

[Session1. 코로나 판데믹 이후 무엇이 달라졌나?]

코로나 판데믹 이후 바뀐 천식 가이드라인 속성 강의

김미애
차의대 내과

제63차 알레르기 교육강좌

Session 1. 코로나 판데믹 이후 무엇이 달라졌나?

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코로나 판데믹 이후 생긴 많은 변화 중 천식 치료 가이드라인은
어떤 변화가 있었는지 알아보고자 합니다

2024년 3월 17일(일요일) 9:00-9:30
분당차병원 호흡기알레르기내과
김미애

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코로나바이러스감염증-19 사태

- 중국 우한시의 폐렴 집단 발병은 우한시 위생건강위원회가 2019년 12월 31일 원인불명의 폐렴 환자 27명이 발생해 격리치료 중이라고 발표하면서 알려졌다.
- WHO는 2020년 2월 11일 신종코로나바이러스감염증의 공식 명칭을 'COVID-19'로 정했다고 발표했는데, 여기서 'CO'는 코로나(corona), 'VI'는 바이러스(virus), 'D'는 질환(disease), '19'는 신종 코로나바이러스 발병이 처음 보고된 2019년을 의미한다.
- 2020년 1월 20일 중국 우한에서 인천공항으로 입국한 35세의 중국인 여성이 코로나19 확진자로 처음 확인되면서, 우리나라에서도 확진 사례가 나왔다. 그러다 1월 27일 4번째 코로나19 확진자가 발생하자 정부는 감염병 위기경보를 '경계' 단계로 격상했으며, 이 경계 단계가 선포되면서 보건복지부 장관이 본부장을 맡는 중앙사고수습본부가 설치됐다.

[네이버 지식백과] 코로나바이러스감염증-19 사태 (시사상식사전)

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코로나바이러스감염증-19 사태

- 대구·경북 일부 지역, 특별재난지역 선포
- 마스크 수급 안정화 대책(공적 마스크 구입제도)
- 2020년 4월 1일부터 모든 입국자 2주 자가격리
- 교육부, 코로나19 확산으로 개학 연기(순차 온라인 개학)
- 역학조사, 자가격리, 사회적 거리두기
- 전자출입명부 시스템, 버스·병원 등 마스크 의무화, 방역패스
- 코로나19 백신 접종, 2021년 2월 26일부터 시작
- 오미크론 대응체계, 재택치료
- 실외 마스크 전면 해제(2022. 9. 26.~)
- 대중교통 마스크 착용의무 해제(2023. 3. 20.)
- 정부, 3년 4개월 만에 코로나19 종식 선언(2023. 5. 11.)
- 코로나19, 감염병 2급 → 4급 하향(2023. 8. 31.)

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코로나바이러스감염증-19

코로나바이러스감염증-19

발생동향 · 예방접종 현황 및 정보 · 뉴스 & 이슈 · 보도자료 & FAQ · 확진자 조치안내 · 공식사항 · 마스크 착용 · 코로나19환자 치료제

주간 양성자(표본) 감시 현황
2024년 2월 11일 ~ 17일
7,084 명
누계 191,733 명

65세 이상 어르신은
코로나19 백신 접종에
적극 참여해 주세요!
23~24분기 코로나19 백신 접종 안내

보도자료

[11.8.보리당 보도자료] 감염병 유행으로부터 국민 건강 안전하게
[9.26.보리당 보도자료] 23~24분기 코로나19 예방접종 추진계획 발표

감염병으로부터 안전한 추석연휴 보내기 (9.22.금)
주간 확진자 전주 대비 3.9% 감소, 3주 연속 감소 추세(9.6.수)

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<https://ncov.kdca.go.kr>

발행일 : 2020.1.27.

질병관리본부
KDCA

신종 코로나바이러스감염증 예방 국민 행동수칙



기침 등 호흡기 증상이 있을 경우 **마스크 착용**
(의료기관 방문 시 반드시 착용)



후베이성 등 중국 방문 후 의심증상 발생 시
관할보건소 · 지역번호 +120 · 1339 콜센터 문의



중국 여행력을 **의료진에게 알려주기**

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Contents

- 천식 진료지침 리뷰
 - GIAN 2019
 - As needed ICS-formoterol, anti-IL4R
 - GINA 2020
 - SMART
 - GINA 2021
 - Track 1(controller and preferred reliever) and track 2
 - GINA 2022
 - Anti-TSLP
 - GINA 2023
 - AIR, ICS-SABA
 - 한국 천식진료지침 2021(Korean Guideline for Asthma 2021)

