

ASTIMDA ANTI- İNFLAMATUAR KURTARICI TEDAVİ:

GINA REHBERLİĞİNDE NASIL UYGULANMALI?

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İmmunoloji ve Allerji Kliniği



KURTARICI

HASTALAR
KURTARICIYA
İHTİYAÇ
DUYDUKLARINDA
NE OLUR?



KLİNİK OLARAK



Nefes darlığı

Öksürük

Vizing

Göğüste baskı

FİZİK MUAYEDE



Cümle kurmada zorluk

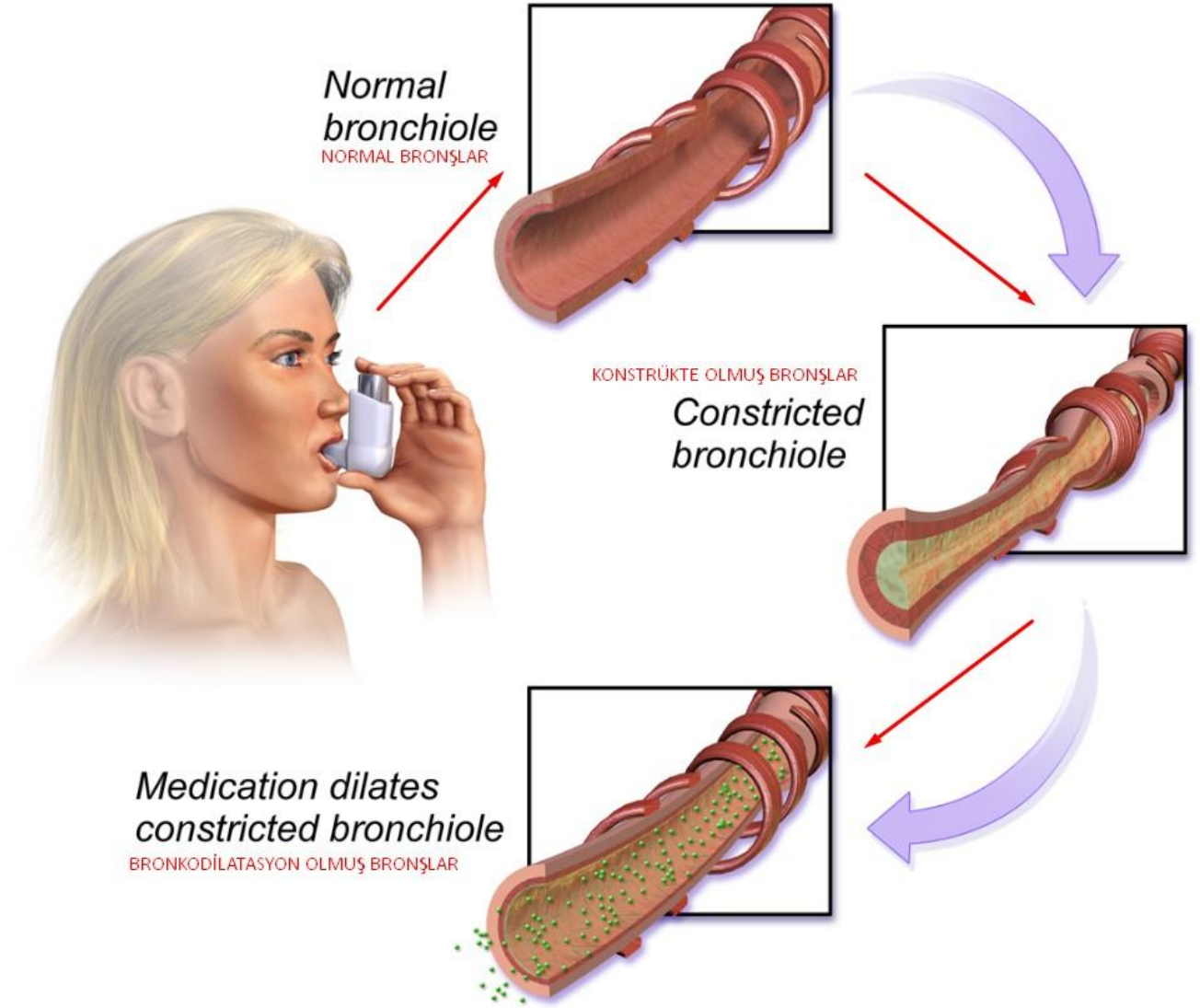
Ortopneik

Ekspiryumun uzaması, vizing,
ronkus..

Taşıpne

Yardımcı solunum kasları aktif

**KURTARICI TEDAVİDE
HEP
BRONKODİLATASYON
HEDEFLENMİŞ**

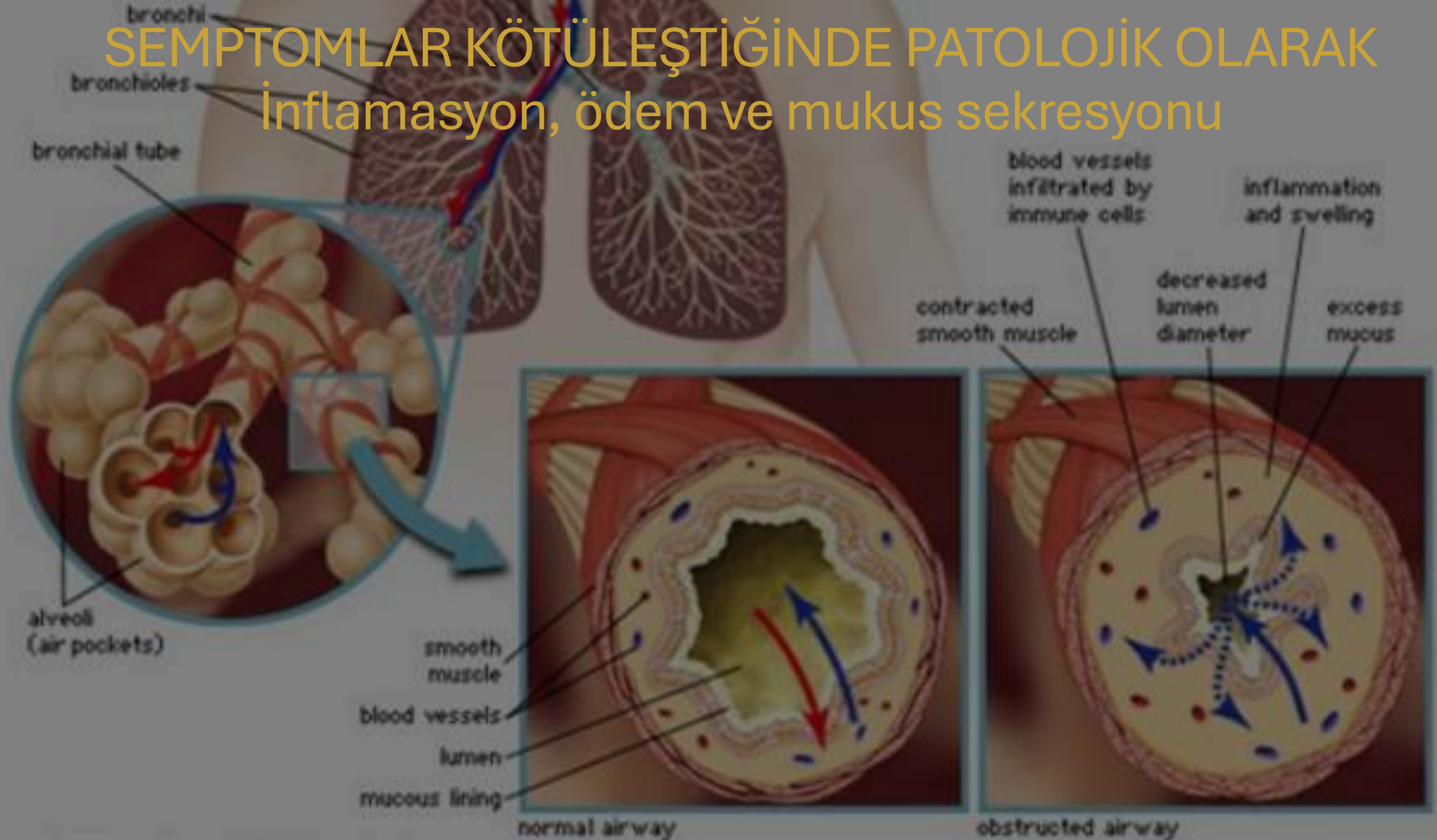


APPERENCE-
REALITY

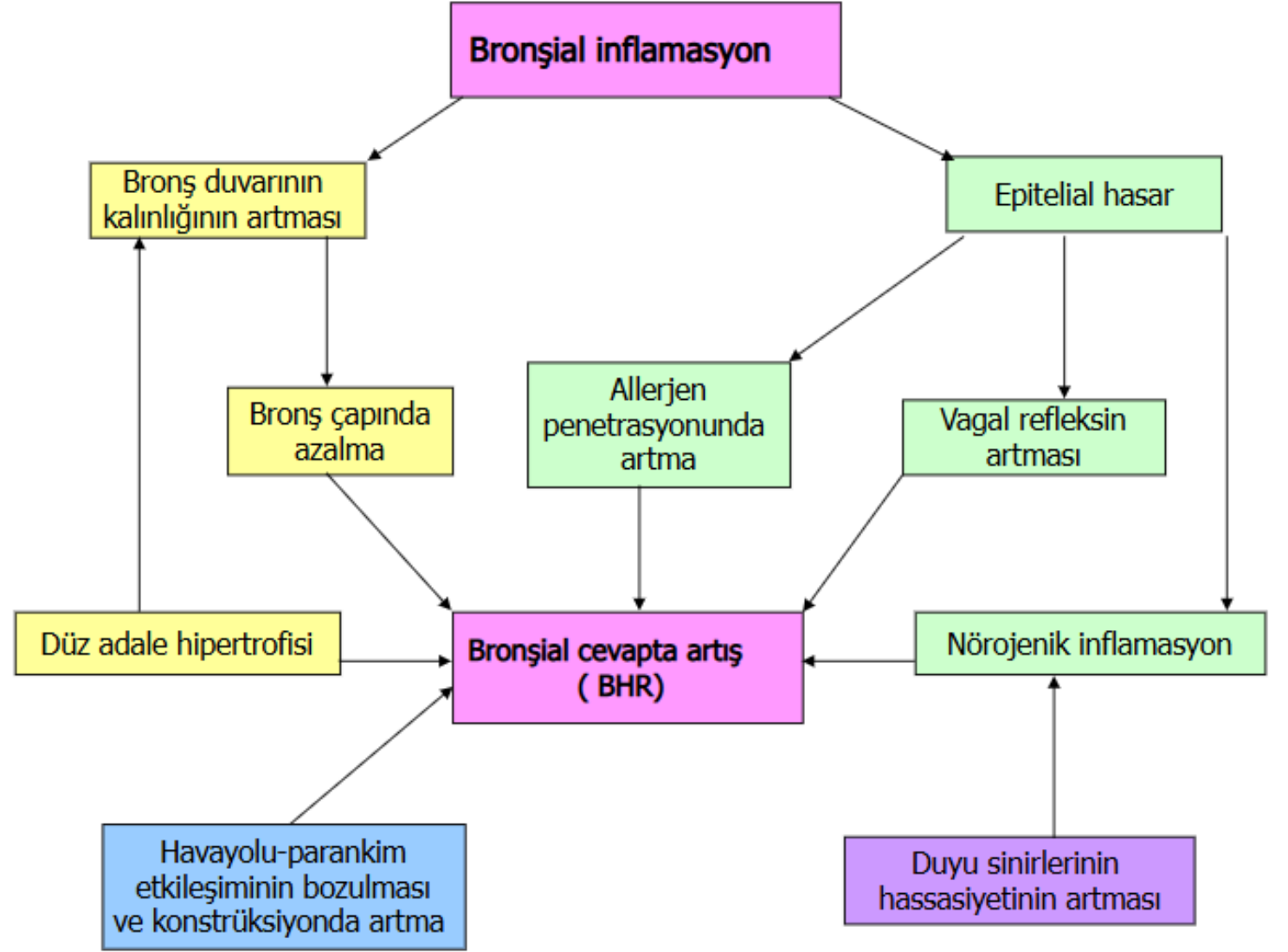


SEMPTOMLAR KÖTÜLEŞTİĞİNDE PATOLOJİK OLARAK

İnflamasyon, ödem ve mukus sekresyonu



INFLAMASYONDAN BHR'ne...



