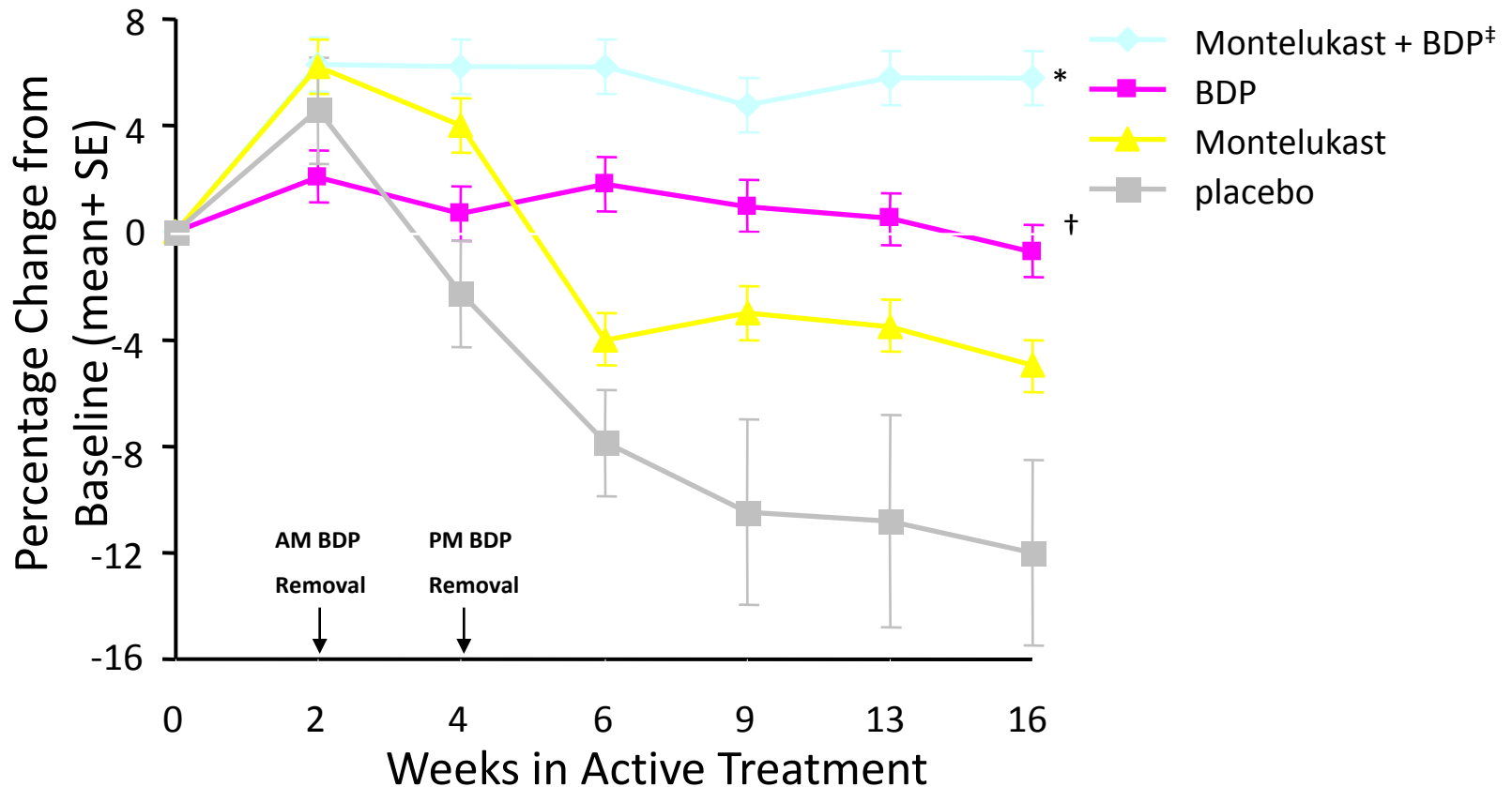
Study	Participants, No.	Age, y, Mean (SD)*	FEV ₁ , % Predicted, Mean (SD)*
Greening, ⁶⁹ 1994	426	48 (16)	74 (19)
Woolcock, ⁷¹ 1996	738	44	73
Pauwels, ²⁸ 1997	852	43	76
Van Noord, ⁷⁰ 1999	274	47 (15)	72 (16)
Murray, ⁵¹ 1999	514	42 (13)	65 (10)
Matz, ⁶⁵ 2001	925	37 (13)	61 (11)
Jenkins, ⁶⁷ 2001	353	46	70
O'Byrne, ²⁵ 2002	635	31	90 (15)
Ind, ²⁹ 2003	496	45 (15)	2.3 (0.9) L [†]
Laloo, ⁶⁸ 2003	467	41	81

Pooled Summary
 (RR, 0.86; 95% CI, 0.76-0.97;
 Test for Heterogeneity: $\chi^2 = 6.88, P = .65$)



Sinn DD et al. JAMA 2004; 292:367-376.