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GINA

- <https://ginasthma.org/>
- Global Initiative for Asthma, Global Strategy for Asthma Management and Prevention
 - Fully revised in 2014
 - Major revision of the GINA report in 2014
 - Asthma severity ⇒ asthma **symptom control and risk reduction**
 - Updated in 2015, 2016, 2017, 2018, **2019**, 2020, **2021**, 2022, 2023
 - Treatment steps
 - Biologics

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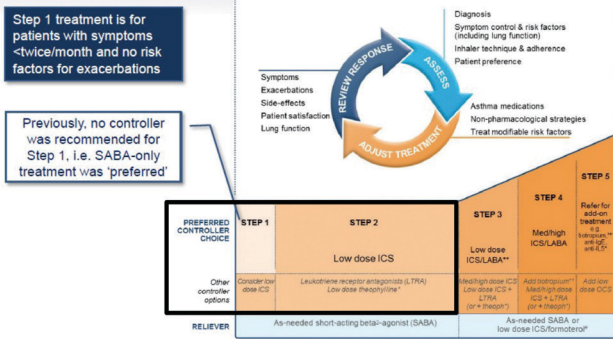
GINA 2019 – Landmark changes in asthma management

- 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 symptom-driven or regular low dose ICS-containing controller treatment**, to reduce the risk of serious exacerbations
 - This is a **population-level risk reduction strategy**, e.g. statins, anti-hypertensives.

ICS 강조!!!

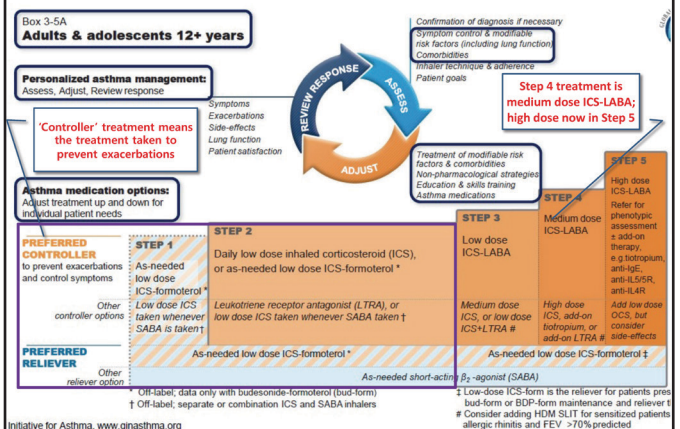
Global Initiative for Asthma. Global Strategy for Asthma Management and Prevention, 2019

GINA 2018 – main treatment figure



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GINA 2019



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GINA 2020

Box 3-5A
Adults & adolescents 12+ years

Personalized asthma management:
Assess, Adjust, Review response

Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

Assthma medication options:
Adjust treatment up and down for individual patient needs

STEP 1
As-needed low dose ICS-formoterol*

STEP 2
Daily low dose inhaled corticosteroid (ICS), or as-needed low dose ICS-formoterol*

STEP 3
Low dose ICS-LABA

STEP 4
Medium dose ICS-LABA

STEP 5
High dose ICS-LABA
Refer for phenotypic assessment, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

As-needed low dose ICS-formoterol*
As-needed short-acting β_2 -agonist (SABA)

As-needed short-acting β_2 -agonist (SABA)

* Data only with budesonide-formoterol (bud-form)
† Separate or combination ICS and SABA inhalers

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GINA 2021

Box 3-5A. Personalized management for adults and adolescents to control symptoms and minimize future risk

Adults & adolescents 12+ years

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

Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

Track 1

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

STEP 1-2
As-needed low dose ICS-formoterol

STEP 3
Low dose maintenance ICS-formoterol

STEP 4
Medium dose maintenance ICS-formoterol

STEP 5
Add-on LAMA. Refer for phenotypic assessment, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

RELIEVER: As-needed low-dose ICS-formoterol

Track 2

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.