- **For Track 2**, the previous description of patients suitable for **Step 1 treatment (having asthma symptoms less than twice a month and no risk factors for exacerbations)** was introduced in GINA 2014 to **limit the use of short-acting beta₂ agonist (SABA)-only treatment**, as its risks in asthma were already well known.¹³ This criterion for Step 1 treatment has now been replaced, since GINA has **recommended against SABA-only treatment since 2019**. Another consideration for **choosing between Step 1 and Step 2 treatment** is that, although **maintenance ICS almost halved the risk of serious exacerbations in patients with symptoms ≤ 2 days/week in a clinical trial**, such patients would be **very unlikely to take daily ICS if it was prescribed in clinical practice**. Therefore, for patients with such infrequent symptoms, **taking ICS whenever SABA is taken (Track 2, Step 1)** is preferred over daily ICS plus as-needed SABA (Track 2, Step 2) to ensure that patients receive at least some ICS, rather than taking SABA alone.

SABA TARİHÇE

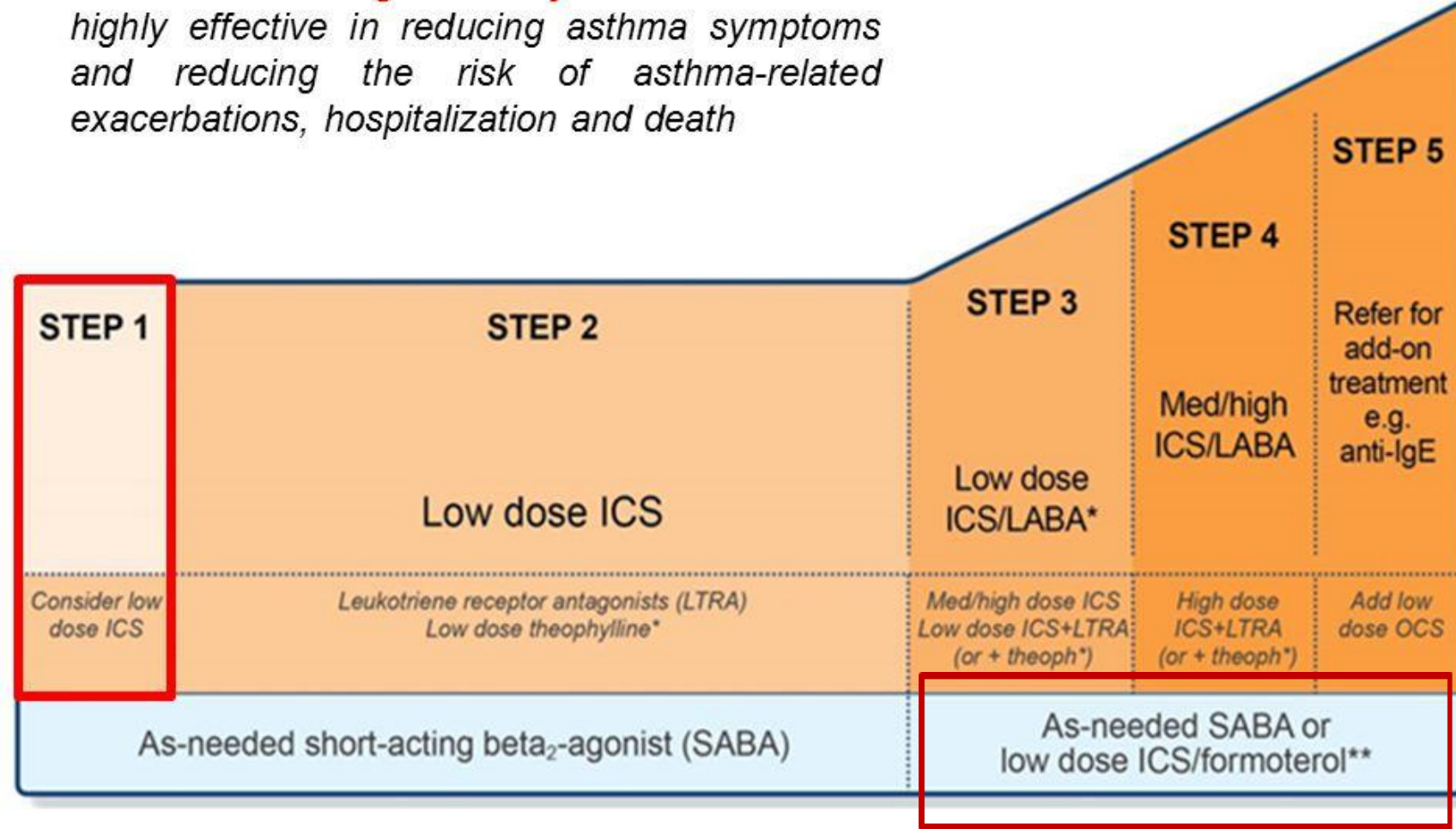
AYDA 2'DEN AZ SEMPTOM VE ATAK RİSKİ YOK VE SON 1 YILDA ATAK YOKSA KONTROL EDİCİ YOK SADECE LH SABA

Presenting symptoms	Preferred initial controller
Asthma symptoms or need for SABA less than twice a month; no waking due to asthma in last month; and no risk factors for exacerbations (Box 2-2B, p17), including no exacerbations in the last year	No controller (Evidence D)*
Infrequent asthma symptoms, but the patient has one or more risk factors for exacerbations (Box 2-2B); e.g. low lung function, or exacerbation requiring OCS in the last year, or has ever been in intensive care for asthma	Low dose ICS** (Evidence D)*
Asthma symptoms or need for SABA between twice a month and twice a week, or patient wakes due to asthma once or more a month	Low dose ICS** (Evidence B)
Asthma symptoms or need for SABA more than twice a week	Low dose ICS** (Evidence A) Other less effective options are LTRA or theophylline

GINA 2014'de KURTARICI OLARAK IKS-FORMETEROL GELDİ -İDAMEDE BASAMAK 1'de TEK BAŞINA SABA KISTLANDI

Asthma stepwise management - GINA 2014

Treatment with **regular daily low dose ICS** is highly effective in reducing asthma symptoms and reducing the risk of asthma-related exacerbations, hospitalization and death



ARTMIŞ SABA KULLANIMINDA RİSKLER

- Tek başına 1 hafta SABA Kullanımı
- Artmış BHR, EİB
- Artmış İnflamasyon
- Azalmış BD yanıt
- Artmış atak (3 kutu)
- Artmış mortalite (12 kutu)

Eur Respir J 2020; 55: 1901872

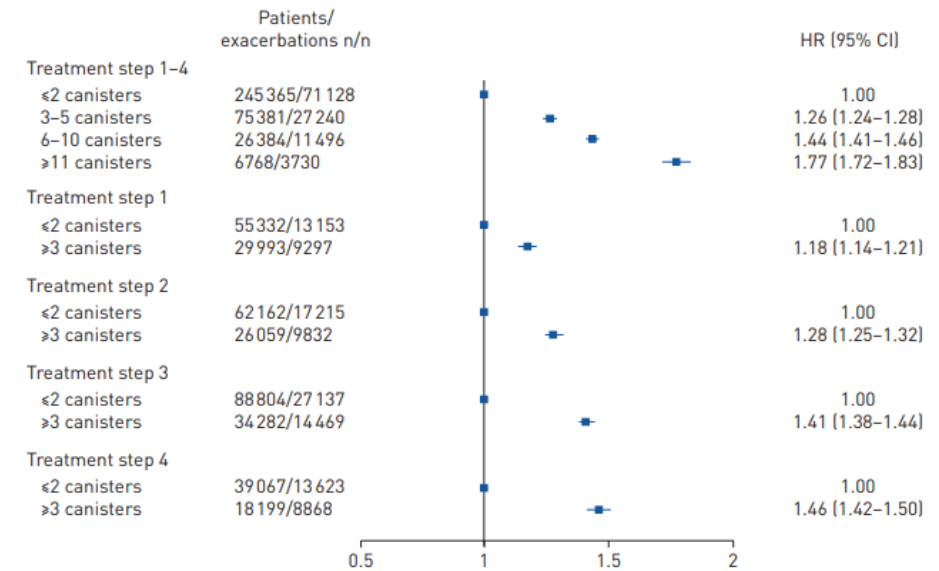


FIGURE 2 Associations between baseline short-acting β_2 -agonist (SABA) use and treatment step and subsequent risk of asthma exacerbation. Adjusted for age at asthma diagnosis, sex, treatment step and comorbidity. ≤2 canisters: patients collecting two or fewer SABA canisters during the baseline year; ≥3 canisters: patients collecting three or more SABA canisters during the baseline year; HR: hazard ratio.

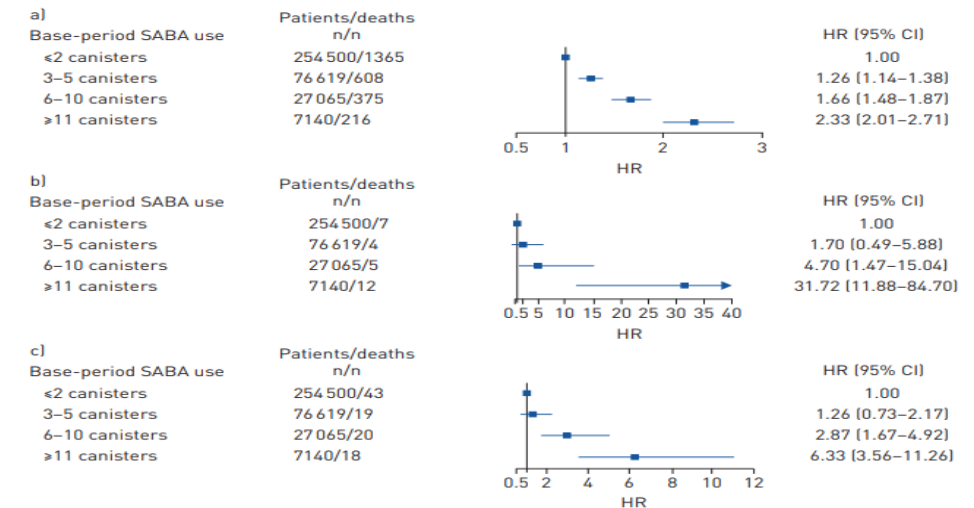


FIGURE 5 Association between baseline short-acting β_2 -agonist (SABA) use and risk of mortality. a) Overall mortality; b) asthma-related mortality; c) respiratory-related mortality. Adjusted for treatment step, Charlson Comorbidity Index, sex and age. ≤2 canisters: patients collecting two or fewer SABA canisters during the baseline year; ≥3 canisters: patients collecting three or more SABA canisters during the baseline year; HR: hazard ratio.