Montelukast as Add-on Therapy and Substitute for ICS: FEV₁

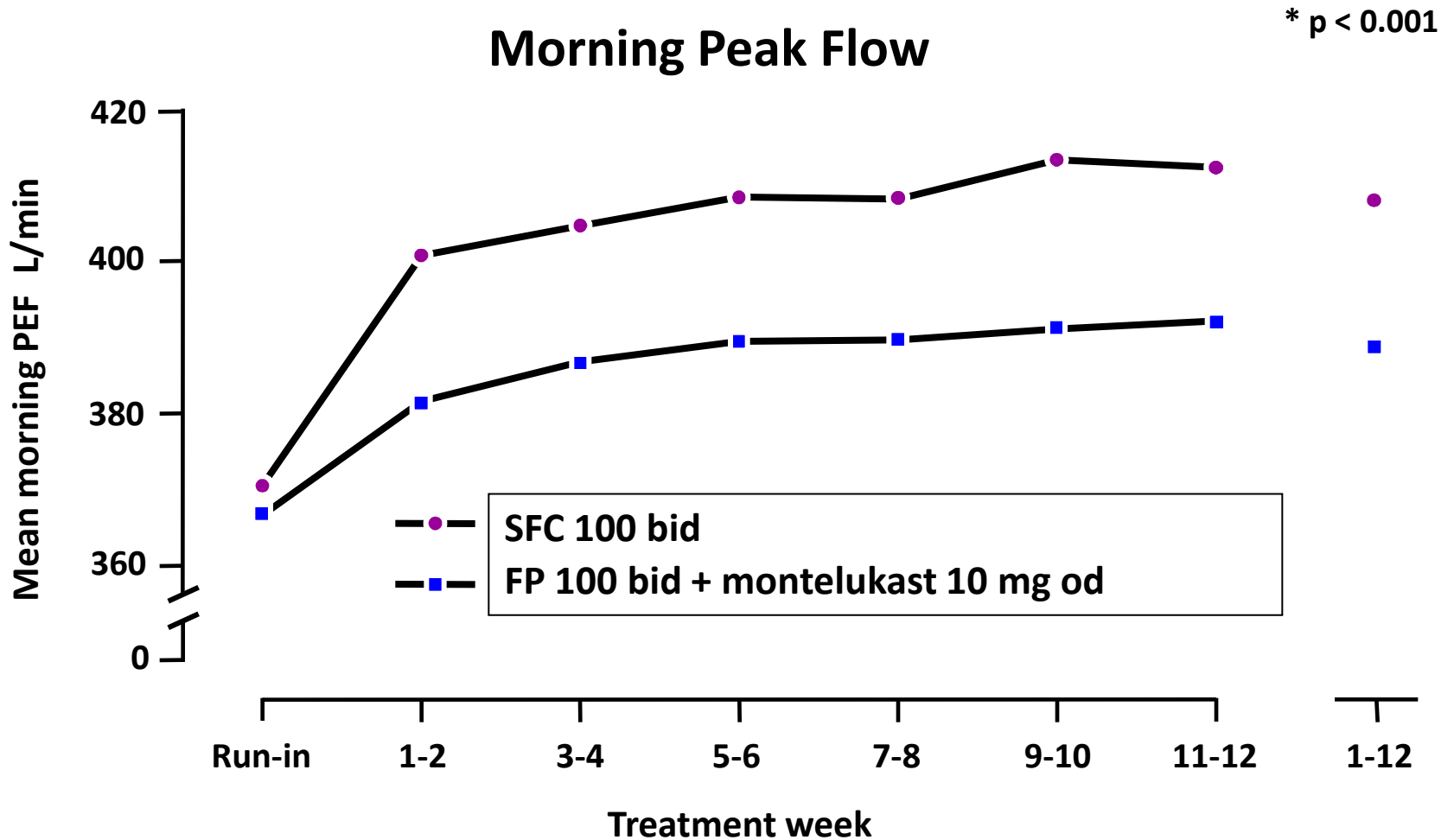


* $P < 0.001$ montelukast + BDP vs BDP

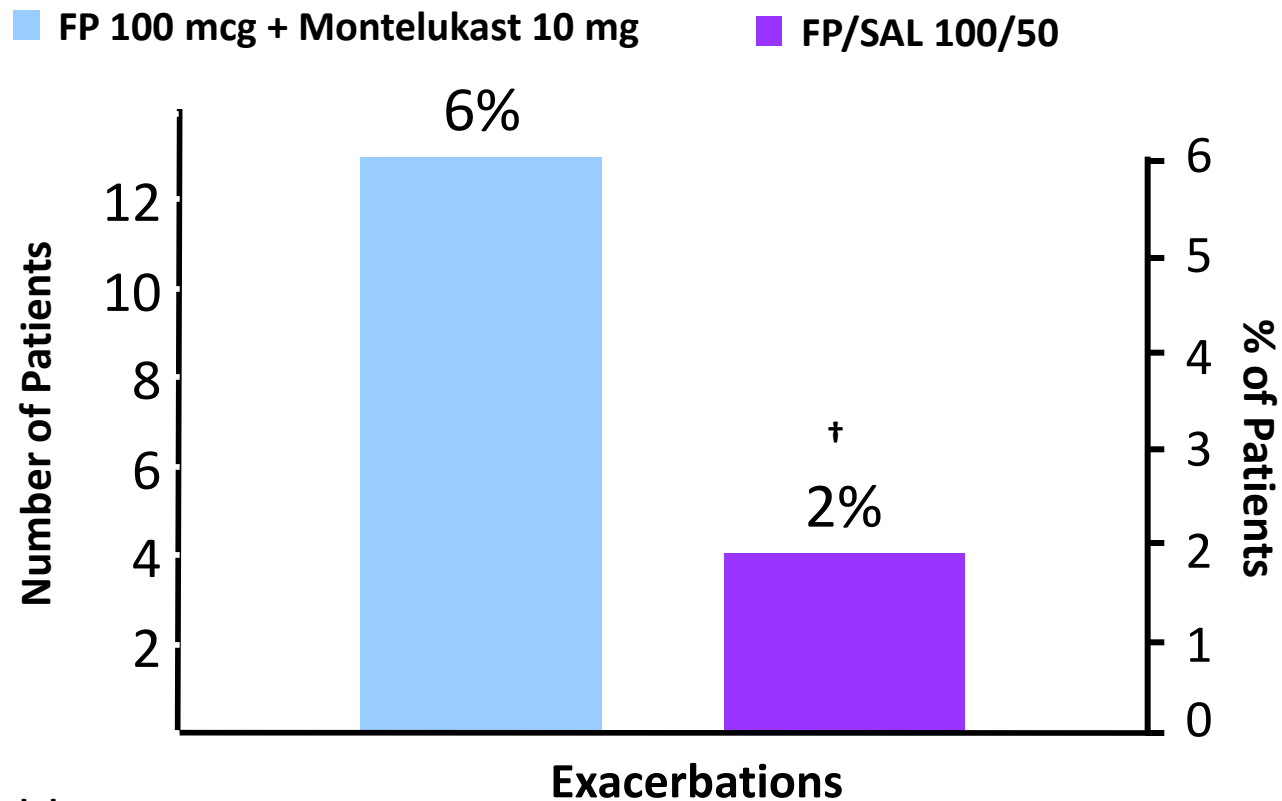
† BDP statistically better compared to Montelukast (95% CI)

‡ Beclomethasone dipropionate

ICS / LABA vs ICS + LTRA



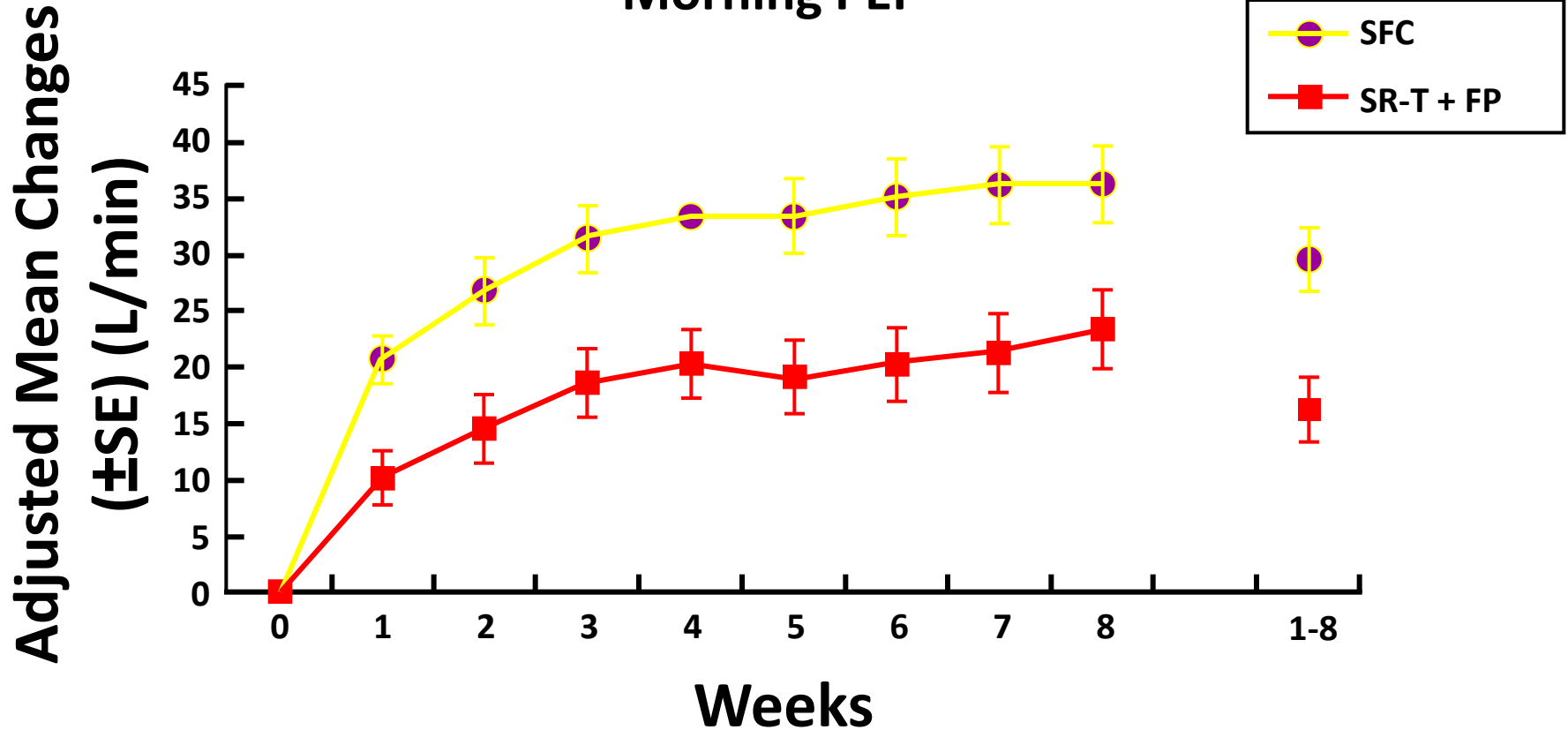
Significantly Fewer Asthma Exacerbations*



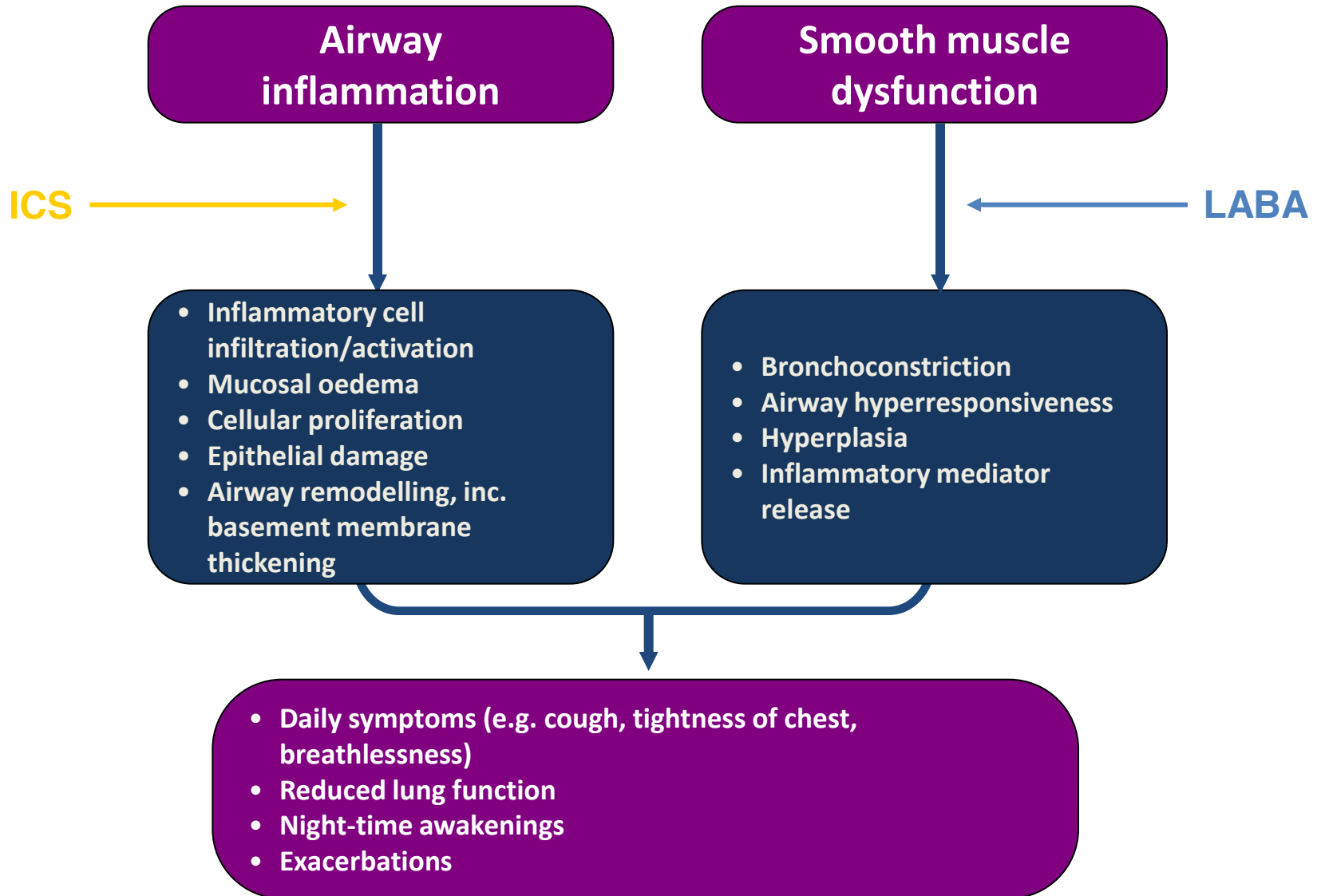
* Defined as any requirement for asthma medications other than those permitted by the protocol.