STEP 1
Take ICS whenever SABA taken

STEP 2
Low dose maintenance ICS

STEP 3
Low dose maintenance ICS-LABA

STEP 4
Medium/high dose maintenance ICS-LABA

STEP 5
Add-on LAMA. Refer for phenotypic assessment, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

RELIEVER: As-needed short-acting β_2 -agonist

Other controller options for either track

Low dose ICS whenever SABA taken, or daily LTRA, or add-on HDM SLIT

Medium dose ICS, or add-on LTRA, or add-on HDM SLIT

Add LAMA or LTRA or HDM SLIT, or switch to high-dose ICS

Add add-on therapy (allergy or LTRA, add-on one dose OCS, add-on one dose OCS but consider side-effects)

HDM: house dust mite; ICS: inhaled corticosteroid; LABA: long-acting β_2 -agonist; LAMA: long-acting muscarinic antagonist; LTRA: leukotriene receptor antagonist; OCS: oral corticosteroids; SABA: short-acting β_2 -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 2022

Adults & adolescents 12+ years

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

Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (including lung function)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

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

STEP 1-2
As-needed low dose ICS-formoterol

STEP 3
Low dose maintenance ICS-formoterol

STEP 4
Medium dose maintenance ICS-formoterol

STEP 5
Add-on LAMA. Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

RELIEVER: As-needed low-dose ICS-formoterol

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.

STEP 1
Take ICS whenever SABA taken

STEP 2
Low dose maintenance ICS

STEP 3
Low dose maintenance ICS-LABA

STEP 4
Medium/high dose maintenance ICS-LABA

STEP 5
Add-on LAMA. Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

RELIEVER: As-needed short-acting β_2 -agonist

Other controller options for either track (limited indications, or less evidence for efficacy or safety)

Low dose ICS whenever SABA taken, or daily LTRA, or add-on HDM SLIT

Add LAMA or LTRA or HDM SLIT, or switch to high-dose ICS

Add add-on therapy (allergy or LTRA, add-on one dose OCS, add-on one dose OCS but consider side-effects)

GINA 2022, Box 3-5A

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GINA 2023

GINA 2023 – Adults & adolescents 12+ years

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

Confirmation of diagnosis if necessary
Symptom control & modifiable risk factors (see Box 2-2)
Comorbidities
Inhaler technique & adherence
Patient preferences and goals

Symptoms
Exacerbations
Side-effects
Lung function
Patient satisfaction

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.

STEP 1-2
As-needed only low dose ICS-formoterol

STEP 3
Low dose maintenance ICS-formoterol

STEP 4
Medium dose maintenance ICS-formoterol

STEP 5
Add-on LAMA. Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

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

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.

STEP 1
Take ICS whenever SABA taken

STEP 2
Low dose maintenance ICS

STEP 3
Low dose maintenance ICS-LABA

STEP 4
Medium/high dose maintenance ICS-LABA

STEP 5
Add-on LAMA. Refer for assessment of phenotype. Consider high dose maintenance ICS-formoterol, a add-on therapy, e.g. tiotropium, anti-IgE, anti-IL5/6, anti-IL4/6, anti-IL13

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

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

Low dose ICS whenever SABA taken*, or daily LTRA, or add-on HDM SLIT

Medium dose ICS, or add-on LTRA, or add-on HDM SLIT

Add LAMA or LTRA or HDM SLIT*, or switch to high-dose ICS

Add add-on therapy (allergy or LTRA, add-on one dose OCS, add-on one dose OCS but consider side-effects)

GINA 2023, Box 3-12

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Updates of GINA 2023(ginasthma.org)

2023 GINA MAIN REPORT

2023 GINA Report, Global Strategy for Asthma Management and Prevention

The 2023 update of the Global Strategy for Asthma Management and Prevention incorporates new scientific information about asthma based on a review of recent scientific literature by an international panel of experts on the GINA Science Committee. This comprehensive and practical resource about one of the most common chronic lung diseases worldwide contains extensive information from the scientific literature and forms the basis for other GINA documents and programs.

2023 GINA REPORT – DOWNLOAD FOR PERSONAL USE

Updated report posted July 20, 2023 with minor corrections and clarifications.

WHAT'S NEW IN 2023 – SLIDE SET

2023 GINA main report
2023 Severe asthma G/L
2023 GINA slide set

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NEWS

In Memoriam: A Tribute to Claude Lenfant - 10/13/1930 to 10/26/2023 August 3, 2023

It is with sadness that we report the passing of Claude Lenfant on June 26, 2023 in Vancouver, BC.