1 Kutu SABA 200 puf
Yilda 3 Kutu SABA 600 puf
Yilda 365 gün: $600/365=1,64$ puf
Günde 1'den fazla SABA ihtiyacı

GINA 2019

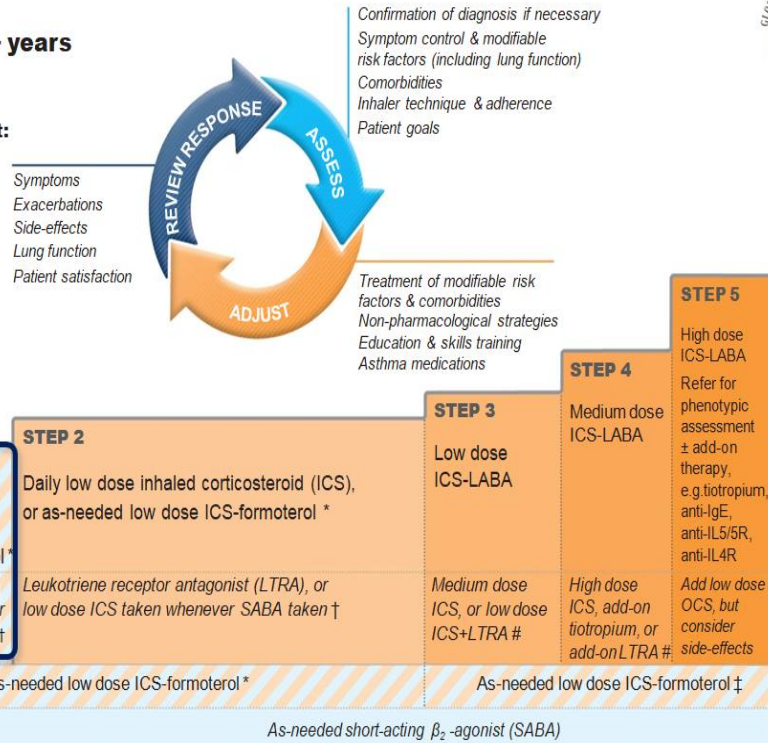
GINA 2021

Box 3-5A

Adults & adolescents 12+ years

Personalized asthma management:

Assess, Adjust, Review response



^{*} Off-label; data only with budesonide-formoterol (bud-form)

[†] Off-label; separate or combination ICS and SABA inhalers

[‡] Low-dose ICS-form is the reliever for patients prescribed bud-form or BDP-form maintenance and reliever therapy

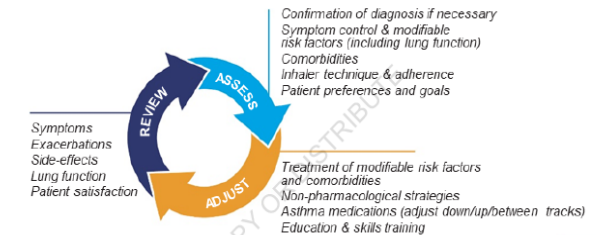
[#] Consider adding HDM SLIT for sensitized patients with allergic rhinitis and FEV₁ >70% predicted



Adults & adolescents 12+ years

Personalized asthma management

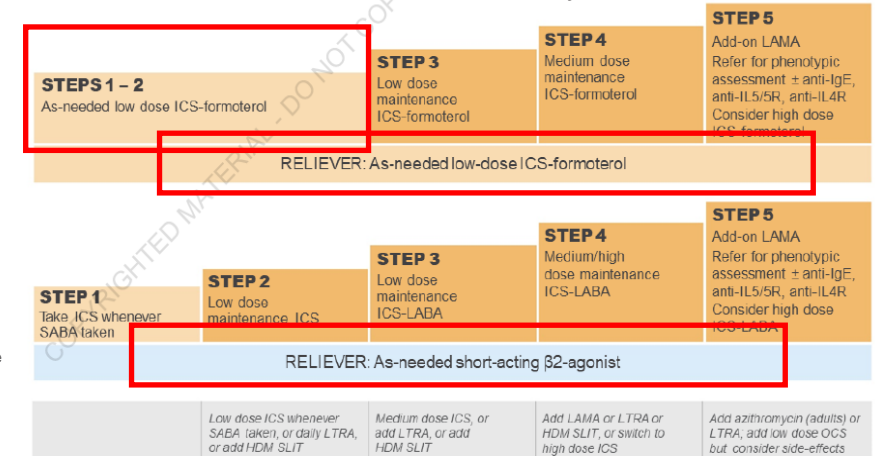
Assess, Adjust, Review for individual patient needs



CONTROLLER and **PREFERRED RELIEVER** (Track 1). Using ICS-formoterol as reliever reduces the risk of exacerbations compared with using a SABA reliever

CONTROLLER and **ALTERNATIVE RELIEVER** (Track 2). Before considering a regimen with SABA reliever, check if the patient is likely to be adherent with daily controller

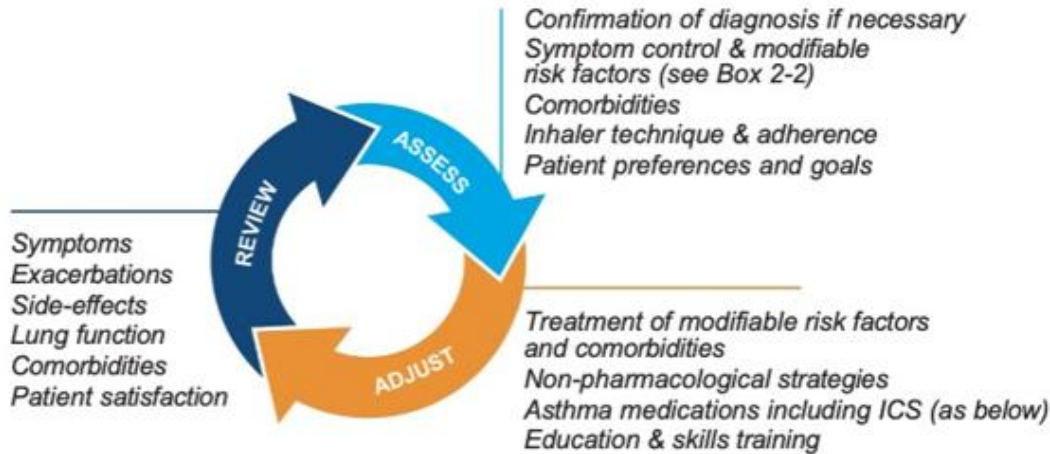
Other controller options for either track



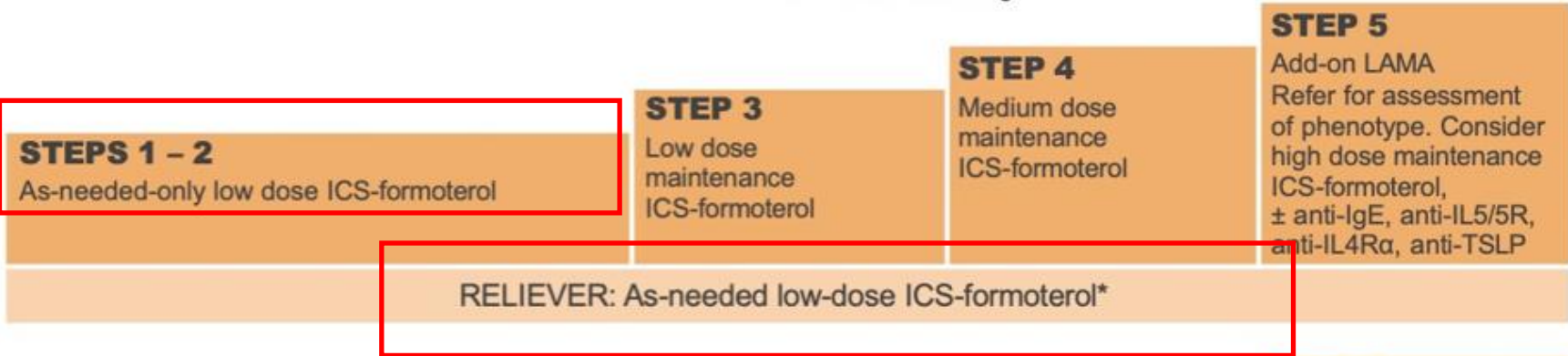
HDM: house dust mite; ICS: inhaled corticosteroid; LABA: long-acting beta₂-agonist; LAMA: long-acting muscarinic antagonist; LTRA: leukotriene receptor antagonist; OCS: oral corticosteroids; SABA: short-acting beta₂-agonist; SLIT: sublingual immunotherapy. For recommendations about initial asthma treatment in adults and adolescents, see Box 3-4A (p. 53) and 3-4B (p. 54).

GINA 2024 – Adults & adolescents 12+ years

Personalized asthma management
Assess, Adjust, Review
for individual patient needs

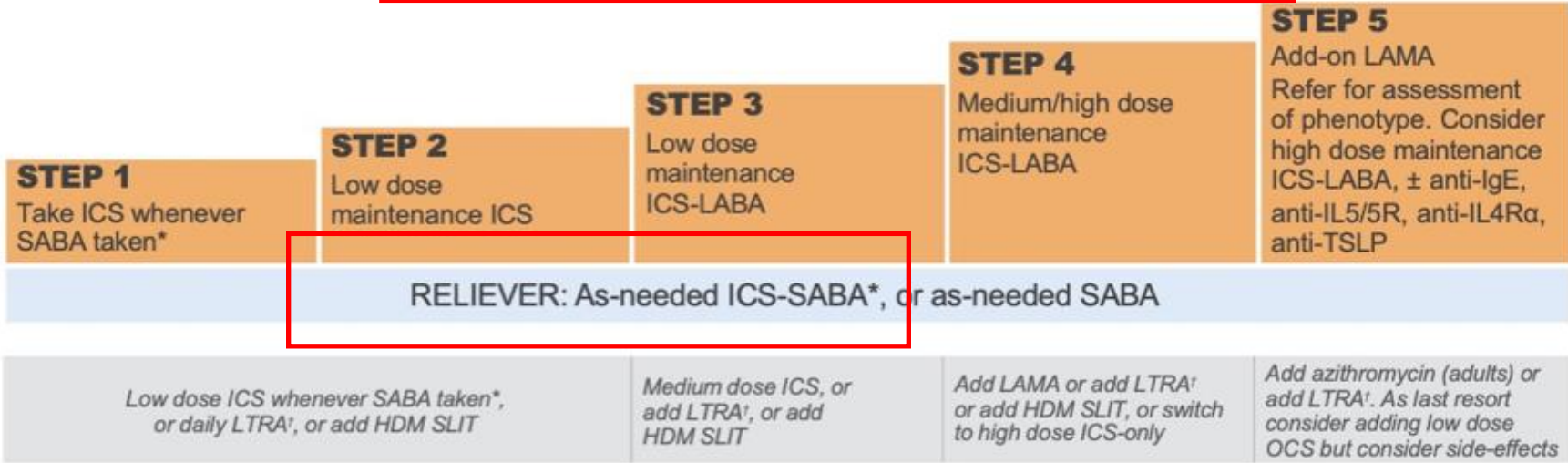


TRACK 1: PREFERRED CONTROLLER and RELIEVER
Using ICS-formoterol as the reliever* reduces the risk of exacerbations compared with using a SABA reliever, and is a simpler regimen



See GINA severe asthma guide

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



Other controller options (limited indications, or less evidence for efficacy or safety – see text)

¹Anti-inflammatory relievers: reduce risk of neuropsychiatric adverse effects

TEDAVİ-TERMİNOLOJİ



Kontrol edici

- Semptom kontrolünü sağlamak ve atak riskini azaltmak için **sıklıkla İKS içeren tedavi (kurtarıcı olarak da kullanıldığından) kafa karışıklığı) 'İKS içeren idame tedavi 'daha uygun tanım**

İdame tedavi (maintenance)

- **Sıklık**; düzenli planlanan, örn: günde 2 kere İKS, İKS-LABA, İKS-LABA-LAMA, LTRA, Biyolojik