ICS +LABA vs ICS + SR Theophylline

Morning PEF

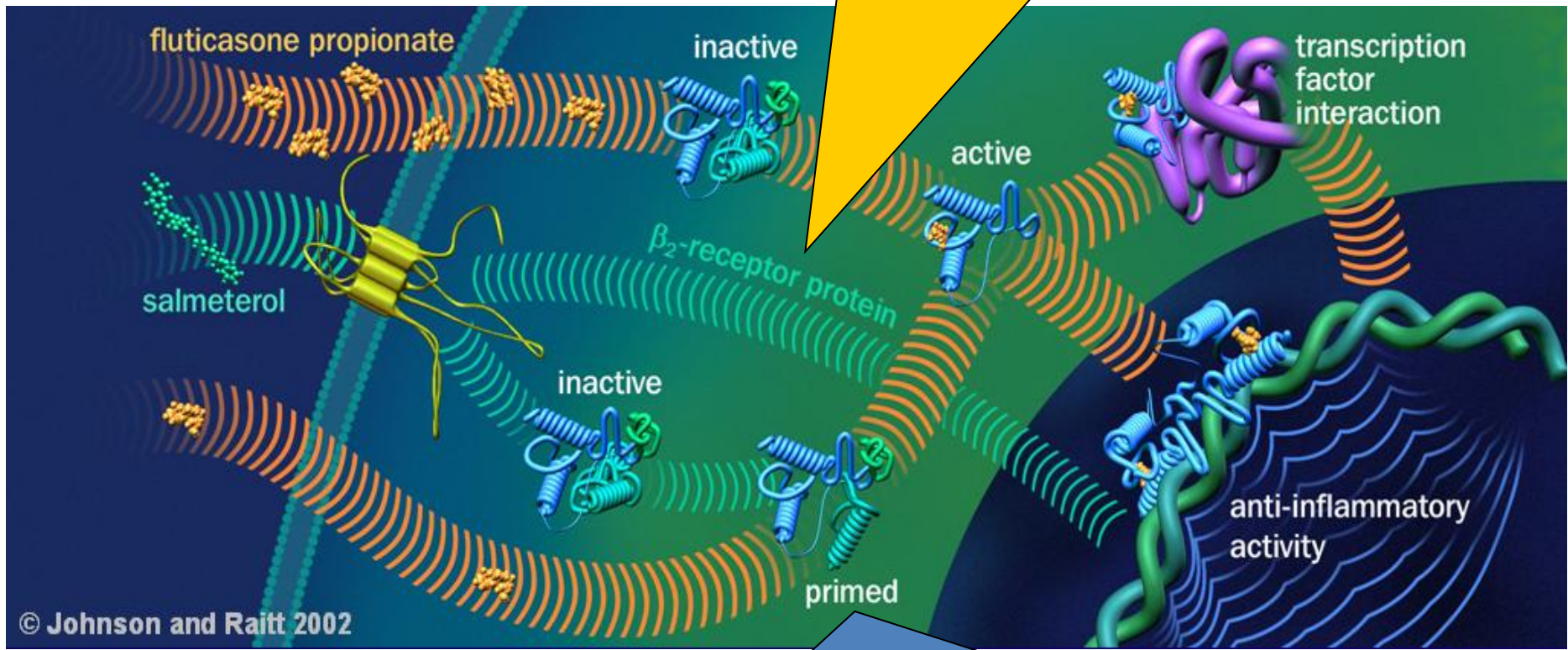


Benefits of ICS and LABA in asthma



Synergistic interactions between salmeterol and FP

Fluticasone propionate increases the number of β_2 -receptors



Salmeterol primes corticosteroid receptors and increases translocation into the nucleus

3 months later

แบบประเมินการควบคุมโรคหืด (ACT™)



มาตรฐานการควบคุมโรคหืดของคุณกันเลย

ขั้นที่ 1: กรุณาตอบคำถามแต่ละข้อโดยวงกลมตัวเลขในคำตอบที่คุณเลือก และนำตัวเลขนั้นไปเขียนในช่องสี่เหลี่ยมขวามือ กรุณาตอบตรงกับความเป็นจริงให้มากที่สุด เพื่อช่วยให้ทั้งตัวท่านและหมอของท่าน สามารถเข้าใจได้ถูกต้องว่าโรคหืดของท่าน เป็นอย่างไรบ้างในตอนนี

การทดสอบตั้งแต่ 15 ปีขึ้นไป
ADL
ในการควบคุมโรคหืดของตนเองได้

คำถาม Overall symptoms
แต่ละข้อ โดยวงกลมตัวเลขคำตอบที่ตรงกับความเป็นจริงที่สุดเพียงคำตอบเดียว

Nocturnal attack

Rescue med

Overall perception

มาตรฐานการควบคุมโรคหืดของคุณกันเลย

ในช่วง 4 สัปดาห์ที่ผ่านมา บ่อยแค่ไหนที่โรคหืดทำให้คุณไม่สามารถทำงานที่โดยทำได้
ไม่ว่าจะเป็นงานที่ทำงาน ที่โรงเรียน หรือที่บ้าน ?

คำถาม 1



ในช่วง 4 สัปดาห์ที่ผ่านมา บ่อยแค่ไหนที่คุณรู้สึกหายใจไม่เต็ม?

คำถาม 2



ในช่วง 4 สัปดาห์ที่ผ่านมา บ่อยแค่ไหนที่คุณมีอาการของโรคหืด (หายใจมีเสียงวี๊ดๆ ไอ หายใจไม่เต็ม แน่นหน้าอกหรือเจ็บหน้าอก) จนทำให้ต้องตื่นขึ้นกลางดึก หรือตื่นเช้ากว่าปกติ ?

คำถาม 3



ในช่วง 4 สัปดาห์ที่ผ่านมา คุณต้องใช้ยาสูดพ่นขยายหลอดลมชนิดออกฤทธิ์เร็ว หรือยาเม็ดขยายหลอดลมชนิดออกฤทธิ์เร็ว บ่อยแค่ไหนเพื่อช่วยให้คุณหายใจได้ดีขึ้น ?

คำถาม 4



ในช่วง 4 สัปดาห์ที่ผ่านมา คุณคิดว่าคุณสามารถควบคุมโรคหืดของคุณได้ดีมากน้อยแค่ไหน ?

คำถาม 5



คะแนน

23

ขั้นที่ 2: นำคะแนนในแต่ละข้อมาบวกกันเป็นคะแนนรวม

GINA goals of treatment

The aim of asthma management
“TREATING TO ACHIEVE CONTROL”

Characteristic	Controlled (all of the following)	Partly Controlled (any measure present in any week)	Uncontrolled
Daytime symptoms	None (twice or less/week)	More than twice/week	Three or more features of partly controlled asthma present in any week
Nocturnal symptoms/ awakening	None	Any	
Need for reliever/ rescue medication	None (twice or less/week)	More than twice/week	
Limitations of activities	None (twice or less/week)	Any	
Lung function (PEF or FEV ₁)*	90%	<80% predicted or personal best (if known)	
Exacerbations	None	One or more / year [†]	One in any week [‡]

Mrs. Ant

นางสาว..... HN.....

Asthma/ COPD No.....