Global Initiative for Asthma (GINA) urges authorities and clinicians to consider safety for patients as well as safety for the planet July 20, 2023

PRE-RELEASE: JULY 19, 2023 Global Initiative for Asthma (GINA) urges authorities and clinicians to...

2023 What's New in GINA Slide Set July 12, 2023

The 2023 What's New in GINA slide set is now available. Click the button below to download. The...

Updates of GINA 2023

What's new in GINA 2023?

Global Strategy for Asthma Management and Prevention

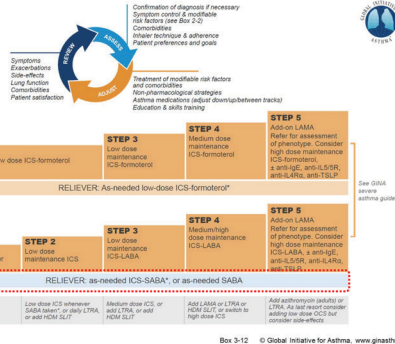
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GINA 2023

GINA 2023 – Adults & adolescents 12+ years

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



Box 3-12 © Global Initiative for Asthma, www.ginasthma.org

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What's new in GINA 2023?

Terminology

- **Anti-Inflammatory Reliever = AIR**
 - e.g. ICS-formoterol, ICS-SABA
 - Provides rapid symptom relief, plus a small dose of ICS
 - Reduces the risk of exacerbations, compared with using a SABA reliever

Regimens with ICS-formoterol anti-inflammatory reliever

- **As-needed-only ICS-formoterol = AIR-only**
 - The patient takes low-dose ICS-formoterol whenever needed for symptom relief
- **Maintenance And Reliever Therapy with ICS-formoterol = MART**
 - A low dose of ICS-formoterol is used as the patient's maintenance treatment, plus whenever needed for symptom relief
- ICS-formoterol can also be used before exercise or allergen exposure

ICS: inhaled corticosteroid; SABA: short-acting beta₂-agonist; MART is sometimes also called SMART

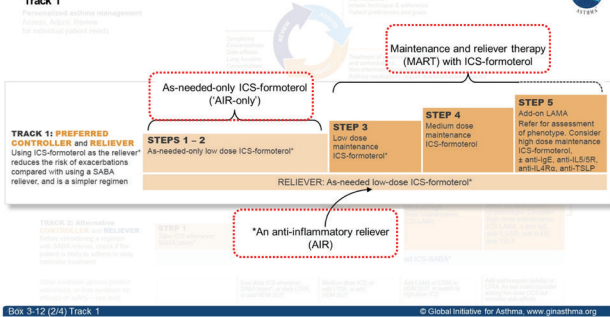
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GINA 2023: track 1

GINA 2023 – Adults and adolescents Track 1

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



Box 3-12 (2/4) Track 1

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Evidences of AIR in track 1, step 1-2

Track 1, Steps 1–2: As-needed-only low-dose ICS-formoterol

- Risk of severe exacerbations (Crossingham et al, Cochrane 2021)
 - Compared with as-needed SABA alone: **55% reduction** (OR 0.45 [0.34–0.60])
 - Compared with daily ICS plus as-needed SABA: (OR 0.79 [0.59–1.07])
- Risk of emergency department visits or hospitalizations (Crossingham et al, Cochrane 2021)
 - Compared with as-needed SABA alone: **65% reduction** (OR 0.35 [0.20–0.60])
 - Compared with daily ICS plus as-needed SABA: **37% reduction** (OR 0.63 [0.44–0.91])
 - Large population-level reduction in healthcare utilization

- SABA와 비교 시 중증 악화 55% 감소, 응급실 내원/입원 65% 감소
- ICS+필요시 벤토린과 비교했을 때에도 감소 (이유: 순응도, 결국 벤토린 단독사용)

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Track 1에서 ICS-formoterol 사용 방법