Kurtarıcı (Reliever) SABA, SABA+İKS, Formeterol+İKS

- Egzersiz veya alerjen maruziyeti öncesi semptomları rahatlatmak için

Anti-inflammatory reliever (AIR); örn: **İKS-Formeterol, İKS-SABA**

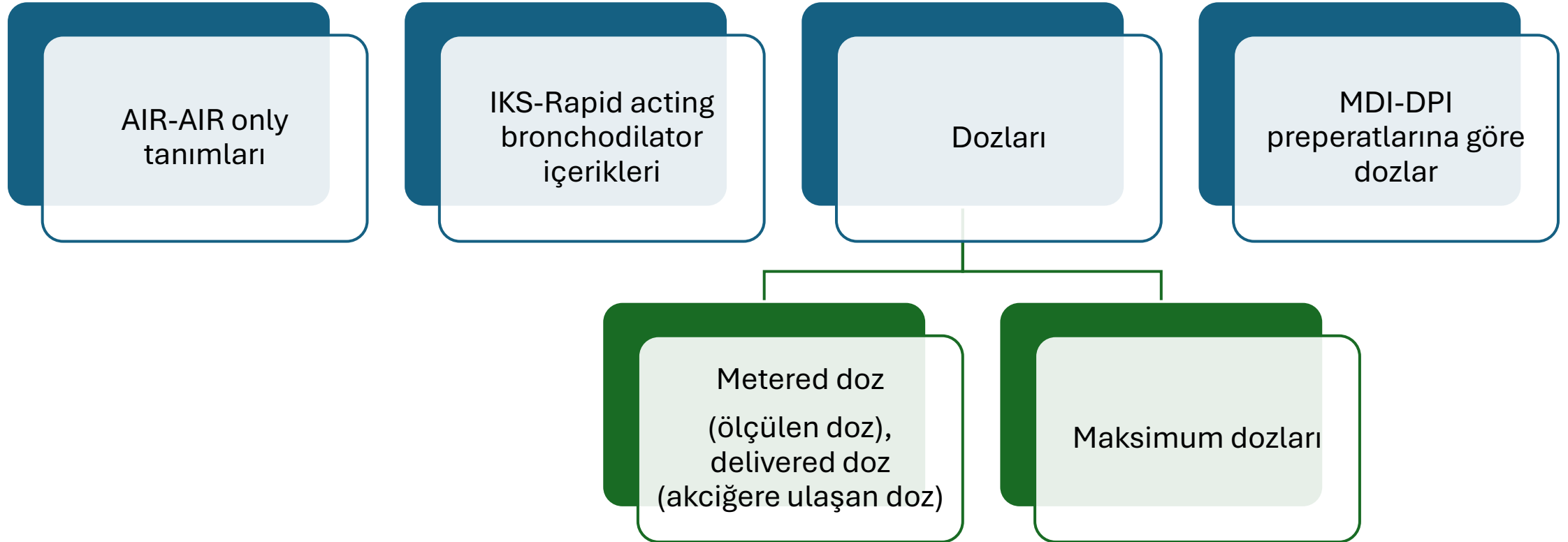
- Gerektiğinde tek başına İKS-Formeterol
(AIR only) **basamak 1-2**

Maintenance and reliever treatment (**MART**); **İdame ve kurtarıcı tedavi** basmak 3-5 Formeterol+İKS

GINA 2024 AIR HAKKINDA...

Anti-inflammatory reliever (AIR)	Reliever inhaler that contains both a low-dose ICS and a rapid-acting bronchodilator	asthma symptoms (except before exercise). Includes budesonide-formoterol, beclometasone-formoterol and ICS-salbutamol combinations. Patients can also use AIRs as needed before exercise or allergen exposure to prevent asthma symptoms and bronchoconstriction. Non-formoterol LABAs in combination with ICS cannot be used as relievers. ICS-formoterol should not be used as the reliever with maintenance ICS-non-formoterol LABAs (p.69).¹⁴ The anti-inflammatory effect of as-needed ICS-formoterol was demonstrated by reduction in FeNO in several studies.^{187,188,294} Some anti-inflammatory relievers can be used as-needed at Steps 1–2 as the person's sole asthma treatment, without a maintenance treatment ('AIR-only' treatment). Almost all evidence for this is with ICS-formoterol. Some ICS-formoterol combinations can be used as both maintenance treatment and reliever treatment at Steps 3–5 (see MART, below). For medications and doses, see Box 4-8 (p.84).
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KAFA KARIŞIKLIĞINI GİDERMEK İÇİN



AIR/AIR ONLY



**ANTI-INFLAMMATORY
RELIEVER (AIR)**

KURTARICI OLARAK

IKS-FORMETEROL, IKS-SABA



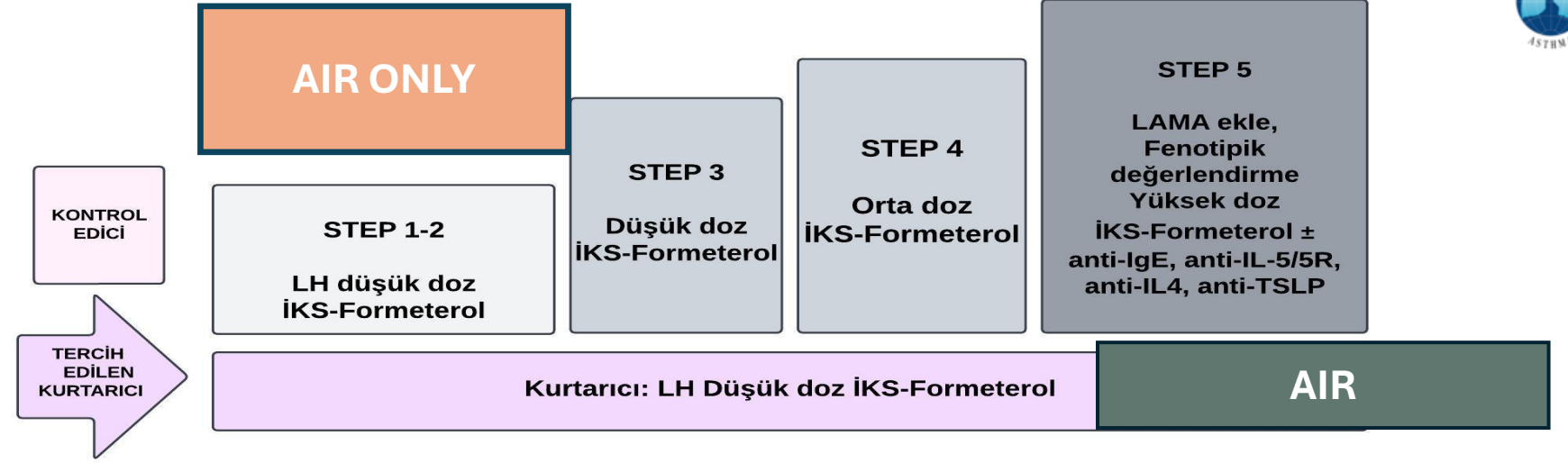
**ANTI-INFLAMMATORY
RELIEVER ONLY (AIR ONLY)**

TRACK 1, BASAMAK 1-2 İDAME

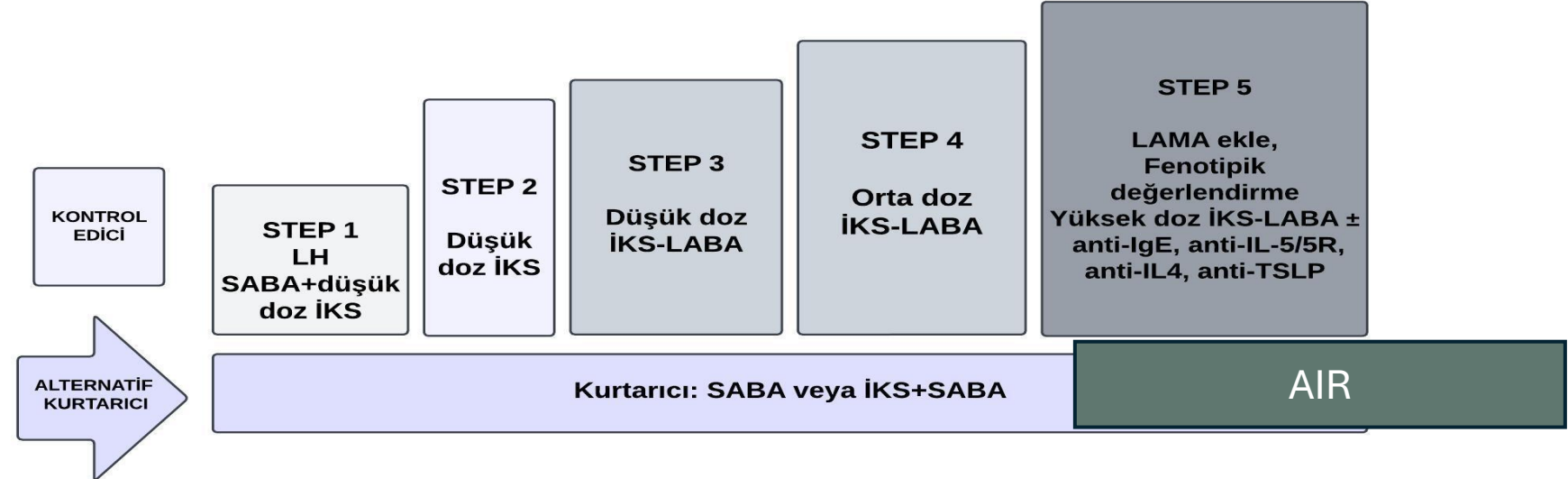
IKS-FORMETEROL

AIR-AIR ONLY

KONTROL EDİCİ ve TERCİH EDİLEN KURTARICI
(1 Yol). İKS-formoterolü kurtarıcı olarak kullanmak atak riskini SABA'ya göre azaltır



KONTROL EDİCİ ve ALTERNATİF KURTARICI
(Yol 2). SABA ile bir rejime başlamadan hastanın günlük kontrol edici uyumunun iyi olduğuna bakın



DiĞER KONTROL EDİCİ SEÇENEKLERİ	LH SABA+Düşük doz İKS veya LTRA veya HDM SLİT ekle	Orta dok İKS veya LTRA ekle veya HDM SLİT ekle	LAMA ekle veya LTRA ekle veya HDM SLİT ekle veya Yüksek doz İKS'ye geç	Azitromisin ekle veya LTRA ekle veya Yan etkileri gözетerek OKS ekle (düşük öneri)
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AIR İÇERİKLERİ



DÜŞÜK DOZ IKS



RAPİD ACTİNG BRONCHODİLATOR
(HIZLI ETKİLİ BD)

AIR/AIR ONLY IKS İÇERİKLERİ



Budesonid

Beklometazon*

- *AIR only (Basamak 1-2 idame) için çalışması yok ama
- MART (Basamak 3-5) kanıtlarından dolayı uygun olabilir

AIR/AIR ONLY RAPİD ACTİNG BETA AGONİST İÇERİKLERİ

Formeterol

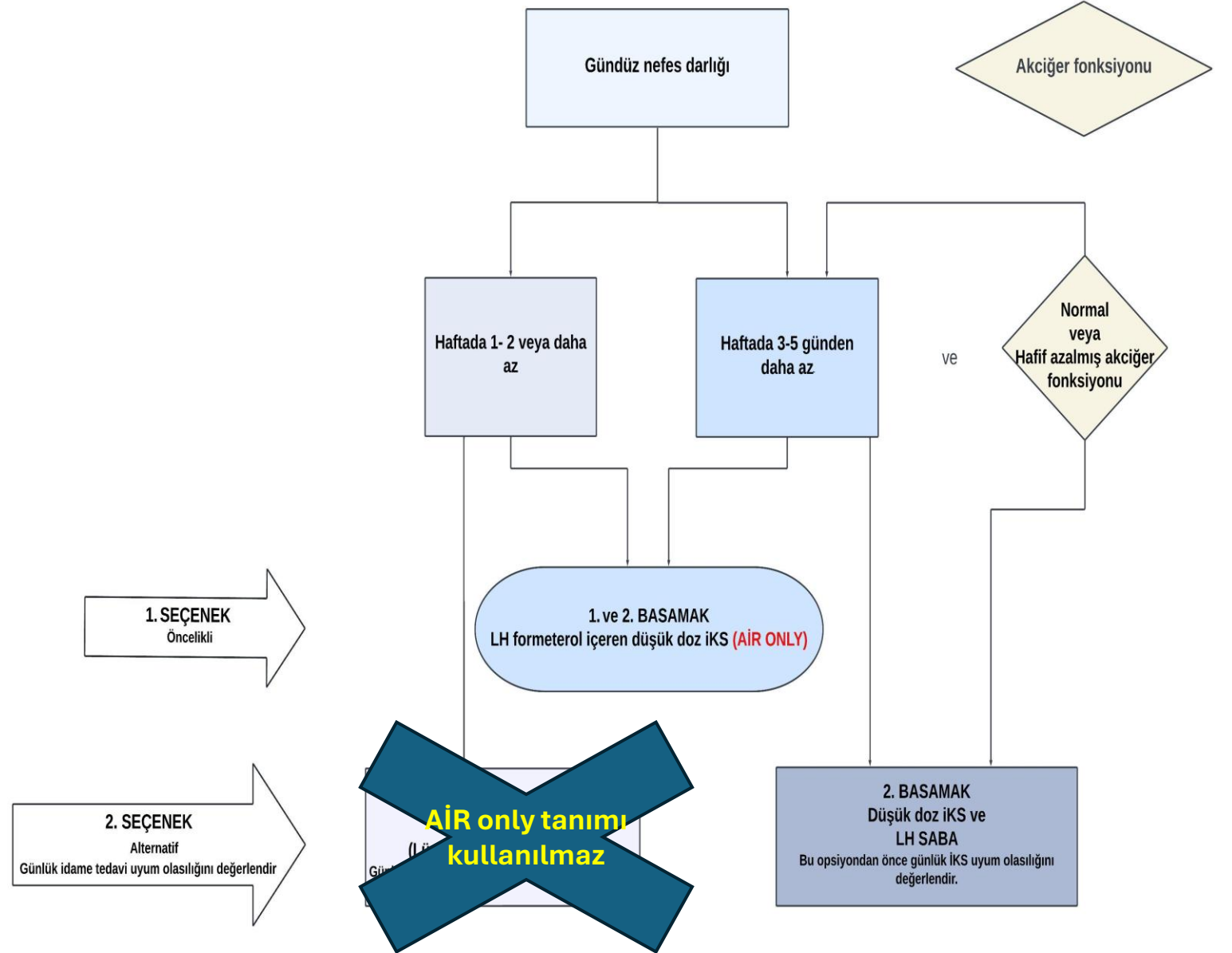
- Etki başlangıç hızı 4 dk, **salmeterol: 15 dk**