Predicted PEFR.....L/min

Predicted FVC.....L

Predicted FEV₁.....L

The best PEFR 405 L/minute

Date	Day symptoms	Night symptoms	Bronchodilator used	Unscheduled Clinic/ER visit	Admission	Adverse effect	PEFR (L/min, %)	Sputum	Dyspnoea score	Previous treatment	New treatment
	✓	✓					70%		0	Budesonide 400 mcg/day	SF (50/250) 1*2
Lung function	Pre-bron (L, %)		Post-bron (L, %)								
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
	✓	✓					90%		0	SF (50/250) 1*2	
Lung function	Pre-bron (L, %)		Post-bron (L, %)								
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)		Post-bron (L, %)								
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)		Post-bron (L, %)								
- FVC											
- FEV ₁											
- FEV ₁ /FVC											

ACT 22

ACT 23

3 months later

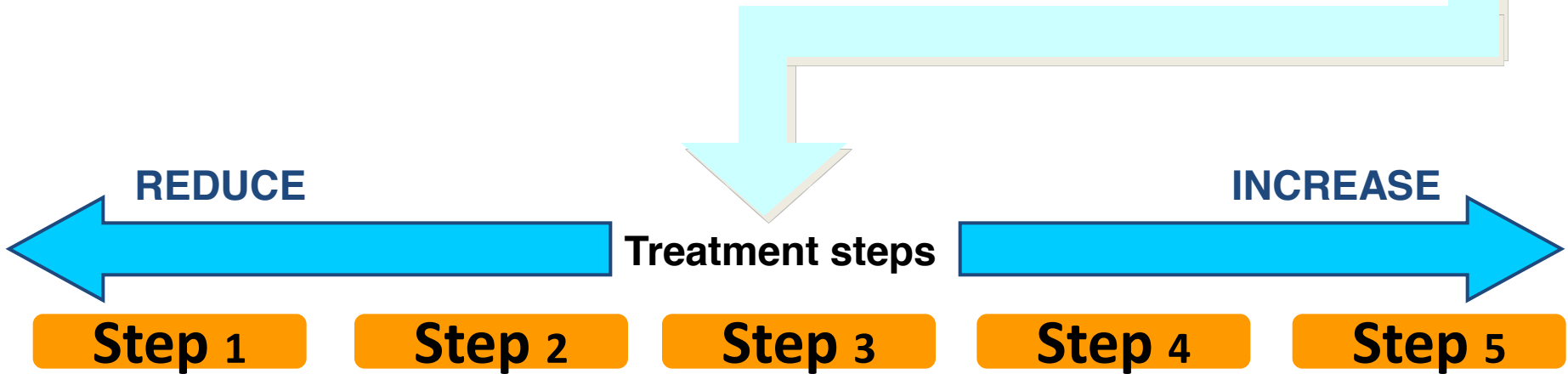
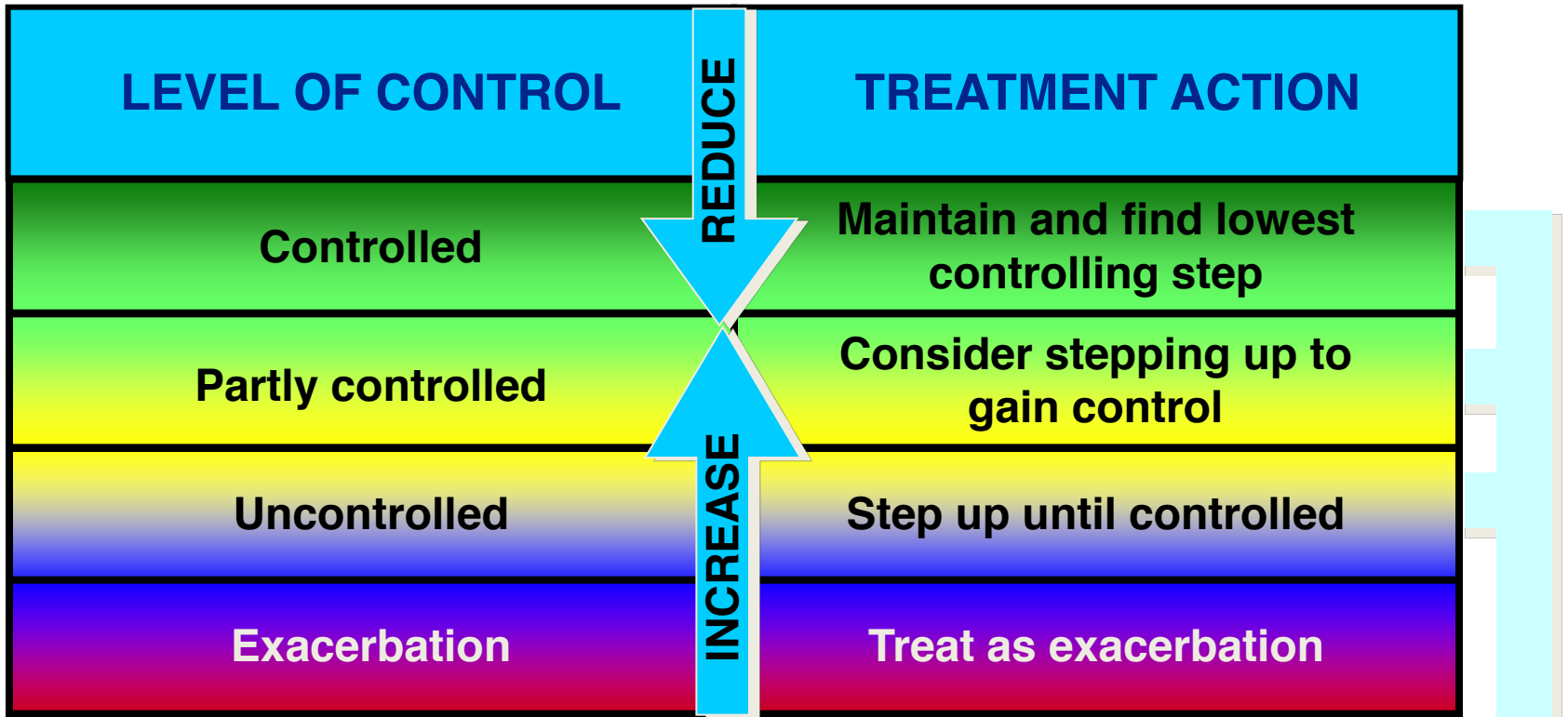
Q3. Does Mrs. Ant achieve the goal of treatment?

1. Yes

2. No

Q4. What do you plan to do further?

1. Consider stepping down the treatment
2. Continue the last medicine
3. Send the patient to perform spirometry before making a decision
4. Send the patient to perform PC20 before making a decision
5. I don't know



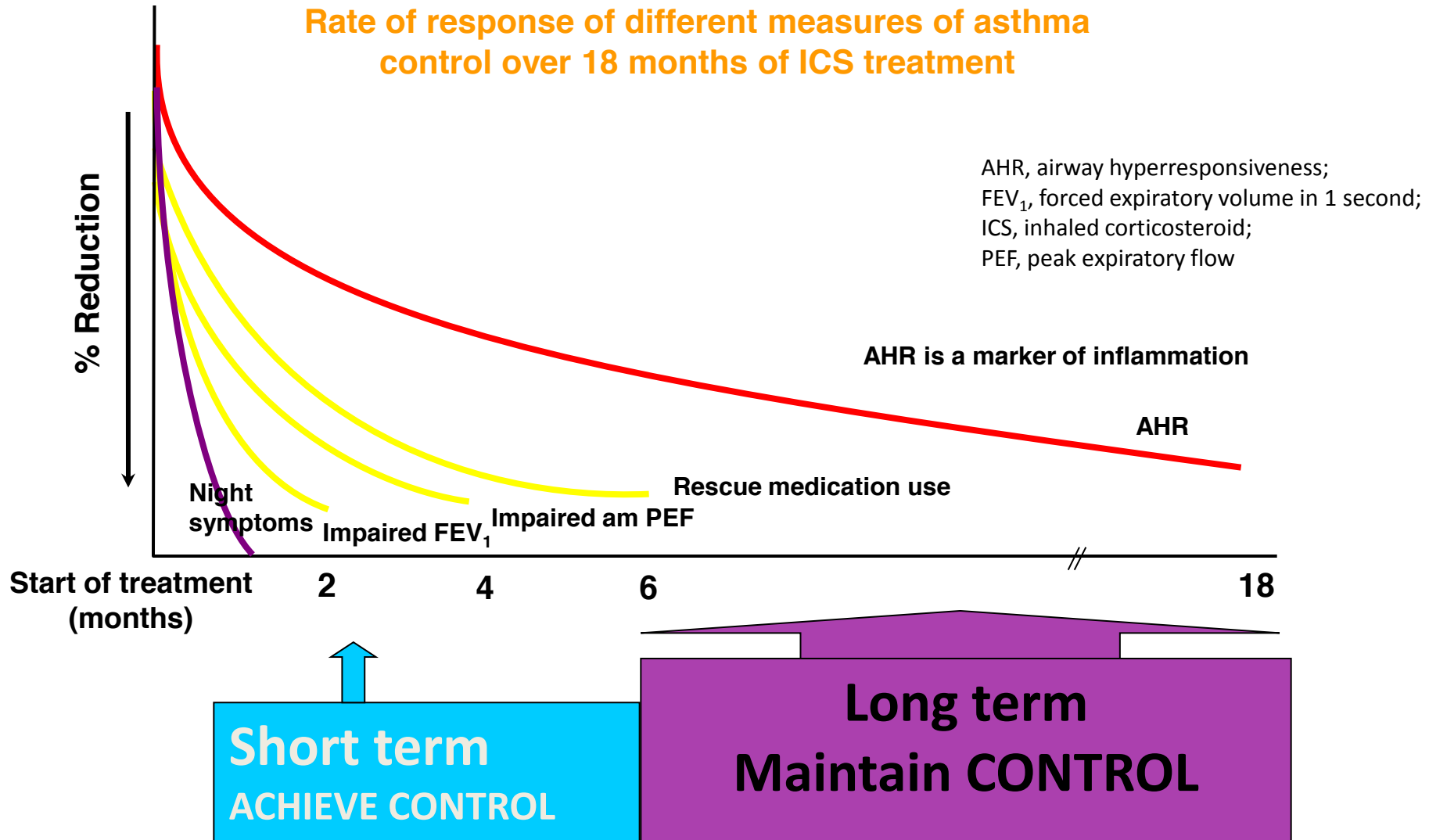
Regular use of treatment in practice: stepping down