Step	Age (years)	Medication and device (check patient can use inhaler)	Metered dose (mcg/inhalation)	Delivered dose (mcg/inhalation)	Dosage
Steps 1–2 (AIR-only)	6–11 (No evidence)		–	–	–
	12–17 ≥18	Budesonide-formoterol DPI	200/6	160/4.5	1 inhalation whenever needed
Step 3 MART	6–11	Budesonide-formoterol DPI	100/6	80/4.5	1 inhalation once daily, PLUS 1 inhalation whenever needed
	12–17 ≥18	Budesonide-formoterol DPI	200/6	160/4.5	1 inhalation once or twice daily, PLUS 1 inhalation whenever needed
	≥18	BDP-formoterol pMDI	100/6	84.6/5.0	1 inhalation twice daily, PLUS 1 inhalation whenever needed
Step 4 MART	6–11	Budesonide-formoterol DPI	100/6	80/4.5	1 inhalation twice daily, PLUS 1 inhalation whenever needed
	12–17 ≥18	Budesonide-formoterol DPI	200/6	160/4.5	2 inhalations twice daily, PLUS 1 inhalation whenever needed
	≥18	BDP-formoterol pMDI	100/6	84.6/5.0	2 inhalations twice daily, PLUS 1 inhalation whenever needed
Step 5 MART	6–11 (No evidence)		–	–	–
	12–17 ≥18	Budesonide-formoterol DPI	200/6	160/4.5	2 inhalations twice daily, PLUS 1 inhalation whenever needed
	≥18	BDP-formoterol pMDI	100/6	84.6/5.0	2 inhalations twice daily, PLUS 1 inhalation whenever needed

DPI: dry powder inhaler; pMDI: pressurized metered dose inhaler. For budesonide-formoterol pMDI with 2 puffs (2.25 mcg/formoterol) use double number of puffs.
GINA 2023 from Box 3-15 © Global Initiative for Asthma, www.ginasthma.org

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GINA track 1 치료에 대한 tips

Practical advice for GINA Track 1

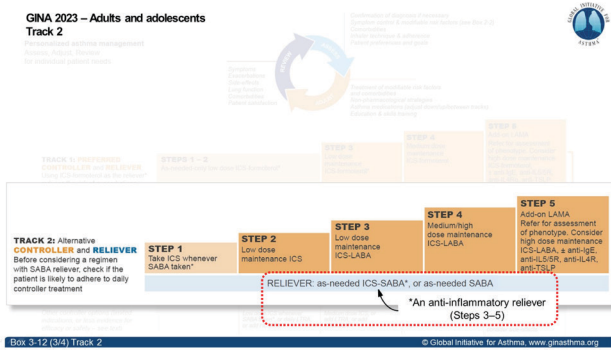
- At first, patients may be unsure whether ICS-formoterol will work as well as their previous SABA reliever
 - In the PRACTICAL study, 69% patients said ICS-formoterol worked as fast as, or faster than, their previous SABA (Baggott et al, ERJ 2020)
 - Suggest to the patient that they try out the new reliever at a convenient time
 - Emphasise that they should use the ICS-formoterol **instead** of their previous SABA, and that they should take an additional inhalation when they have more symptoms
- Advise patients to have two inhalers (if possible), 1 at home, 1 in bag/pocket
- Advise patients to rinse and spit out after maintenance doses, but this is not needed with reliever doses
 - No increased incidence of candidiasis in RCTs with this recommendation (n=40,000)
- Use an action plan customised to MART
 - The patient continues their usual maintenance ICS-formoterol inhalations, but takes more **as-needed** ICS-formoterol inhalations
 - Taking extra as-needed inhalations reduces the risk of progressing to a severe exacerbation needing oral corticosteroids (Bousquet et al, Respir Med 2007; Bui et al, Respir Res 2012; O'Byrne et al, Lancet Respir Med 2021)
- Additional practical advice for MART (Reddel et al, JACI in Practice 2022)

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GINA 2023: track 2

GINA 2023 – Adults and adolescents
Track 2



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As needed ICS/SABA in track 2, step 1-2

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

Combination as-needed ICS-SABA

- **BEST study, combination BDP-albuterol** (*Papi et al, NEJM* 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

- TREXIA 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: beclomethasone dipropionate; ICS: inhaled corticosteroids; SABA: short-acting beta2-agonists

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As needed ICS/SABA in track 2, step 3-5

Track 2, Steps 3–5: as-needed ICS-SABA added to maintenance treatment

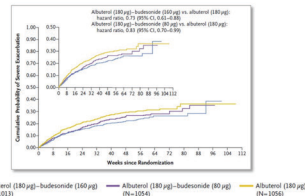
THE NEW ENGLAND JOURNAL OF MEDICINE

Albuterol-Eudesonide Fixed-Dose Combination Rescue Inhaler for Asthma

Alberto Papi, M.D., Bradley E. Chippis, 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.

