PHARMACY Bulletin

Edition 19, Issue 11

Pharmacy Department, Hospital Canselor Tuanku Muhriz

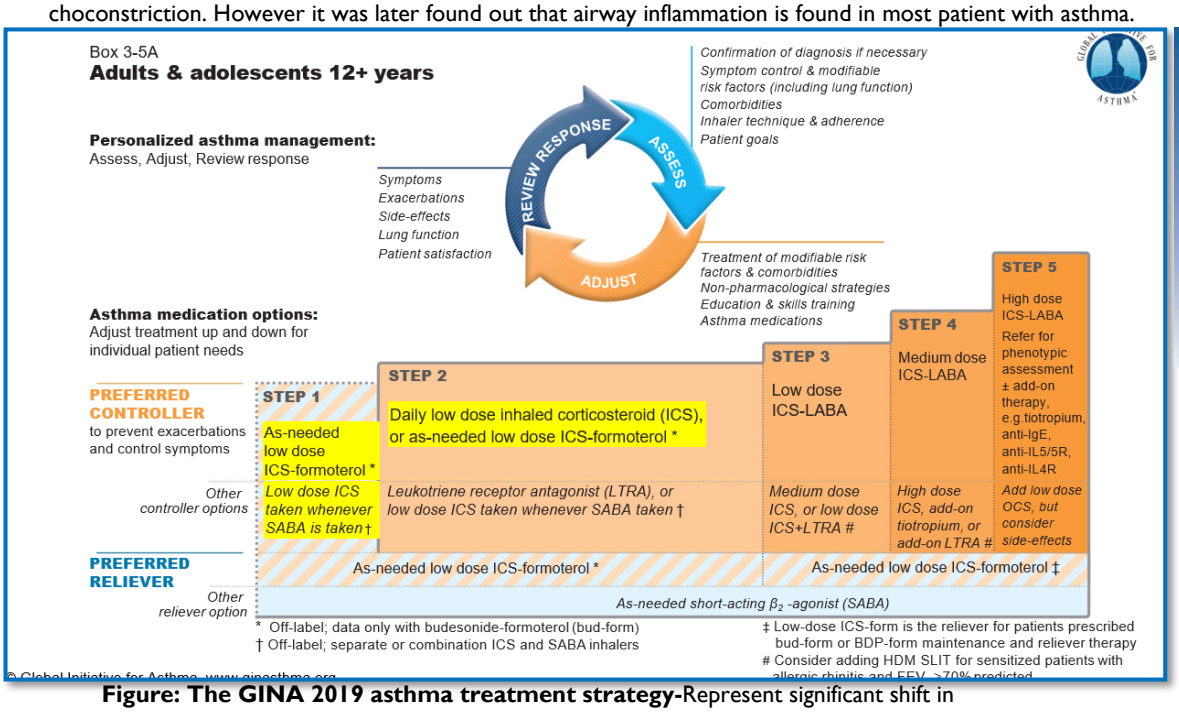
What's New in GINA 2019?

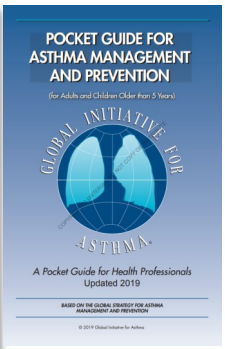
By Nur Hafiza Saripin

Following updates of Global Initiatives for Asthma (GINA) 2019, we would like to highlight a significant change in recommendations for mild asthma: [1]

GINA no longer recommends treatment with short-acting beta$_2$-agonist (SABA) (Eg: Salbutamol) alone. GINA now recommends that all adult and adolescents with asthma **should receive ICS-containing controller treatment**, to reduce their risk of serious exacerbations and to control symptoms.

- SABA do not address the underlying inflammatory process or protect against exacerbation risk. Even though SABA only treatment provides short-term relief of asthma symptoms, there is strong evidence that it does not protect patients from severe exacerbation, on the contrary regular or frequent use of SABAs actually increases the risk of exacerbations.
- Inhaled SABA has been first-line treatment for asthma for 50 years, from the era when asthma was thought to be a disease of bronchoconstriction. However it was later found out that airway inflammation is found in most patient with asthma.





ICS=Inhaled corticosteroid
LABA=Long Acting Beta Agonist

Figure: The GINA 2019 asthma treatment strategy-Represent significant shift in asthma management at Steps 1 and 2.

Previous version of GINA suggested that mild asthma can be well managed with either reliever medications for example SABA alone or with additional use of controller such as regular low-dose ICS. Given the low frequency nature of symptoms in mild asthma, **patient's adherence towards their daily controller medications is usually non satisfactory**, leads to under-treatment of underlying inflammation and increase risk of exacerbation.