When to consider stepping down:

- The aim is to achieve then maintain control for prolonged periods (i.e. sustained prevention of symptoms)
- For most controller medications, improvement begins within days but full benefit can take 3 or 4 months
- If control is maintained for at least 3 months, stepping down with a gradual, stepwise reduction is recommended
- The goal is to decrease treatment to the lowest dose of medication necessary **to maintain control**

Treating ongoing inflammation

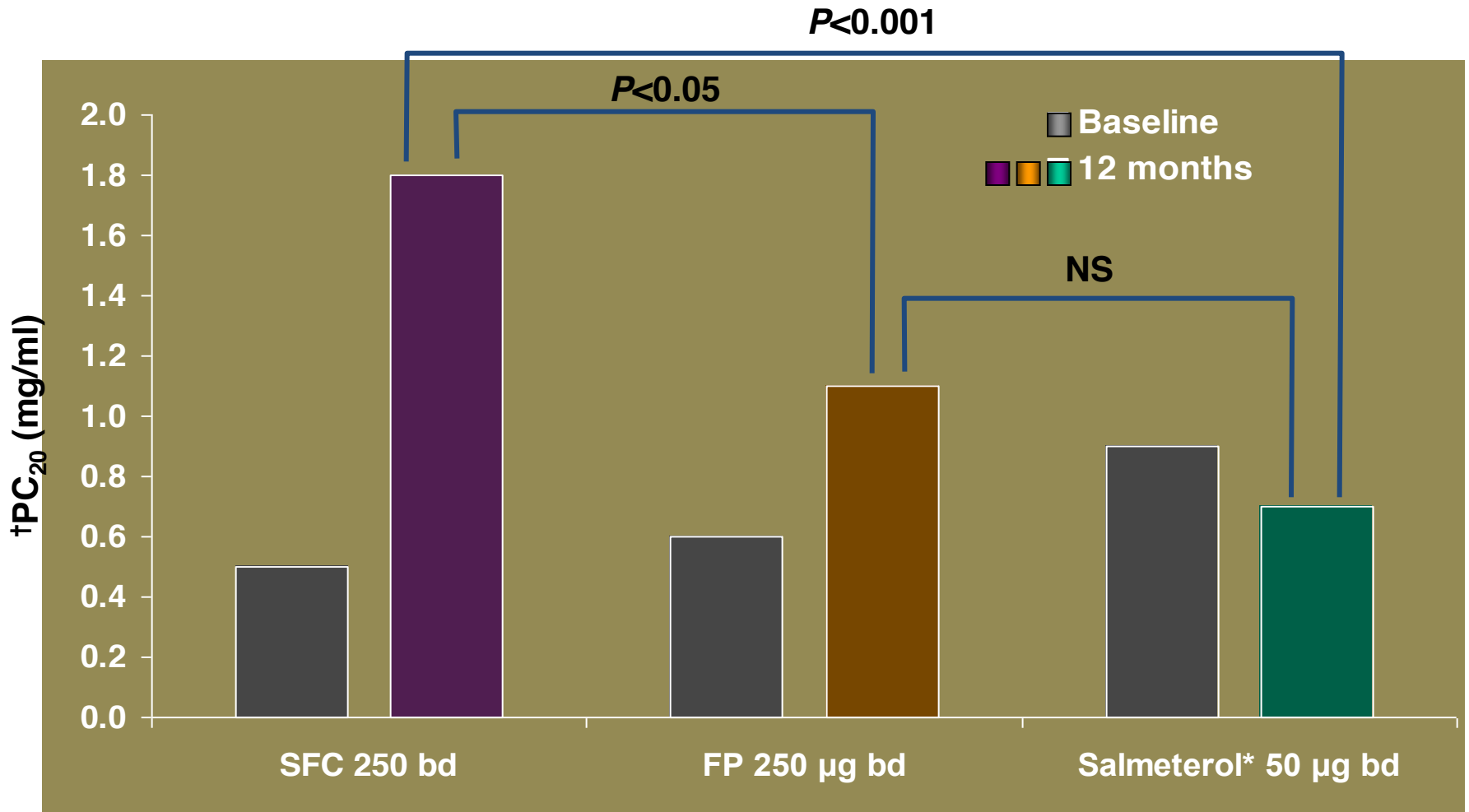
Rate of response of different measures of asthma control over 18 months of ICS treatment



An ongoing requirement for rescue medication is a sign that the underlying inflammation is uncontrolled

Control of airway inflammation

Improvement in AHR after 1 year of treatment



†Geometric mean adjusted for baseline value, stratum, age and sex

*Salmeterol is not approved for use as monotherapy in asthma
AHR, airway hyperresponsiveness; NS, not significant

Questions for Dr.Watchara

- What is the optimal duration to step down ?
 - Is the 3 month-duration enough?
 - Issues about AHR and poor perception
- If we have the facility, should spirometry be performed before stepping down the treatment?
 - How to detect patients with poor perception
- Could PEFr replace spirometry?

Q5. Which regimen do you consider stepping down to?

1. Half dose ICS + LABA
2. Double dose ICS
3. The same dose ICS
4. Half dose ICS
5. LABA



Pretest Question

To make a definitive diagnosis of COPD, which of the following is the most important factor that would lead you to an accurate diagnosis?

1. An abnormal spirometry test
2. The patient's history of smoking
3. A chest x-ray that shows flattening of the diaphragm and focal bullae
4. Decreased functional capacity on the 6-minute walk test

Pretest Question

A 53-year-old white male presents for his annual visit. Although he quit 10 years ago, he is a previous cigarette smoker with a 20 pack-year history. During the past 12 months, he has had 3 episodes of bronchitis. You perform a spirometry and the results show $FEV_1/FVC=0.6$, and the FEV_1 is 67% of predicted. How would you classify his COPD?

1. Mild COPD
2. Moderate COPD
3. Severe COPD
4. Not sure



Therapy at Each Stage of COPD

I: Mild

II: Moderate

III: Severe

IV: Very Severe

- $FEV_1/FVC < 70\%$
- $FEV_1 \geq 80\%$ predicted

- $FEV_1/FVC < 70\%$
- $50\% \leq FEV_1 < 80\%$ predicted

- $FEV_1/FVC < 70\%$
- $30\% \leq FEV_1 < 50\%$ predicted

- $FEV_1/FVC < 70\%$
- $FEV_1 < 30\%$ predicted
or $FEV_1 < 50\%$ predicted plus chronic respiratory failure

Active reduction of risk factor(s); influenza vaccination

Add short-acting bronchodilator (when needed)

Add regular treatment with one or more long-acting bronchodilators (when needed); **Add** rehabilitation

Add inhaled glucocorticosteroids if repeated exacerbations

Add long term oxygen if chronic respiratory failure. **Consider** surgical treatments

Pretest Question

When a patient progresses from moderate to severe classification of COPD and has **history of AE**, what would be the most appropriate addition to their current treatment regimen?

1. Theophylline
2. PDE4 inhibitor
3. LAMA
4. LABA
5. ICS + LABA

Pretest Question

Which of the following goals can be achieved with current pharmacotherapy?

1. Improved exercise tolerance
2. Partial disease regression
3. Reduction of exacerbations
4. All of the above
5. 1 and 3 only

Case Study 2

Patient: Mr. Bean

OPD visit (not in schedule)

66 year old

Exsmoker with Hx of 20 pack-year smoking

Known COPD: post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

Relevant Medical Hx

Prior to this OPD visit he has been experiencing symptoms of increasing dyspnea, cough, sputum without fever for over 4 days

6 months ago, discharged from hospital after AECOPD ,which was his 1st admission in the past year

Performance status : breathlessness when going upstairs

Current Medication

Beradual 1-2 puffs PRN. q 4hr

Mr. Bean

.....นามสกุล.....HN.....

Asthma/ COPD No.....