Papi et al, NEJMed 2022 (n=3,132)

- Hazard ratio for probability of severe exacerbations was 0.73 (95% CI 0.61–0.88) with higher dose of as-needed albuterol-budesonide compared with as-needed albuterol
- Most benefit seen in Step 3

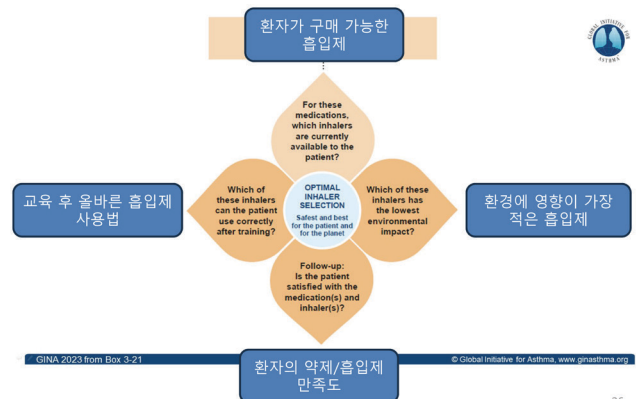


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증상 시 ICS 포함 기관지확장제 추가 사용이 이득

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Optimal inhaler selection
각각의 환자에게 가장 적절한 치료를 찾자!



GINA 2023 from Box 3-21

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요약(GINA 2023)

- Track 2 reliever(steps 3-5): as-needed ICS-SABA(국내-)
- Track 1, new terminology
 - AIR(anti-inflammatory reliever)
 - AIR-only
 - MART
 - maintenance and reliever therapy with ICS-formoterol
- Track 1, ICS-formoterol 사용 방법(횟수 정리)

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COVID 19 & Asthma

GINA guidance about COVID-19 and asthma

Updated 26 April 2021



GINA Global Strategy for Asthma Management and Prevention

www.ginasthma.org

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COVID-19 and asthma

- Are people with asthma at increased risk of COVID-19, or severe COVID-19?
 - People with asthma do **not** appear to be at increased risk of acquiring COVID-19, and systematic reviews have not shown an increased risk of severe COVID-19 in people with well-controlled, mild-to-moderate asthma
- Are people with asthma at increased risk of COVID-19-related death?
 - Overall, people with well-controlled asthma are **not** at increased risk of COVID-19-related death
 - However, the risk of COVID-19 death was increased in people who had recently needed OCS for their asthma and in hospitalized patients with severe asthma.

Asthma, **not** increase COVID-19 risk

Asthma, **not** increase COVID-19-related death in well-controlled asthma
(but increase COVID-19-related death in recently needed OCS)

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COVID-19 and asthma

- What are the implications for asthma management?
 - It is important to **continue** good asthma management (as described in the GINA report), with strategies to maintain good symptom control, reduce the risk of severe exacerbations and minimise the need for OCS
- Have there been more asthma exacerbations during the pandemic?
 - **No.**
 - In 2020, many countries saw a **reduction** in asthma exacerbations and influenza-related illness.
 - The reasons are not precisely known, but may be due to handwashing, masks and social/physical distancing that reduced the incidence of other respiratory infections, including influenza.

Asthma management, maintain to minimize the need for OCS

Asthma AE during pandemic, not increased.

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COVID-19 and asthma - medications

- Advise patients to **continue** taking their prescribed asthma medications, particularly inhaled corticosteroids.
 - For patients with **severe asthma**, **continue** biologic therapy or oral corticosteroids if prescribed
- Are inhaled corticosteroids (ICS) protective in COVID-19?
 - In one study of hospitalized patients aged ≥50 years with COVID-19, ICS use in those with asthma was associated with lower mortality than in patients without an underlying respiratory condition.

Continue ICS

Continue biologics/OCS in severe asthma, if prescribed
ICS, protective in mortality of COVID-19 (1 study)

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COVID-19 and asthma - medications

- Make sure that all patients have a **written asthma action plan**, advising them to:
 - Increase controller and reliever medication when asthma worsens (see GINA report Box 4-2)
 - Take a short course of OCS when appropriate for severe asthma exacerbations
- **Avoid nebulizers** where possible, to reduce the risk of spreading virus
 - **Pressurized metered dose inhaler** via a spacer is preferred except for life-threatening exacerbations
 - Add a mouthpiece or mask to the spacer if required

Written asthma action plan

Avoid nebulizer

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COVID-19 and asthma – infection control

