

UNIT NO. I

UPDATES IN ASTHMA GUIDELINES 2009

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ABSTRACT

This update summarizes the key recommendations from the latest re-incarnation of the WHO/GINA practice guidelines. We present the nuts and bolts in applying current clinical evidence to achieve long term asthma control in routine primary care practice. We describe pivotal action steps which employ simple yet effective tool kits such as the Asthma Control Test, Written Asthma Action Plans and Single (drug) Maintenance And Rescue Treatment strategies. We have evolved these practical solutions from clinical experience involving over 10,000 high risk asthma patients in the Singapore National Asthma Program.

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INTRODUCTION

We have seen major advances in the understanding of bronchial asthma in recent years. Many of these have direct implications for the care of patients with clinical asthma. And they have been reviewed, collated and published in various clinical practice guidelines (CPG). The most widely accessible and cited asthma CPG globally is the version from the WHO/GINA which had just been updated in end 2008.^{1,2}

Despite much effort in summarizing and making the CPG as practical and user friendly as possible, the WHO/GINA CPG remains a formidable text for most busy GPs to read and digest. In order to translate knowledge into practical action and to do this for all patients at every visit will be a real challenge for any primary practice clinic which does not specialize in asthma care.

Thus, this skills course will focus on describing those pivotal action steps a GP must take in order to maximize the chances of achieving good to excellent asthma control within the time and other resource limitations of a busy practice. This strategy directly applies evidence based best practice CPG methods evolved from managing a large number of high risk asthma patients in the Singapore National Asthma Program (SNAP).

From the utilitarian view point the most important advances in asthma management in recent years have been simplification and cost reduction associated with more effective care delivery. These are the ones described in this course.

THE ASTHMA CONTROL TEST (ACT)³⁻⁶

The main objective of asthma management is achieving disease control. This is a long term aim and needs to be evaluated regularly by doctor and patient in a collaborative effort. For asthma, we recommend checking the ACT score (Figure 1) monthly and at each clinic visit. This is a simple self administered questionnaire which has been extensively validated in the primary care setting. It establishes the current state of asthma control and predicts the risk of treatment failure in going forward. It is analogous with the blood pressure, HbA1C, lipid profile and other clinical indicators routinely used by GPs. But is entirely free of charge and can be "performed" while the patient is in the waiting room. It is equally valid if patients check and report the ACT score from home. An ACT score of ≥ 20 means good control while ACT < 20 means poor asthma control.

STEPPED THERAPY

We recommend a stepped up/down drug treatment regimen linked to the current ACT score at each clinic visit. A gradualist stepped plan is described in Figure 2. The drugs listed are those available from government polyclinics as standard options, except for fixed combinations of inhaled steroids and long acting beta agonists. And as the arrows suggest, the decision for each stepped up (or down) is undertaken at each routine clinic visit after patient review with the ACT score. An ACT score of ≥ 20 indicates good asthma control, and either maintenance or a step down in dose or drug class may be appropriate. While an ACT score of < 20 is an indicator of poor asthma control and the need to further optimize treatment with and/or stepping up dose or class of drugs. In addition to assessing the ACT score, it is also good practice to check inhaler technique and reinforce adherence to control medication at every clinic visit. This is especially needed in patients with ACT < 20 .

Referral to an asthma specialist is indicated if the ACT score remains persistently < 20 despite regular treatment with an inhaled steroid plus long acting beta agonist. No patient should be on long term oral steroid treatment for asthma without extensive evaluation by an asthma specialist.

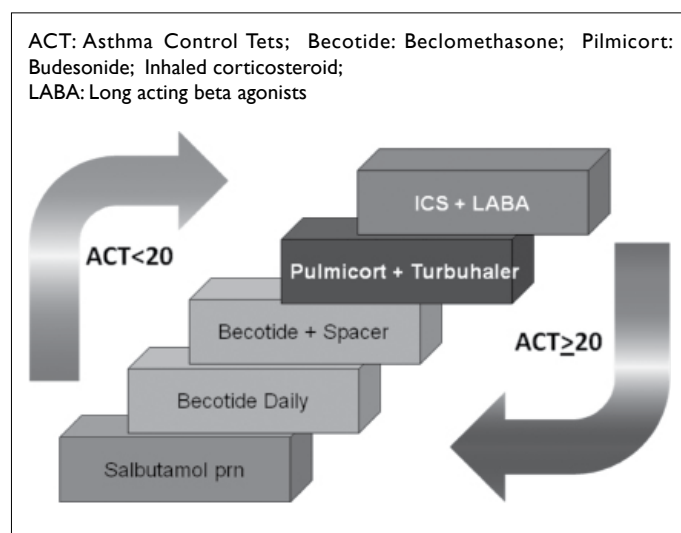
LEUKOTRIENE ANTAGONISTS

Leukotriene antagonists are a new class of oral, non-steroidal anti-asthma drugs which have gained popularity in Singapore in recent years. They are comparable to low dose inhaled steroids and do not cure asthma. But, they are convenient and appear to be free from major long term side effects.