Predicted PEFR.....L/min

post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

(not in schedule)

Date	Day symptoms	Night symptoms	Bronchodilator used	Unscheduled Clinic/ER visit	Admission	Adverse effect	PEFR (L/min, %)	Sputum	Dyspnoea score	Previous treatment	New treatment
	✓	✓	✓					✓	2	Beradual	
Lung function	Pre-bron (L, %)				Post-bron (L, %)				1-2 puffs PRN.		
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											

Case Study 2

Patient: Mr. Bean

OPD visit (not in schedule)

Physical examination:

RR 24 /min, BP 140/90 mmHg, HR 105 /min, BT 37 c, SpO2 room air 94%

Lung : expiratory wheezing both lungs

Others : unremarkable

Beradual 1 NB → improve

Lung: no wheezing, SpO2 room air 98%

Q1. Does Mr.Bean have acute exacerbation of COPD?

1. Yes
2. No

**WHAT IS THE DEFINITION FOR ACUTE
EXACERBATION OF COPD?**

What is the definition for acute exacerbation of COPD?

Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2014 defines an exacerbation as:

- An acute event characterized by a worsening of patient's respiratory symptoms that is beyond normal day to day variations and leads to a change in medicine.

Patient: Mr. Bean

OPD visit (not in schedule)

66 year old

Exsmoker with Hx of 20 pack-year smoking

Known COPD: post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

Relevant Medical Hx

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6 months ago, discharged from hospital after AECOPD ,which was his 1st admission in the past year

Performance status : breathlessness when going upstairs

Current Medication

Beradual 1-2 puffs PRN. q 4hr

Q2. What would be the most appropriate addition to his current treatment regimen?

1. SABA or SAMA 2 puff q 4 hour
2. LAMA
3. LABA
4. ICS + LABA
5. Theophylline

Patient: Mr. Bean

OPD visit (not in schedule)

66 year old

Exsmoker with Hx of 20 pack-year smoking

Known COPD: post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

Relevant Medical Hx

Prior to this OPD visit he has been experiencing symptoms of increasing dyspnea, cough, sputum without fever for over 4 days

6 months ago, discharged from hospital after AECOPD ,which was his 1st admission in the past year

Performance status : breathlessness when going upstairs

Current Medication

Beradual 1-2 puffs PRN. q 4hr

Q3. In your real practice, what would be the addition to his current treatment regimen?

1. SABA or SAMA 2 puff q 4 hour
2. LAMA
3. LABA
4. ICS + LABA
5. Theophylline

Q4. For Q2 and Q3, do you choose the same answer?

1. Yes

2. No

Q5. If No, why?

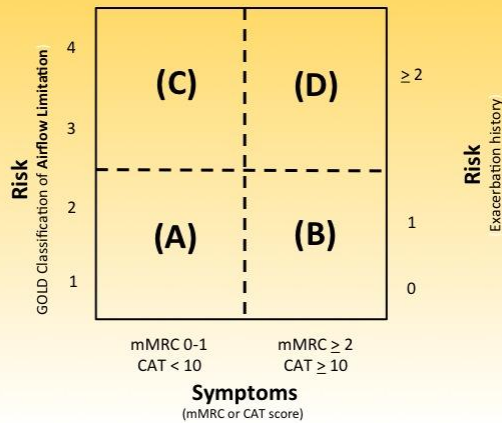
1. The patient cannot afford it(Q2). (financial problem)
2. This drug(Q2) is not available in my hospital.
3. I follow my hospital rule.
4. I know the guideline , but from my experience this drug (Q3) is effective and less expensive.
5. Others

Questions for Dr.Watchara

- Discuss about the following:
 - What prevention strategies (to reduce the frequency of acute exacerbations of COPD)
 - Compare the treatment for COPD stage C,D
 - How important is AECOPD? (as previous lecture)
 - Role ICS to prevent AE , weigh to side effect

Global Strategy for Diagnosis, Management and Prevention of COPD

Combined Assessment of COPD



*When assessing risk, choose the **highest risk** according to GOLD grade or exacerbation history*

Patient	Characteristic	Spirometric Classification	Exacerbations per year	mMRC	CAT
A	Low Risk Less Symptoms	GOLD 1-2	≤ 1	0-1	< 10
B	Low Risk More Symptoms	GOLD 1-2	≤ 1	≥ 2	≥ 10
C	High Risk Less Symptoms	GOLD 3-4	≥ 2	0-1	< 10
D	High Risk More Symptoms	GOLD 3-4	≥ 2	≥ 2	≥ 10

Global Strategy for Diagnosis, Management and Prevention of COPD

Modified MRC (mMRC) Questionnaire

PLEASE TICK IN THE BOX THAT APPLIES TO YOU
(ONE BOX ONLY)

mMRC Grade 0. I only get breathless with strenuous exercise.

mMRC Grade 1. I get short of breath when hurrying on the level or walking up a slight hill.

mMRC Grade 2. I walk slower than people of the same age on the level because of breathlessness, or I have to stop for breath when walking on my own pace on the level.

mMRC Grade 3. I stop for breath after walking about 100 meters or after a few minutes on the level.

mMRC Grade 4. I am too breathless to leave the house or I am breathless when dressing or undressing.

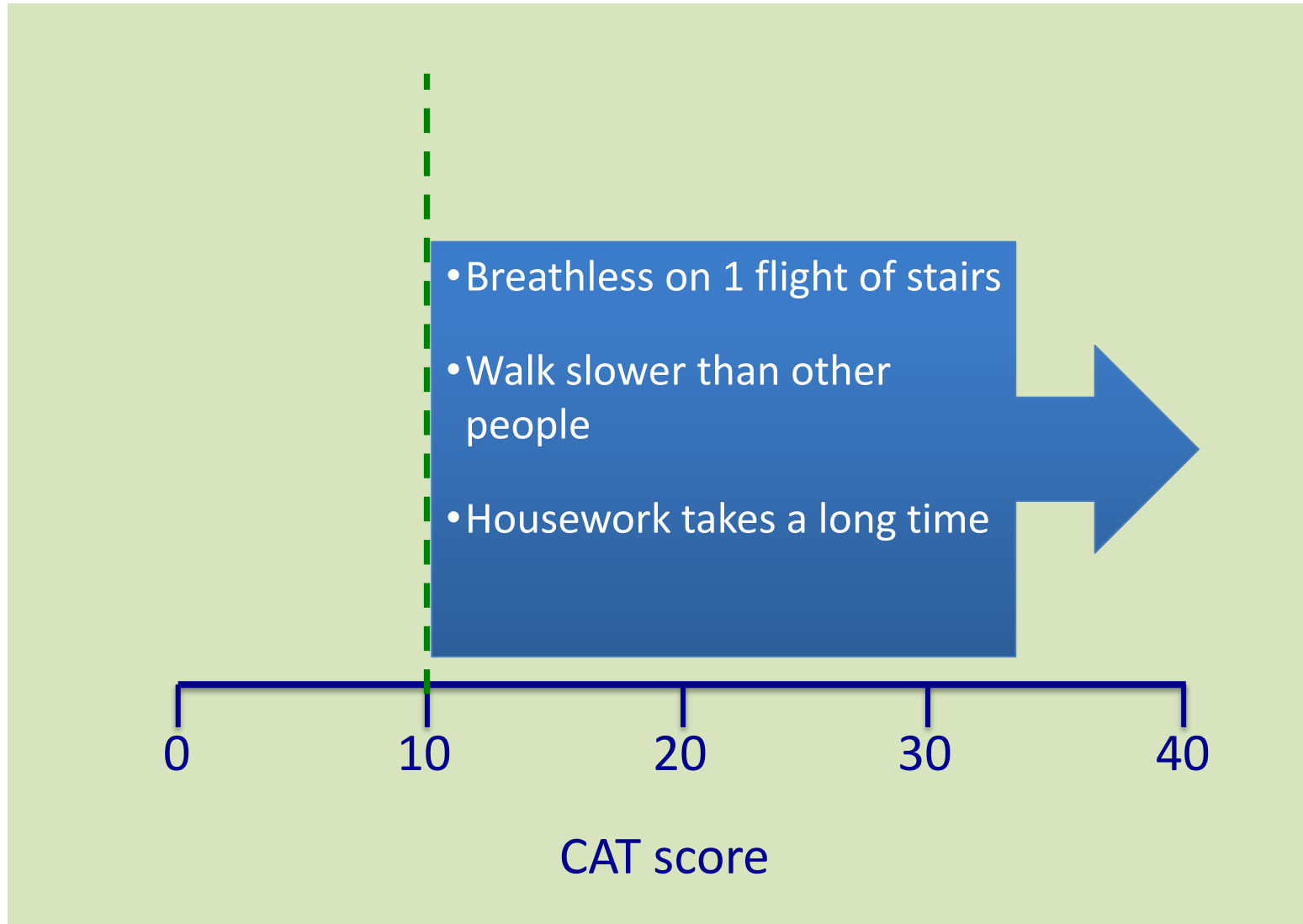
COPD Assessment Test (CAT)