- **Avoid** spirometry in patients with confirmed or suspected COVID-19, or if community transmission of COVID-19 is occurring in your region
 - Follow aerosol, droplet and contact precautions if spirometry is needed
 - Consider asking patients to monitor PEF at home, if information about lung function is needed
- Follow strict infection control procedures if aerosol-generating procedures are needed
 - Nebulization, oxygen therapy (including nasal prongs), sputum induction, manual ventilation, non-invasive ventilation and intubation
- Follow local health advice about hygiene strategies and use of personal protective equipment, as new information becomes available in your country or region

Avoid spirometry in confirmed or suspected COVID-19

Strict infection control, aerosol-generating procedure
Local health advice, personal protective equipment

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COVID-19 vaccines and asthma

- Have COVID-19 vaccines been studied in people with asthma?
 - **Yes.**
 - Many types of COVID-19 vaccines have been studied and are being used worldwide
 - New evidence, including in people with asthma, will emerge over time
- Are COVID-19 vaccines safe in people with allergies?
 - In general, allergic reactions to vaccines are rare.
 - The Pfizer/BioNTek and Moderna COVID-19 vaccines should be administered in a healthcare setting where anaphylaxis can be treated if it occurs.
 - These vaccines should not be administered to patients with a history of **severe allergic reaction to polyethylene glycol**, or any other vaccine ingredient.
 - As always, patients should speak to their healthcare provider if they have concerns.

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COVID-19 vaccines and asthma

- Usual vaccine precautions apply, for example:
 - Ask if the patient has a history of allergy to any components of the vaccine.
 - If the patient has a fever or another infection, delay vaccination until they are well.
- At present, based on the risks and benefits, and with the above caution, GINA recommends COVID-19 vaccination for people with asthma.

Asthma, COVID vaccine, usual vaccine precaution

GINA recommends COVID-19 vaccination for people with asthma

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COVID-19 vaccines and asthma

- COVID-19 vaccination and **biologic therapy**
 - We suggest that biologic therapy and COVID-19 vaccine should **not** be given **on the same day**, so that adverse effects of either can be more easily distinguished.
- After COVID-19 vaccination
 - Current advice from the United States Centers for Disease Control and Prevention (CDC) is that people who have been fully vaccinated against COVID-19 should continue to wear a **mask** in crowded settings.
- Influenza vaccination
 - Remind people with asthma to have an annual influenza vaccination
 - A gap of **14 days** between COVID-19 vaccination and influenza vaccination is recommended by CDC
- GINA will update advice about COVID-19 and asthma as new data become available.

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Korean Guideline for Asthma 2021
한국 천식진료지침 2021

대한천식알레르기학회

가래의원칙 (TILICH)

성명	소속 기관	전공과
오재원 (위원장)	한양대학교 구리병원	소아청소년과
강성훈	가천대 길병원	내과
김라재	분당지병원	내과
김지현	강동성심병원	소아청소년과
김보현	삼성병원	소아청소년과
한복기	순천향대학교 서울병원	소아청소년과
박종민	건국대학교병원	소아청소년과
변가영	강동성심병원	내과
신우성	아주대학교병원	내과
양민석	서울특별시 강서구병원	내과
정승희	한양대학교 성심병원	소아청소년과

자문위원 (TILICH)

성명	소속 기관	전공과
고영환	한양대학교병원	내과
김상현	한양대학교병원	내과
김상훈	노원동지대학교병원	내과
김동우	한양대학교병원	내과
김대현	서울아산병원	내과
김원희	의정부 상원병원	소아청소년과
남종우	아주대학교병원	내과
박종우	서울대학교병원	소아청소년과
송현정	세브란스병원	소아청소년과
민정훈	경희대학교병원	소아청소년과
오민재	서울아산병원	내과
유인호	서울아산병원	소아청소년과
이병재	삼성서울병원	내과
이성훈	가천대 길병원	내과
임다현	한양대학교병원	소아청소년과
정민우	순천향대학교 서울병원	내과
정민석	분당서울대학교병원	내과
정재현	일산백병원	내과
정종구	단국대학교병원	내과