Therefore, such patient often rely on SABAs alone to relieve symptoms, which may contribute to SABA overuse. Earlier studies has shown that **higher usage of SABAs without anti-inflammatory treatment was associated with increase risk of asthma-related deaths and amplified level of airway inflammation**.

The SYGMA 1 and 2 Trials compared as needed (PRN) vs maintenance regimens for the budesonide (ICS) - formoterol combination, and it was found that the **use of PRN ICS-formoterol has the advantage of lower exposure to ICSs** (similar rate of lowering in annualized rate of exacerbation with one fourth the level of ICS exposure in PRN arm compared to maintenance regimen arm).

The use of LABA without ICS is contraindicated in asthma [3,4,5]

A placebo-controlled study of **Salmeterol Multicenter Asthma Research Trial (SMART)** showed a statistically significant, fourfold increase in asthma-related deaths with salmeterol.

Chronic use of LABA downregulates the B_2-adrenoreceptors and causes tolerance. It can impair the response to SABA when they are needed for acute attack and increase the risk of mortality.

Combination of LABA with ICS reduced the risk of tolerance since ICS upregulates the B_2-adrenoreceptor expression as well as controlling the inflammatory processes.

Inhalers Available in HCTM

Generic Drug Name	Brand Name	Inhaler Type	Licensed for	
			Asthma	COPD
Short Acting Beta$_2$-Agonists (SABA)				
Salbutamol (Albuterol)	*Ventolin*	MDI	•	•
	Buventol	DPI	•	•
Long Acting Beta$_2$-Agonists (LABA)				
Indacaterol Maleate	*Onbrez Breezhaler*	DPI		•
Short Acting Muscarinic Antagonists (SAMA)				
Ipratopium Bromide	*Atrovent N*	MDI	•	•
Long Acting Muscarinic Antagonists (LAMA)				
Glycopyrronium Bromide **NEW!**	*Seebri Breezhaler*	DPI		•
Tiotropium Bromide	*Spiriva Respimat*	SMI	•	•
SAMA + SABA				
Ipratopium Bromide + Fenoterol Hidrobromide	*Berodual N*	MDI	•	•
LAMA + LABA				
Glycopyrronium + Indacaterol	*Ultibro Breezhaler*	DPI		•
Tiotropium Bromide + Olodaterol **NEW!**	*Spiolto Respimat*	SMI		•
Umeclidinium Bromide + Vilanterol **NEW!**	*Anoro Ellipta*	DPI		•
Inhaled Corticosteroid (ICS)				
Beclomethasone Dipropionate	*Becotide*	MDI	•	
Budesonide	*Pulmicort*	DPI	•	
	Giona	DPI	•	
Ciclesonide	*Alvesco*	MDI	•	
ICS + LABA				
Beclomethasone + Formoterol	*Foster*	MDI	•	•
Budesonide + Formoterol	*Symbicort*	DPI	•	•
Fluticasone + Salmeterol	*Seretide Evohaler*	MDI	•	•
	Seretide Accuhaler	DPI	•	•
Fluticasone + Vilanterol	*Relvar Ellipta*	DPI	•	•
Fluticasone + Formoterol **NEW!**	*Flutiform*	SMI	•	

MDI = metered dose inhaler; DPI = dry powder inhaler; SMI = soft mist

New Inhalers On Board

Seebri Breezhaler 50ug Inhalation Capsule

Spiolto Respimat Inhalation Solution

Anoro Ellipta Inhalation Powder

Flutiform Inhalation Suspension

PPUKM Formulary App is now available on:

GET IT ON Google Play (Drug Formulary DIY)

Available on the App Store (PPUKM Drug Formulary)

Co-Editors

Michelle Tan Hwee Pheng hptan@ppukkm.ukm.edu.my
Izyan Diyana Ibrahim izyandi@ppukm.ukm.edu.my
Nur Hafiza Saripin nurhafiza@ppukm.ukm.edu.my

A publication of Drug Information Centre

PDF version available at https://www.ppukm.ukm.my/

References:

1. Global Initiatives for Asthma (GINA) 2019
2. Muneswarao J, Hassali M, Ibrahim B, Saini B, Ali I, Verma A. It is time to change the way we manage mild asthma: an update in GINA 2019. Respiratory Research. 2019;20(1).
3. Johnston S, Edwards M. Mechanisms of adverse effects of β-agonists in asthma. 2019.
4. Lemanske, RF. Beta agonists in asthma: Controversy regarding chronic use. Bochner BS, Hollingsworth, H. ed. UpToDate. Waltham, MA: UpToDate Inc. http://www.uptodate.com (Accessed on December 24, 2019).
5. Morales D. LABA monotherapy in asthma: an avoidable problem. British Journal of General Practice. 2013;63 (617):627-628.