I never cough	0 X 2 3 4 5	I cough all the time	<input type="checkbox"/>
I have no phlegm (mucus) in my chest at all	0 X 2 3 4 5	My chest is completely full of phlegm (mucus)	<input type="checkbox"/>
My chest does not feel tight at all	0 1 X 3 4 5	My chest feels very tight	<input type="checkbox"/>
When I walk up a hill or one flight of stairs I am not breathless	0 1 2 3 X 5	When I walk up a hill or one flight of stairs I am very breathless	<input type="checkbox"/>
I am not limited doing any activities at home	0 1 2 X 4 5	I am very limited doing activities at home	<input type="checkbox"/>
I am confident leaving my home despite my lung condition	0 1 2 3 X 5	I am not at all confident leaving my home because of my lung condition	<input type="checkbox"/>
I sleep soundly	0 1 X 3 4 5	I don't sleep soundly because of my lung condition	<input type="checkbox"/>
I have lots of energy	0 1 2 3 4 X	I have no energy at all	<input type="checkbox"/>

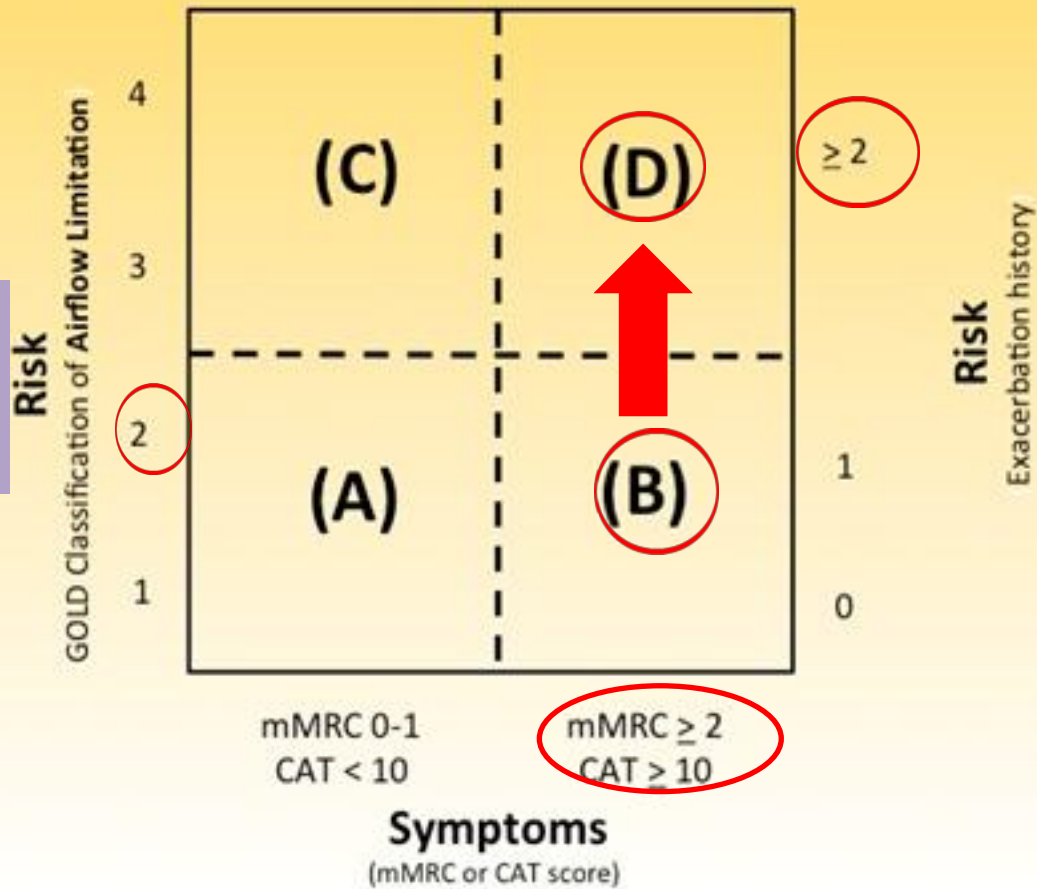
Scoring range 0-40

Total score

Symptom severity



post-bronchodilator FEV1 55%



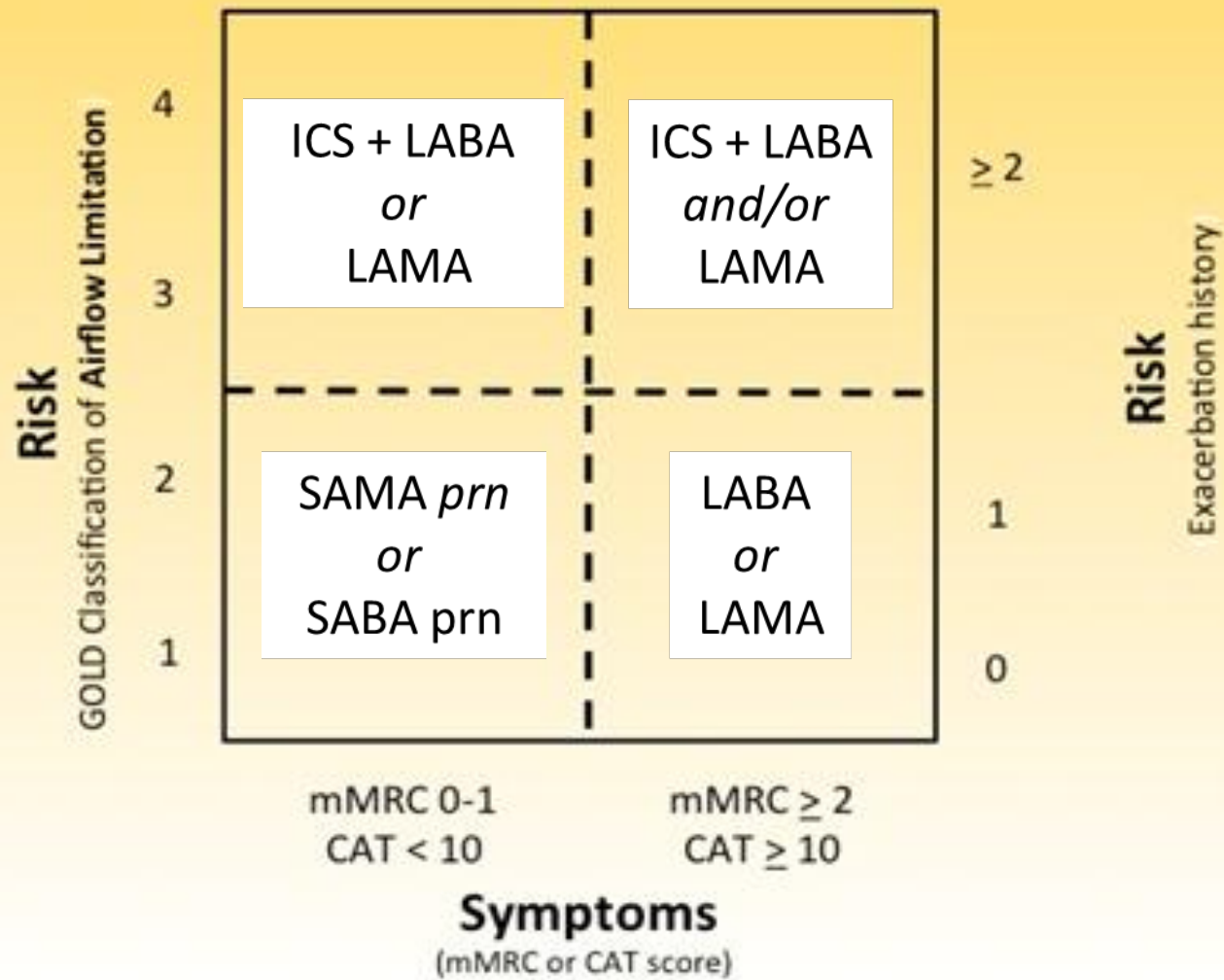
breathlessness when going upstairs

Overview of Medications for stable COPD

	SABA/SAMA				LAMA or LABA				ICS/LABA				PDE4			
	1	2	3	4	1	2	3	4	1	2*	3	4	1	2	3	4
<i>Symptom Reduction</i>	1	2	3	4	1	2	3	4	1	2*	3	4	1	2	3	4
Relieve symptoms	✓	✓	✓	✓	-	✓	✓	✓		✓	✓	✓	-	-	?	?
Improve exercise tolerance	-	-	-	-	-	✓	✓	✓		-	-	-	-	-	-	-
Improve health status	-	-	-	-	-	✓	✓	✓		✓	✓	✓	-	-	-	-
<i>Risk Reduction</i>	1	2	3	4	1	2	3	4	1	2*	3	4	1	2	3	4
Prevent disease progression	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Prevent and treat exacerbations	-	-	-	-	-	✓	✓	✓	-	✓	✓	✓	-	-	✓	✓
Reduce mortality	-	-	-	-	-	-	-	-	-	?	?	?	-	-	-	-

*Less than 60% FEV₁ (pre bronchodilator)

Not on a background of ICS



Patient: Mr. Bean

OPD visit (not in schedule)

66 year old

Exsmoker with Hx of 20 pack-year smoking

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Relevant Medical Hx

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6 months ago, discharged from hospital after AECOPD ,which was his 1st admission in the past year

Performance status : breathlessness when going upstairs

Current Medication

Beradual 1-2 puffs PRN. q 4hr

Q2. What would be the most appropriate addition to his current treatment regimen?