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진료지침

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제1장 총론

가. 천식의 정의
나. 천식의 사회경제적 부담
다. 천식의 원인과 악화인자
라. 천식의 기전

제2장 진단과 분류

가. 성인 천식 진단
나. 소아 천식 진단
다. 감별진단

제3장 치료와 모니터링

가. 비약물치료
나. 약물 유지치료
다. 급성 악화 치료

제4장 특수 상황에서의 천식

가. 천식-만성폐쇄성질환 중첩(Asthma-COPD overlap, ACO)
나. 임신
다. 수술
라. 비염, 비부비동염, 비염종
마. 직업천식
바. 호흡기 감염
사. 위식도역류
아. 아스피린 과민천식
자. 운동유발기관지수축
차. 난치성 천식과 중증 천식
카. 노인 천식

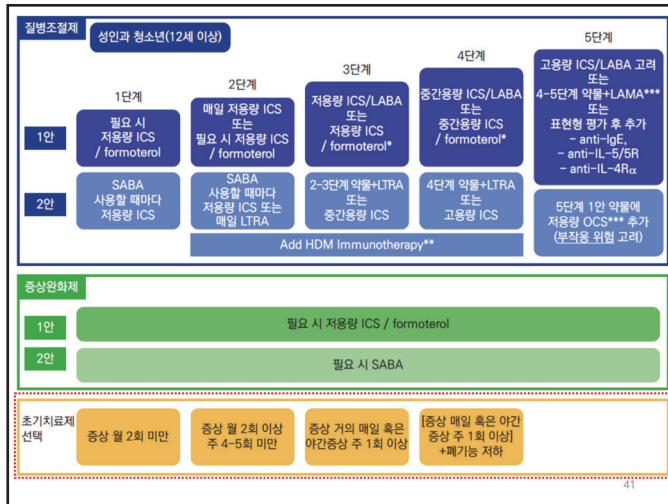
제5장 교육

가. 흡입기 사용법과 횡수
나. 천식 환자 행동수칙

천식 약물치료

- 질병조절제
 - ① 흡입 스테로이드
 - ② 흡입 스테로이드/지속 베타2 항진제
 - ③ 류코트리엔 조절제
 - ④ 테오필린 등 크산틴계 약물
- 증상완화제
 - ① 속효 흡입 베타2 항진제
 - ② 저용량 흡입 스테로이드/포모데롤 복합제
- 천식 조절을 위한 추가 약물
 - ① 지속 항콜린 기관지확장제
 - ② 생물학적 제제
 - ③ 전신 스테로이드(부작용 주의)
 - ④ 면역요법(specific allergen immunotherapy)
 - ⑤ 기타 질병조절제
 - 마크로라이드
 - 면역억제제

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2019 천식 치료 가이드 라인 변화에 따른 치료 변화 예시

- 25세 여자가 천식 약제 조절 상담을 위해 내원하였다.
- 10년 전 천식 진단을 받았고, 그간 유지치료 없이 숨차거나 쌉쌉 소리가 날 때만 근처 병원에서 벤토린을 처방받아 사용했다.
- 최근 1년 이내 악화력은 없었고, 폐활량은 정상이었다.
- 최근 1개월 간 증상 조절 상태를 질문했을 때, 낮 증상 월 1회, 야간 증상이나 활동 제한 없고 증상 완화제 사용한 적은 없었다.
- 이 환자에게 향후 유지 치료를 설명하시오.

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2019 천식 치료 가이드 라인 변화에 따른 치료 변화 예시

- 최근 1년 이내 악화력은 없었고, 폐활량은 정상이었다.
- 최근 1개월 간 증상 조절 상태를 질문했을 때, 낮 증상 월 1회, 야간 증상이나 활동 제한 없고 증상 완화제 사용한 적은 없었다.

천식 평가

- ①증상 조절(월 2회 이하) & ②미래 위험(해당 사항 없음)

⇒ GINA step 1(As needed ICS/formoterol or as needed SABA with ICS)

표 3-8. 천식 조절 평가

천식 증상 조절				
지난 4주간 환자가 경험한 증상	조절	부분조절	조절 안 됨	
일주일에 2번을 초과하는 주간 증상	있음 <input type="checkbox"/> 없음 <input type="checkbox"/>	모두 없음	1-2개	3-4개
천식으로 인한 야간 증상	있음 <input type="checkbox"/> 없음 <input type="checkbox"/>			
일주일에 2번을 초과하는 증상완화제 사용*	있음 <input type="checkbox"/> 없음 <input type="checkbox"/>			
천식으로 인한 활동 제한	있음 <input type="checkbox"/> 없음 <input type="checkbox"/>			

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