SABA

- Kombinasyon
 - IKS-SABA kombinasyonu ülkemizde yok
- Ayrı olarak kullanılırken
 - ‘Low dose IKS taken, whenever SABA is taken ‘

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İmmunoloji Hastalarının
Yönetiminde Poliklinik El
Kitabı

AIR ONLY ADAYI OLAN HASTALAR



DOZLAR-MAKSİMUM DOZ

Age	Inhalers: mcg/inhalation metered dose [delivered dose] and maximum in any day	Dosing frequency by age group and treatment step (see next page for additional inhaler options and doses)
6–11 years	Budesonide-formoterol 100/6 DPI [80/4.5] (maximum total 8 inhalations in any day)	Step 1–2 AIR-only: no evidence to date Step 3 MART: 1 inhalation once daily plus 1 as needed Step 4 MART: 1 inhalation twice daily plus 1 as needed Step 5 MART: not recommended
12–17 years	Budesonide-formoterol 200/6 [160/4.5] mcg DPI or pMDI (maximum total 12 inhalations in any day)	Step 1–2 (AIR-only): 1 inhalation as needed Step 3 MART: 1 inhalation twice (or once) daily plus 1 as needed Step 4 MART: 2 inhalations twice daily plus 1 as needed Step 5 MART: 2 inhalations twice daily plus 1 as needed
≥18 years	Budesonide-formoterol 200/6 [160/4.5] or BDP-formoterol 100/6 mcg, pMDI or DPI (maximum total 12 inhalations in any day [†])	Step 1–2 (AIR-only): 1 inhalation as needed [†] Step 3 MART: 1 inhalation twice (or once) daily plus 1 as needed Step 4 MART: 2 inhalations twice daily plus 1 as needed Step 5 MART: 2 inhalations twice daily plus 1 as needed

[†]For beclometasone (BDP)-formoterol, GINA suggests that the maximum total dose in any day should be 12 inhalations, based on extensive safety data with budesonide-formoterol; it has not been studied as-needed only but may be suitable (see p.82. The delivered dose for BDP-formoterol 100/6 mcg is 84.6/5 mcg for pMDI and 81.9/5 mcg for DPI. See next page for more inhaler doses.



DOZLAR

Metered doz (ölçülen doz)

Budesonid/Formeterol :200/6

Beklometazon (BDP)/Formeterol 100/6

Delivered doz (akciğere ulaşan doz)

Budesonid/Formeterol: 160/4,5

Maksimum doz

- 12 puf
- Budesonid/Formeterol :
 - ölçülen doz 72 mcg, (12X6 mcg)
 - akciğere ulaşan doz 54 mcg (12x4,5 mcg)
- **Beklometazon (BDP) /formeterol**
 - **budesonid-formeterolun kanıtına dayanarak maximum doz 12 puf**

KULLANILAN PREPERATLAR VE DOZLAR

Adults 18 years and older	
Budesonide-formoterol DPI or pMDI 200/6 [160/4.5] (maximum total 12 inhalations in any day*)	Step 1–2 (AIR-only): 1 inhalation as needed Step 3 MART: 1 inhalation twice (or once) daily plus 1 as needed Step 4 MART: 2 inhalations twice daily plus 1 as needed Step 5 MART: 2 inhalations twice daily plus 1 as needed
Budesonide-formoterol pMDI 100/3 [80/2.25] (maximum total 24 inhalations in any day*) <i>These doses ONLY for pMDIs with 3 [2.25] mcg formoterol</i>	<i>These doses ONLY for pMDIs with 3 [2.25] mcg formoterol</i> Step 1–2 (AIR-only): 2 inhalations as needed Step 3 MART: 2 inhalations twice (or once) daily plus 2 as needed Step 4 MART: 4 inhalations twice daily plus 2 as needed Step 5 MART: 4 inhalations twice daily plus 2 as needed
Beclometasone-formoterol pMDI or DPI 100/6 (GINA suggests maximum total 12 inhalations in any day*†)	Step 1–2 (AIR-only): 1 inhalation as needed Step 3 MART: 1 inhalation twice (or once) daily plus 1 as needed Step 4 MART: 2 inhalations twice daily plus 1 as needed Step 5 MART: 2 inhalations twice daily plus 1 as needed

BUDESONİD İÇEREN AIR PREPERATLARI DPI/MDI



BUDESONİD- FORMETEROL DPI veya MDI

- **Ölçülen doz (200/6) , akciğere ulaşan doz (160/4,5)**
- AIR/AIR only: ihtiyaç halinde 1 puf
- Maximum 12 puf

BUDESONİD- FORMETEROL MDI

- **Ölçülen doz (100/3) , akciğere ulaşan doz (80/2,25)**
ülkümüzde yok
- AIR/AIR only: ihtiyaç halinde 2 puf
- Maximum 24 puf

AİR-MART İÇİN UYGUN PREPERATLAR

- SYMBICORT TURBUHALER 160/4,5 MCG DOZ INHALASYON ICIN 120 DOZ hkt
- FIXCORT 4,5/160 MCG CAPSAIR INHALASYON
- FORNIT 4,5/160 MCG INHALASYON ICIN TOZ ICEREN 60 KAPSUL
- FORPACK 6 MCG / 200 MCG AEROSOL INHALASYONU , SUSPANSİYON (120 DOZ) hkt –
- RESPIDAY DISCAIR 4,5/160 MCG INHALASYON ICIN TOZ (60 DOZ)
- ROLASTYM AEROSOL 160 MCG/4,5 MCG SUSPANSİYON ICEREN OLCULU DOZ INHALER (120 DOZ) h



AIR OLARAK **KULLANILMAYAN** BUDESONİD/FORMETEROL PREPERATLARI

Budesonid

ölçülen doz 400/12 ,
akciğere ulaşan doz 320/9

Budesonid

ölçülen doz 100/6,
akciğere ulaşan doz 80/4,5

AİR-MART UYGUN OLMAYAN PREPERATLARA ÖRNEK

- ROLASTYM AEROSOL 320 MCG/9 MCG SUSPANSİYON İCEREN OLCULU DOZ INHALER (60 DOZ)
- ROLASTYM AEROSOL 80 MCG/4,5 MCG SUSPANSİYON İCEREN OLCULU DOZ INHALER
- FORPACK 6 MCG / 400 MCG AEROSOL İNHALASYONU
- FORPACK 6 MCG / 100 MCG AEROSOL İNHALASYONU
- FORPACK 12/200 MCG DISCAIR İNHALASYON İCİN TOZ

BEKLOMETAZON İÇEREN AIR PREPERATLARI



BEKLOMETAZON-
FORMETEROL
DPI veya MDI

- Ölçülen doz (100/6), akciğere ulaşan doz **(MDI:84,6/5; DPI:81,9/5)**
- AIR/AIR only: ihtiyaç halinde 1 puf
- Maximum 12 puf

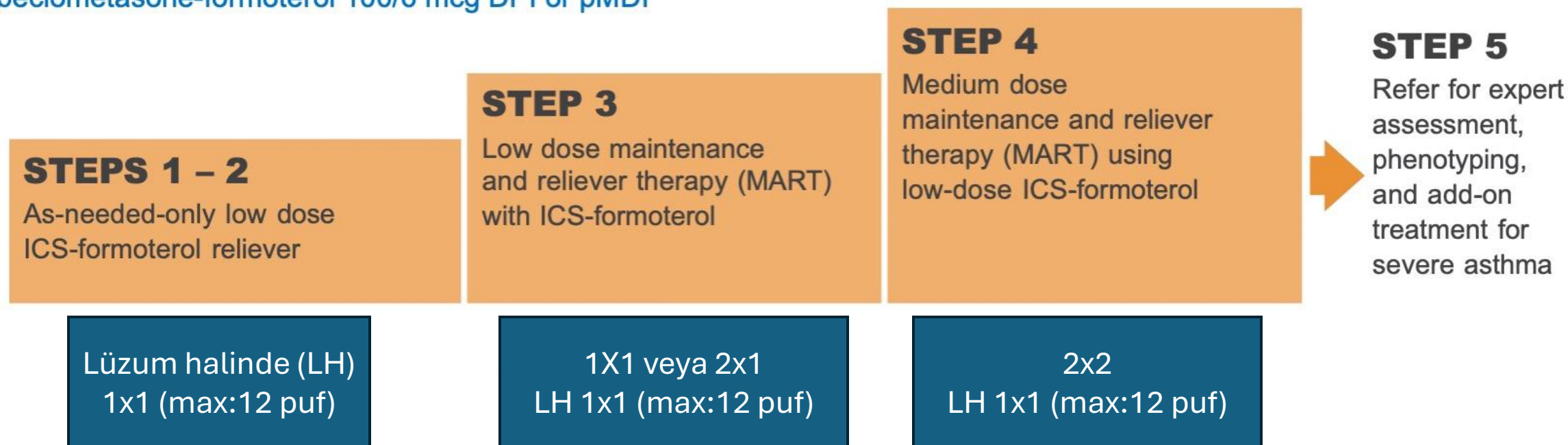
BEKLAMETAZON İÇEREN AIR-MART

- B-AIR 100 MCG / 6 MCG INHALASYON TOZU, SERT KAPSUL (120 KAPSUL)
- FASTAIR 100 MCG/6 MCG INHALASYON TOZU, SERT KAPSUL (120 KAPSUL)
- FORBEX 6/100 MCG INHALASYON COZELTISI
- FOREBEC 100 MCG/ 6 MCG INHALASYON TOZU, SERT KAPSUL (120 KAPSUL)
- FOREBEC 200 MCG/6 MCG INHALASYON TOZU, SERT KAPSUL (120 KAPSUL)
- FOSTER AEROSOL İNHALASYON ÇÖZELTİSİ 100 MCG/ 6 MCG 120 DOZ hkt –
- FOSTER NEXTHALER 100/6 MCG KURU TOZ INHALER
- FOTEROL-B 6 MCG/100 MCG INHALASYON COZELTISI ICEREN AEROSOL (120 DOZ)
- FRONTAIR 100 MCG/6 MCG INHALASYON TOZU, SERT KAPSUL(120 KAPSUL)

TRACK 1, Steps 1–4: PREFERRED CONTROLLER and **RELIEVER** for adults and adolescents.

Using ICS-formoterol as an anti-inflammatory reliever (AIR), with or without maintenance ICS-formoterol, reduces the risk of exacerbations compared with using a SABA reliever, and is a simpler regimen, with a single medication across treatment steps.