1. SABA or SAMA 2 puff q 4 hour

✓ 2. LAMA

3. LABA

✓ 4. ICS + LABA

5. Theophylline

Questions for Dr.Watchara

- Discuss about the following:
 - Compare the treatment for COPD
 - LABA VS LAMA
 - SAMA q 6 hours VS LAMA
 - LAMA VS ICS+LABA

Case Study 3

Patient: Mr. Cat

OPD visit after being discharged from a hospital

56 year old

Exsmoker with Hx of 40 pack-year smoking

Known COPD: post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

Performance status : walk slower than others

Relevant Medical Hx

recently discharged from hospital after AECOPD, which was his 1st admission in a few years

Prior to this admission he had been experiencing symptoms of increasing dyspnea, cough, sputum and fever for over 4 days. In the hospital he was given prednisone, antibiotics and was started on fulltime oxygen.

Current Medication

Tiotropium 18 mcg 1 puff daily and Salbutamol 100 mcg 1-2 puffs q4hr PRN.

Mr. Cat

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HN.....

Asthma/ COPD No.....

Predicted PEFR.....L/min

post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

Date	Day symptoms	Night symptoms	Bronchodilator used	Unschedule Clinic/ER visit	Admission	Adverse effect	PEFR (L/min, %)	Sputum	Dyspnoea score	Previous treatment	New treatment
	✓	✓	✓		✓			✓	2	Tiotropium 18 mcg 1 puff daily Salbutamol 100 mcg 1-2 puffs q4hr PRN.	
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											
Lung function	Pre-bron (L, %)				Post-bron (L, %)						
- FVC											
- FEV ₁											
- FEV ₁ /FVC											

Patient: Mr. Cat

OPD visit after being discharged from a hospital

56 year old

Exsmoker with Hx of 40 pack-year smoking

Known COPD: post-bronchodilator FEV1 55% predicted and FEV1/FVC ratio 65%

Performance status : walk slower than others

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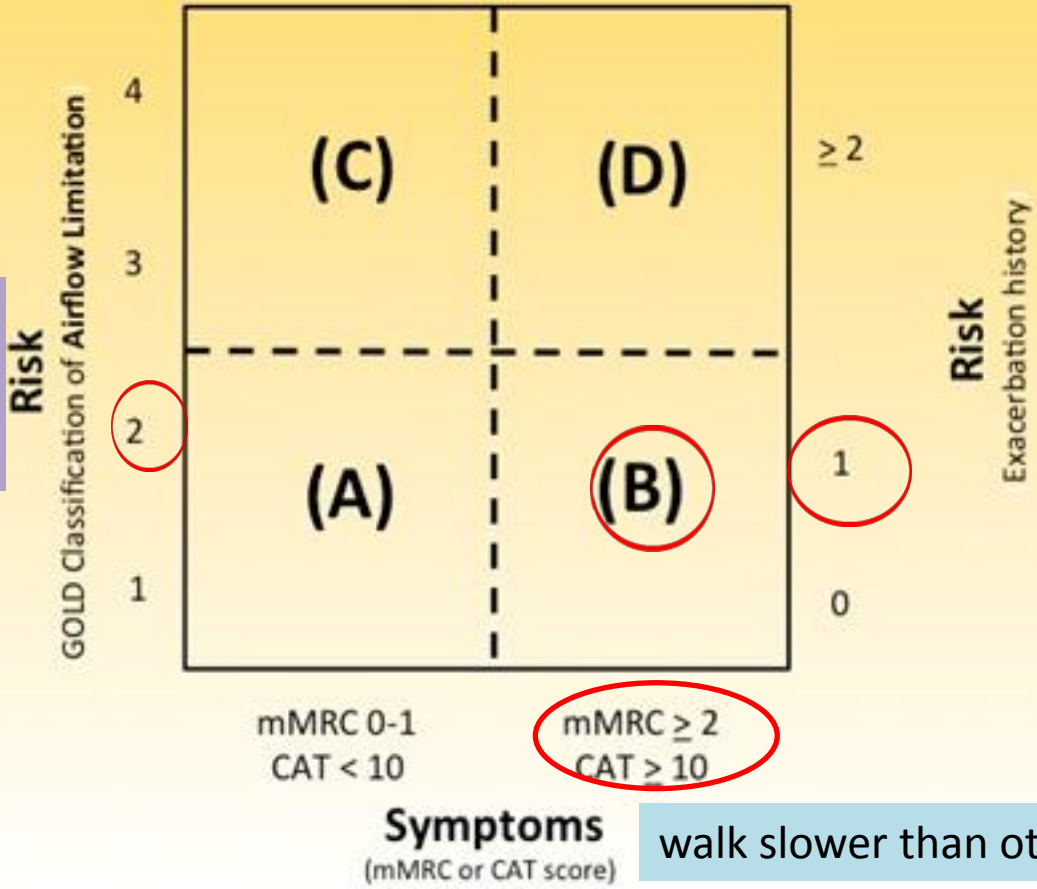
Current Medication

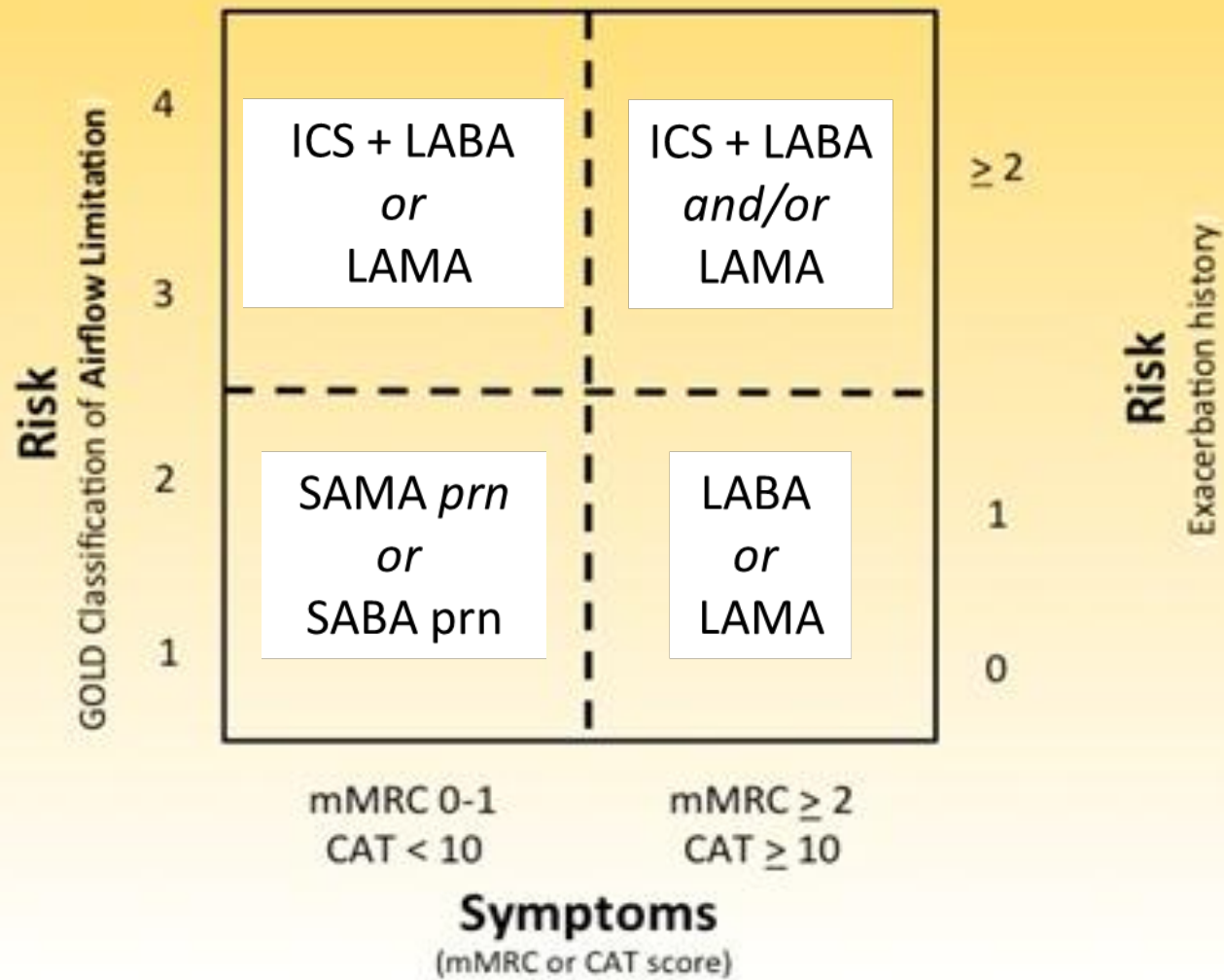
Tiotropium 18 mcg 1 puff daily and Salbutamol 100 mcg 1-2 puffs q4hr PRN.

Q1. What would be the most appropriate addition to his current treatment regimen?

1. LABA
2. ICS + LABA
3. Phosphodiesterase 4 inhibitor
4. Theophylline
5. None

post-bronchodilator FEV1 55%





Q2. Should you treat an AE patient with one hospitalization as a patient with frequent AE?

1. Yes

2. No

Questions for Dr.Watchara

Discuss about the following:

- treat a patient with one hospitalization from AE as a patient in high risk group

Q & A