For budesonide-formoterol 200/6 mcg [160/4.5] DPI or pMDI*, or beclometasone-formoterol 100/6 mcg DPI or pMDI



*In some countries, a budesonide-formoterol pMDI with 100/3 [80/2.25] mcg per actuation is available for AIR-only or MART. For this pMDI, the recommended number of inhalations is double those shown above.

AİR

Maksimum reçetelenen doz 4x2 8 puf

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Hastalarının Yönetiminde Poliklinik El Kitabı

**AİR (Anti-inflammatory reliever
=anti-enflamatuar rahatlatıcı)**

Formoterol

Akciğere ulaşan doz 1 pufda: 4,5 mcg
(Önerilen günlük maksimum akciğere ulaşan doz
54 mcg
=12 puf
Ölçülen doz 1 pufda 6 mcg
(Önerilen günlük maksimum ölçülen doz: 72 mcg)
=12 puf

Budesonid

Akciğere ulaşan doz 1 pufda: 160 mcg
Ölçülen doz 1 pufda: 200 mcg
Maksimum günlük ölçülen doz 1600 mcg=8 puf

*Formoterol için günlük 12 pufa kadar izin olsa da
maksimum budesonid dozu 1600 mcg'yi
aştığından
(200x12=2400 mcg)

Formoterol+Budesonid günlük 8 pufa kadar

*Ülkemizde henüz AİR için geri ödeme yoktur.
**Beklometazon içeren formoterolün AİR tedavisinde
kullanımı için yeterli kanıt yok

Yetişkin veya adölesan (12 yaş ve üzeri)

İnhale Kortikosteroid

BUD:200x12=2400 1600'den büyük
BDP:100X12=1200;800'den büyük

	Toplam günlük İKS dozu (mcg)			
	Düşük	Orta	Yüksek	Maksimum
Beklometazon dipropionat (pMDI, standart partikül, HFA)	200-500	>500-1000	>1000	2000
Beklometazon dipropionat (DPI veya pMDI, ekstra ince partikül, HFA)	100-200	>200-400	>400	800
Budesonid (DPI veya pMDI, standart partikül, HFA)	200-400	>400-800	>800	1600
Siklesonid (pMDI, ekstra ince partikül, HFA)	80-160	>160-320	>320	640
Flutikazon furoat (DPI)	100		200	
Flutikazon propiyonat (DPI)	100-250	>250-500	>500	1000
Flutikazon propiyonat (DPI)		>250-500	>500	1000
Mometazon furoat (DPI)		ağlı		
Mometazon furoat (DPI)			>400	

BUDESONID: 200 DEN BAŞLA x2 MAX:x8 1600
BEKLOMETAZON 100'le başla, x2 MAX:x8 800
FLUTİKAZON PROPİYANAT 100-250;x2 max:x4 (250) 1000
FLUTİKAZON FUROAT 100 düşük, 200 orta-yüksek doz



TRACK 2'DE DİĞER AIR; IKS-SABA NASIL KULLANILIR?

TRACK 2 STEP 1 TEDAVİ: LH IKS-SABA



Track 2 (alternative) Step 1 treatment options for adults and adolescents: low-dose ICS taken whenever SABA is taken, using separate inhalers or combination ICS-SABA

Low-dose ICS taken whenever SABA is used (in combination or separate ICS and SABA inhalers) is an option if as-needed ICS-formoterol is not available, and the patient is unlikely to take regular ICS. This regimen avoids SABA-only treatment, and may also be useful in regions where the cost of ICS-formoterol is currently prohibitive.

Populations studied

All the evidence for taking ICS whenever SABA is taken is from studies in patients whose asthma was controlled or partly controlled on daily low-dose ICS, i.e., it has been evaluated as a step-down treatment option.

Evidence

The evidence for taking ICS whenever SABA is taken is from two small studies in adults and two small studies in children and adolescents, with separate or combination ICS and SABA inhalers.^{[324-327](#)} These studies showed no difference in exacerbations compared with daily ICS, but in the two studies that included a SABA-only arm, SABA alone was the worst option for treatment failure.

All four studies used beclometasone dipropionate (BDP). One study of as-needed combination ICS-SABA used a moderate dose (250 mcg BDP+100 mcg albuterol), and the three studies with separate inhalers used 2 inhalations of BDP 50 mcg [40 mcg delivered dose] for each 2 inhalations of 100 mcg albuterol.



Track 2, Steps 1–2: As-needed-only ICS-SABA

Combination as-needed ICS-SABA

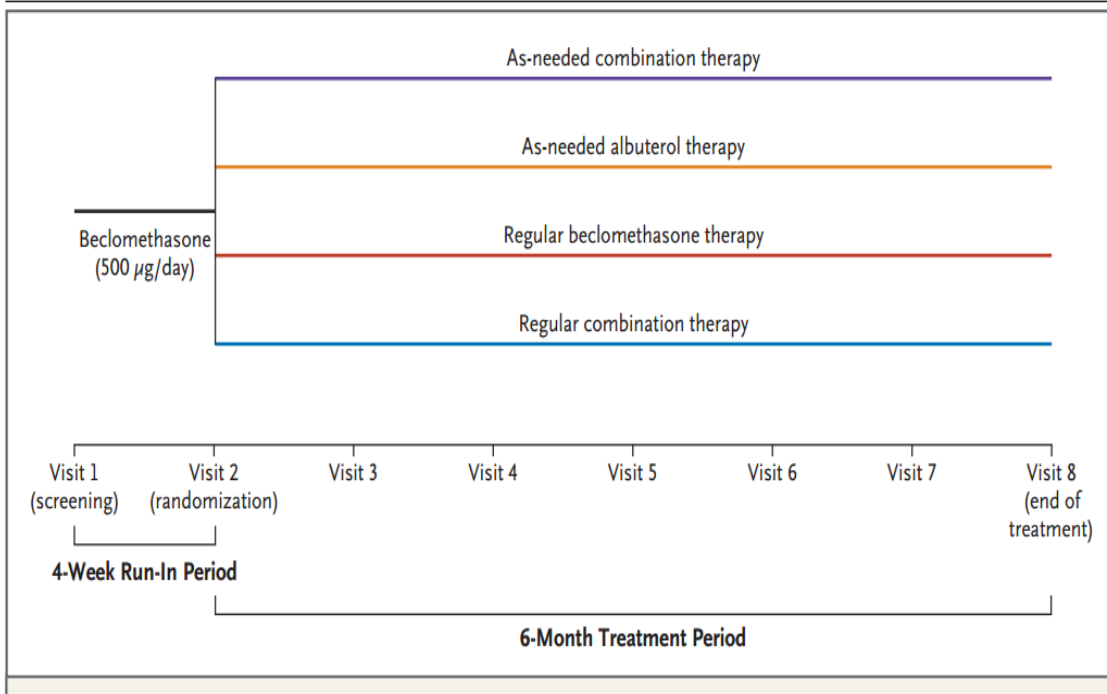
- BEST study, combination BDP-albuterol (*Papi et al, NEJMed 2007, n=445, 6 months*)
 - Mean number of exacerbations per patient per year lower with as-needed combination (0.74) and regular BDP (0.71) compared with as-needed albuterol (1.63, $P<0.001$) and regular combination BDP-albuterol (1.76, $P<0.001$)

Taking ICS whenever SABA taken with separate inhalers

- TREXA study, BDP and albuterol, children and adolescents (*Martinez et al, Lancet 2011, n=288, 9 months*)
 - Frequency of exacerbations highest with albuterol alone (49%); lower with daily BDP (28%, $p=0.03$), daily plus as-needed BDP and SABA (31%, $p=0.07$) and as-needed BDP+SABA (35%, $p=0.07$)
 - Growth 1.1cm less in daily and combined groups but not as-needed-only group
- BASALT study, BDP and albuterol, adults (*Calhoun et al, JAMA 2012, n=342, 9 months*)
 - Similar exacerbations with as-needed BDP+SABA as with 6-weekly physician-adjusted or FeNO-adjusted ICS
- ASIST study, BDP and albuterol, African-American children and adolescents (*Sumino et al, Annals ATS 2020, n=206, 12 months*)
 - Similar symptoms control and exacerbations compared with physician-adjusted ICS

BDP: beclometasone dipropionate; ICS: inhaled corticosteroids; SABA: short-acting beta2-agonists

1-2. basamakta İKS-SABA RÇK: NEJM 2007, BEST; FİX KOMBİNASYON n:455; 6 ay paralel grup



250 MCG BDP 2*1, LH ALBUTEROL, RR:0.71
PL 2*1, LH BDP 250 MCG+100 MCG ALBUTEROL: RR:0.74
250 MCG BDP+ALBUTEROL 2*1, LH ALBUTEROL, RR:1.76
PL 2*1, LH ALBUTEROL, RR: 1.63

Rescue Use of Beclomethasone and Albuterol in a Single Inhaler for Mild Asthma

Alberto Papi, M.D., Giorgio W. Canonica, M.D., Piero Maestrelli, M.D.,
Pierluigi Paggiaro, M.D., Dario Olivieri, M.D., Ernesto Pozzi, M.D.,
Nunzio Crimi, M.D., Antonio M. Vignola, M.D.,* Paolo Morelli, Ph.D.,
Gabriele Nicolini, Pharm.D., and Leonardo M. Fabbri, M.D.,
for the BEST Study Group†

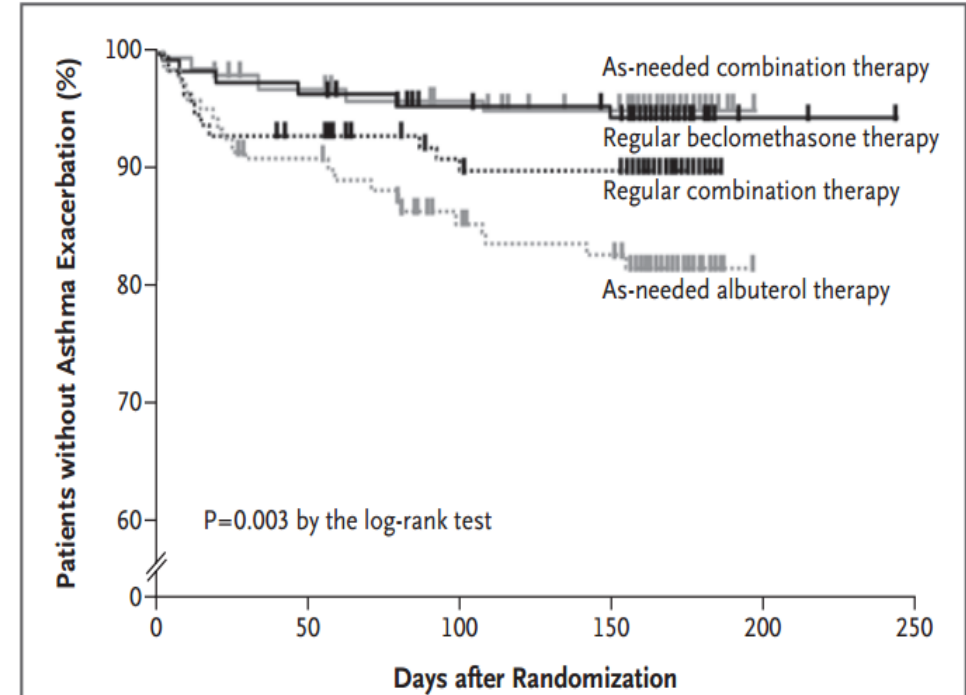


Figure 4. Kaplan–Meier Estimates of the Time to First Asthma Exacerbation in the Modified Intention-to-Treat Population.

Hafif persistan astım

(Haftada 2'den fazla gündüz
ayda 2'den fazla gece semptomu)

Düzenli İKS üstün

5-18 yaş, n: 843,
RÇK Placebo kontrol
44 hafta

Published in final edited form as:

Lancet. 2011 February 19; 377(9766): 650–657. doi:10.1016/S0140-6736(10)62145-9.

Use of beclomethasone dipropionate as rescue treatment for children with mild persistent asthma (TREXA): a randomised, double-blind, placebo-controlled trial

Fernando D Martinez, Vernon M Chinchilli, Wayne J Morgan, Susan J Boehmer, Robert F

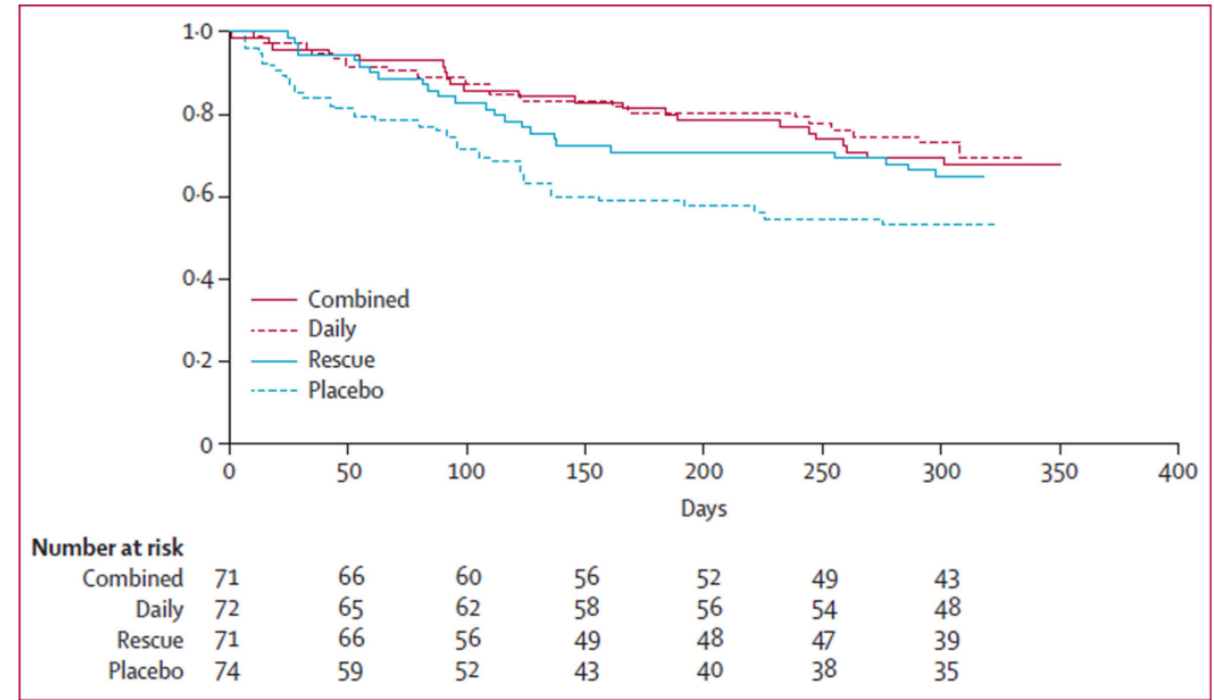


Figure 2. Kaplan-Meier curves showing the time to first exacerbation

BDP 2*1 LH BDP (40 MCG)+ALBUTEROL (90 MCG)
BDP 2*1 LH PL+ALBUTEROL (2 PUF)
PL 2*1 LH BDP+ALBUTEROL (2 PUF)
PL 2*1 LH PL+ALBUTEROL (2 PUF)

Tüm çalışmalarda dahil edilen hastalar hafif persistan astım

A Pragmatic Trial of Symptom-Based Inhaled Corticosteroid Use in African-American Children with Mild Asthma

Rescue Use of Beclomethasone and Albuterol in a Single Inhaler for Mild Asthma

Alberto Papi, M.D., Giorgio W. Canonica, M.D., Piero Maestrelli, M.D., Pierluigi Paggiaro, M.D., Dario Olivieri, M.D., Ernesto Pozzi, M.D., Nunzio Crimi, M.D., Antonio M. Vignola, M.D.* Paolo Morelli, Ph.D.

Components of Severity		Classification of Asthma Severity (Youths ≥12 years of age and adults)			
		Intermittent	Mild	Persistent	
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 >1x/day	Daily	Several times per day
	Interference with normal activity	None	Minor limitation	Some limitation	Extremely limited
	Lung function	• Normal FEV₁ between exacerbations • FEV₁ >80% predicted • FEV₁/FVC normal	• FEV₁ ≥80% predicted • FEV₁/FVC normal	• FEV₁ >60% but <80% predicted • FEV₁/FVC reduced 5%	• FEV₁ <60% predicted • FEV₁/FVC reduced >5%
Normal FEV ₁ /FVC: 8–19 yr 85% 20–39 yr 80% 40–59 yr 75% 60–80 yr 70%					
Risk	Exacerbations requiring oral	0–1/year (see note)	≥2/year (see note)		
		Consider severity and interval since last exacerbation. Frequency and			

(for 12- to 17-year-olds), (3) prebronchodilator FEV₁ value of greater than or equal to 80% predicted, and (4) asthma symptoms up to 4 times a week (defined by Modified Asthma Evaluation Questionnaire score¹² of up to 2 in 2 of 3 questions, with total score

Use of beclomethasone dipropionate as rescue treatment for children with mild persistent asthma (TREXA): a randomised, double-blind, placebo-controlled trial

Participants were defined as having mild persistent asthma if they had, on average, more than 2 days per week with symptoms (eg, wheezing), more than 2 days a week on which they had to use albuterol to control symptoms, or more than two awakenings at night per month when not using controller medication, or if they had to use daily controller treatment to keep their disorder well-controlled.

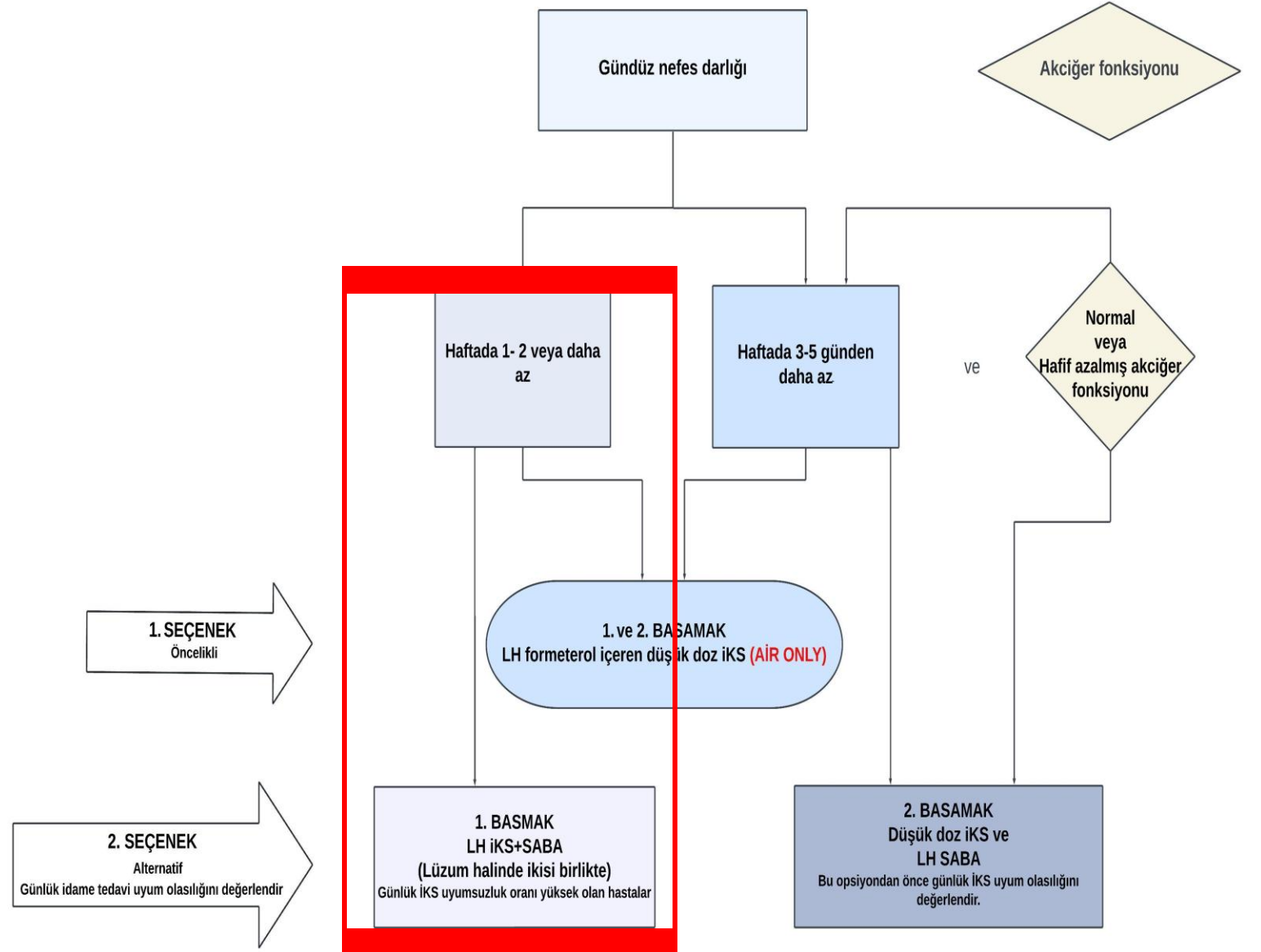
Comparison of Physician-, Biomarker-, and Symptom-Based Strategies for Adjustment of Inhaled Corticosteroid Therapy in Adults With Asthma:

The BASALT Randomized Controlled Trial

The Best Adjustment Strategy for Asthma in the Long Term (BASALT) randomized trial included 342 participants with mild to moderate persistent asthma; these individuals were

Tepetam FM.
Algoritmalarla Astım ve
İmmunoloji Hastalarının
Yönetiminde Poliklinik El
Kitabı

Track 2 Basamak 1 (hafif intermittan) adayı olan hastalar



1-2. BASAMAKTA IKS-FORMETEROL; AIR (n:9565)

SEVERE EXACERBATIONS



ED VISITS AND HOSPITALISATIONS



ICS: inhaled corticosteroid; SABA: short-acting beta₂-agonist

ICS: inhaled corticosteroid; SABA: short-acting beta₂-agonist

FORMETEROL-IKS; SABA-IKS'YE GÖRE KANIT DEĞERİ DAHA YÜKSEK



1-2. Basamakta

- Gerektiğine Budesonid-Formeterol etkinlik ve güvenilirlik kanıt değeri (n~10.000)
- Gerektiğinde IKS-SABA 1 RKÇ (n=455 Papi et al, NEJMed 2007)

BASAMAK 3-5

2. SEÇENEK KURTARICI

IKS-SABA

NASIL EKLENDİ?

MANDALA

RKÇ:N:3132 24 HAFTA

The **NEW ENGLAND**
JOURNAL of MEDICINE

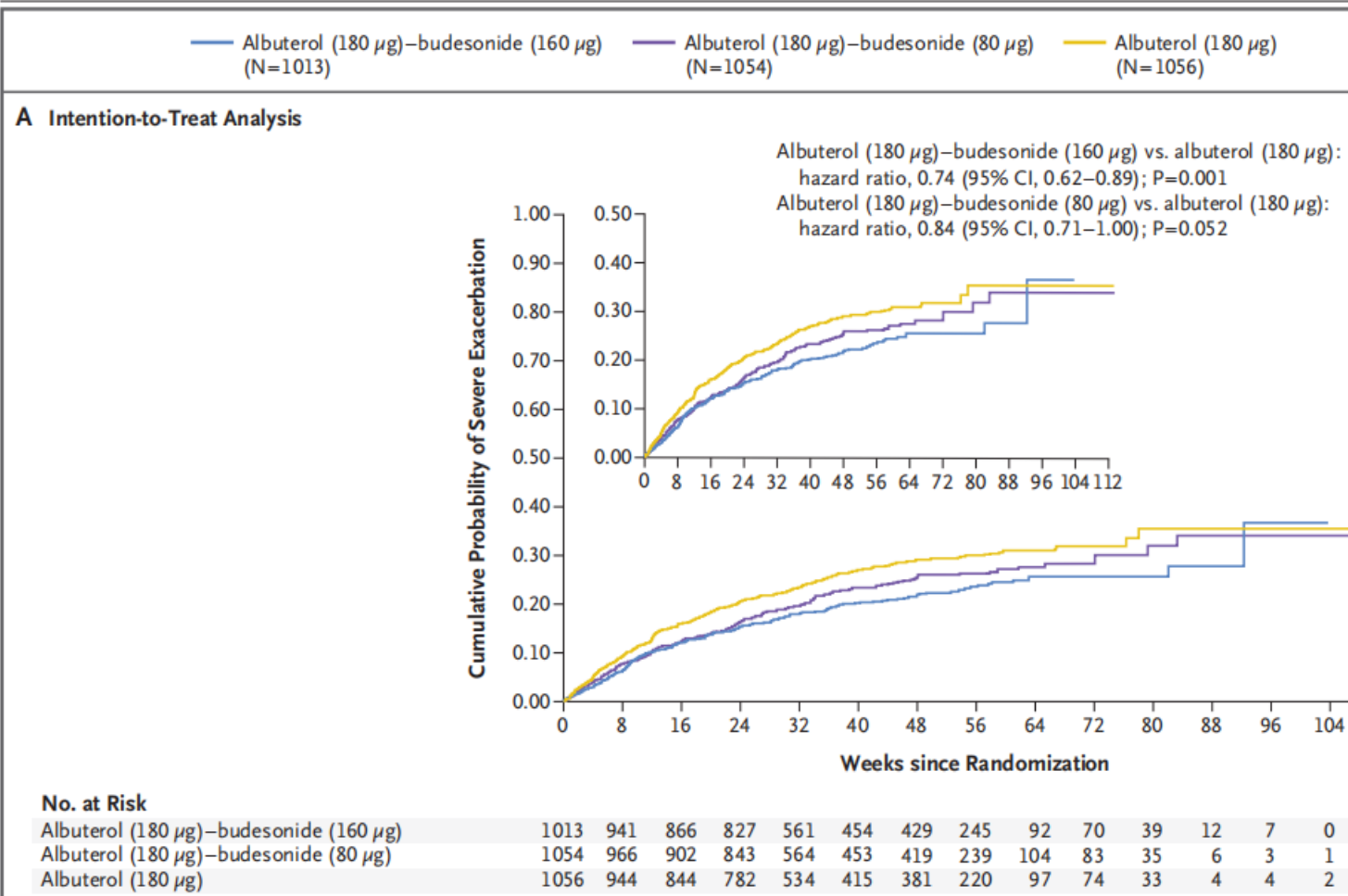
ESTABLISHED IN 1812

JUNE 2, 2022

VOL. 386 NO. 22

Albuterol–Budesonide Fixed-Dose Combination Rescue Inhaler for Asthma

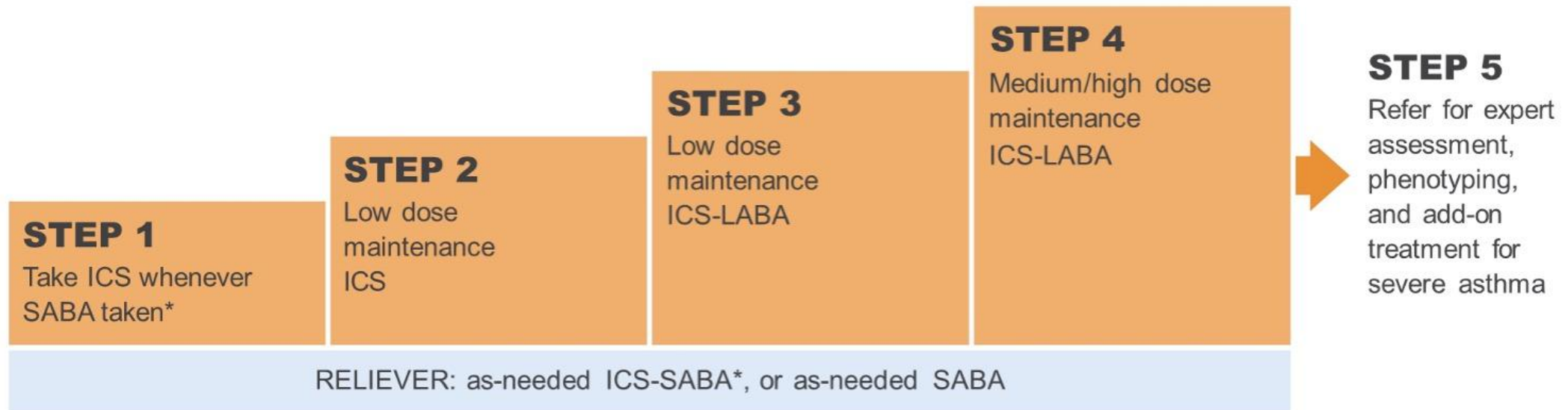
Alberto Papi, M.D., Bradley E. Chipps, M.D., Richard Beasley, D.Sc., Reynold A. Panettieri, Jr., M.D.,
Elliot Israel, M.D., Mark Cooper, M.Sc., Lynn Dunsire, M.Sc., Allison Jaynes-Ellis, M.D., Eva Johnsson, M.D.,
Robert Rees, Ph.D., Christy Cappelletti, Pharm.D., and Frank C. Albers, M.D.



ALBUTEROL-BUDESONİD FİX KOMBİNASYON
AKCİĞER ULAŞAN (DELIVERED DOSE): 90/80
2 PUF 180/160
ÖLÇÜLEN DOZ (METERED DOSE):100/100
2 PUF 200/200
HR:0.74 ATAĞ RİSKİ %26 DAHA AZ

TRACK 2, Steps 1–4: Alternative **CONTROLLER** and **RELIEVER** for adults and adolescents, with **ICS-SABA** reliever

If maintenance and reliever medications are in different types of inhaler device, or if changing steps requires a change in device, train patient in correct inhaler technique. Make sure the patient knows which inhaler should be taken regularly, and which one as needed.



Combination ICS-SABA inhaler, taken as needed

Add a new inhaler for regular use, continue as-needed inhaler

LH **X** SABA
KULLANIM KANIT YOK

Practice points

A maximum number of 6 as-needed doses (each 2 puffs of 100/100 mcg budesonide-salbutamol [80/90 mcg delivered dose]) can be taken in a day. It is essential to educate patients about the different purpose of their maintenance and

Aynı **?** İI IKS?

SABA ve IKS-SABA KULLANIM ŞEKLİ

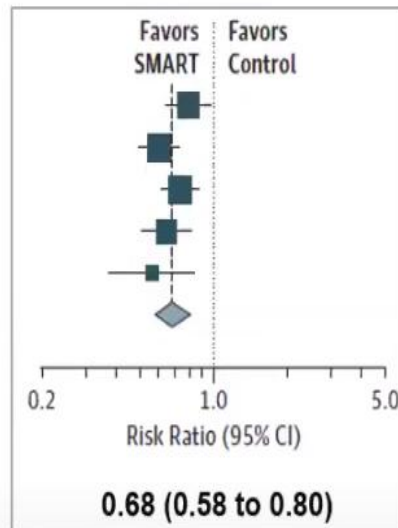


- LH 1-2 inhalasyon
 - 24 saatte maksimum 8 inhalasyon
 - Ataklarda
 - **ilk 1 saat içinde, 20 dakika aralarla 4-10 puf**
 - **1 saatten sonra, 3-4 saatte 4-10 puf veya 1-2 saatte 6-10 puf SABA**
- IKS-SABA BASAMAK 3-5 AIR
 - Budesonid- albuterol Ölçülen doz: 100/100, akciğere ulaşan doz (80/90)
 - Her ihtiyaç halinde 2 puf=200/200 mcg
 - Maximum 6 kere

BASAMAK 3-5'de

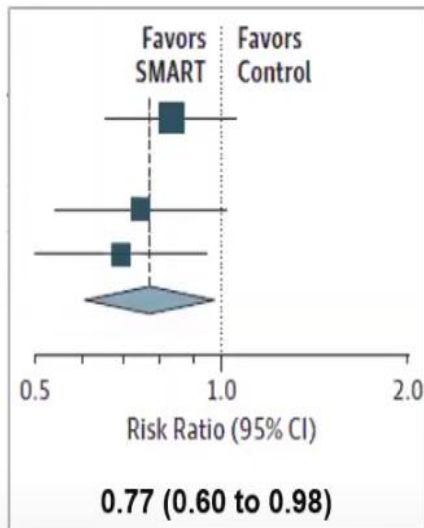
NEDEN 1. SEÇENEK İKS-Formeterol (n:30.000)

1 RCS İKS-SABA; (N:3132 Papi et. NEJMed 2022)

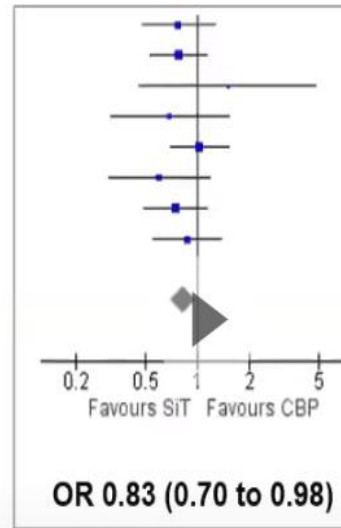


Compared with same dose ICS-LABA + SABA

*Sobieraj et al,
JAMA 2018
(n=22,748)*

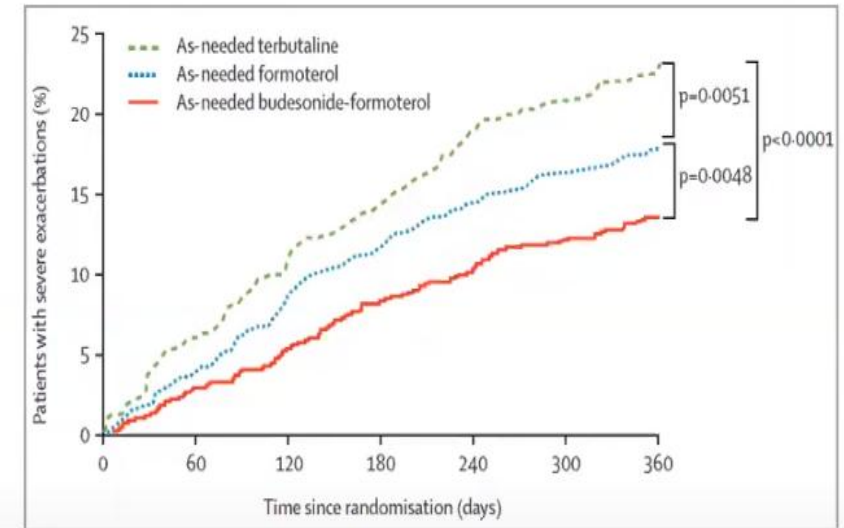


Compared with higher dose ICS-LABA + SABA



Compared with conventional best practice

*Cates et al,
Cochrane 2013
(n=4,433)*



*Rabe, Lancet 2006
N=3,395, all taking maintenance budesonide-formoterol*

GINA KURTARICI 1. YOLAK (AIR) KANIT DEĞERİ

3-5. Basamakta

- MART etkinlik ve güvenilirlik kanıt değeri (n ~30.000)
- Gerektiğinde IKS-SABA, 1 RKÇ (n=3132 Papi et al, NEJMed 2022)

GINA KURTARICI 1. YOLAK AIR AVANTAJLARI

Hastalar ve Klinisyenler için Basit olması

- İdame kurtarıcı olarak tek preparat
- Basamak çıkmak veya inmek için doz sayısını değiştirmek kafi
- Yazılı eylem planında İKS ve Formeterol doz artışı beraber yapılıyor

Semptomları rahatlatmak için

- egzersiz-alerjen maruziyetinden önce bir inhalasyon alabilirler

SABA gibi tekrar kullanabilmek için saatler boyunca beklemek durumunda değiller

- 1-3 sn sonra tekrar alabilir
- Tek seferde maksimum 6 puf

BASİT VE ETKİLİ OLAN TERCİH EDİLMELİ ÜLKEMİZDE SAYILI PREPERAT AIR İÇİN UYGUN