Figure 1: The Asthma Control Test (ACT), adult version.
An ACT score of ≥ 20 means good control while ACT < 20 means poor asthma control.

Asthma Control Test™ (ACT)						Score
1. In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work, school or at home?						
Most of the time ①	Some of the time ②	A little of the time ③	None of the time ④	None of the time ⑤		
2. During the past 4 weeks, how often have you had shortness of breath?						
More than once a day ①	Once a day ②	3 to 6 times a week ③	Once or twice a week ④	Not at all ⑤		
3. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night, or earlier than usual in the morning?						
4 or more nights a week ①	2 or 3 nights a week ②	Once a week ③	Once or twice ④	Not at all ⑤		
4. During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as salbutamol)?						
3 or more times per day ①	1 or 2 times per day ②	2 or 3 times per week ③	Once a week or less ④	Not at all ⑤		
5. How would you rate your asthma control during the past 4 weeks?						
Not controlled at all ①	Poorly controlled ②	Somewhat controlled ③	Well controlled ④	Completely controlled ⑤		
Copyright 2002, QualityMetric Incorporated Asthma Control Test is a Trademark of Quality Incorporated.						
					Patient Total Score	

Figure 2: Stepped Treatment Plan



TWO ASTHMA CONTROL STRATEGIES

There are two alternative approaches to long term asthma control. The “total” asthma control approach aims at achieving and maintaining long term complete or near complete control. The benefit of this approach is shown in the GOAL study.⁷ It results in good to excellent asthma control in the majority of patients, but often requires a high dose of medication and a more gradual step down process. The alternative strategy is advocated by those who believe that variable dosing may be more appropriate for a variable disease such as asthma. They adopt a single drug and device for both maintenance and quick relief treatment in the SMART strategy.^{8,9} The success of SMART is dependent on effective self management of asthma exacerbations and described in the next section.

WRITTEN ASTHMA ACTION PLANS¹⁰

Asthma action plans for self management are strongly recommended. They should be customized for each patient, in a written form (Figure 3) and contain several discrete action points including an emergency plan. The WHO/GINA CPG recommends it with level A evidence and states that “Patients experience a one-third to two-thirds reduction in hospitalizations, emergency room visits, unscheduled visits to the doctor for asthma, missed days of work, and nocturnal wakening. It has been estimated that the implementation of a self-management program in 20 patients prevents one hospitalization, and successful completion of such a program by eight patients prevents one emergency department visit. Less intensive interventions that involve self-management education but not a written plan are less effective.”

Asthma action plans may be life saving tools and should be taught to all medium to high risk asthma patients. The pivotal step in asthma action plans may be prompt self medication with an adequate dose (30-40 mg per day taken in 1-3 divided doses) of oral steroids, i.e. the “EXTRA CAUTION” step in Figure 3. The oral steroids should be stopped after 5-7 days with not tail. The common practice of giving small and tailing doses of oral prednisolone in Singapore is strongly discouraged, it is ineffective and promotes long term steroid dependency.

The use of formoterol plus budesonide in a single device (Symbicort®) for both maintenance and relief treatment (SMART) is an important advance in simplification. It is easy to teach, learn and practice and thus, may help to promote the wider use of asthma action plans (Figure 3). There is good evidence that the SMART approach may be superior to traditional asthma action plans involving several drugs and devices.

Figure 3: Template for Written Asthma Action Plan

Template for Written Asthma Action Plan	
Symptoms	Medication
WHEN WELL - No asthma symptoms - Before exercise	Regular Controller Treatment EVERYDAY: 1. 2. 3. Reliever _____ puffs ONLY when necessary
CAUTION If you - Wake at night due to asthma symptoms - Have day time asthma symptoms more than 2 times - Use reliever more than 2 times - Have limited activity or exercise - Have flu like symptoms	STEP UP TREATMENT 1. _____ puffs _____ times/day for next 7-14 days. If Improved go back to regular treatment 2. Reliever _____ puffs 4-6 hourly x 3 days If on Symbicort® 2-4 puffs at a time Do not exceed 12 puffs/day If improved go back to regular treatment
EXTRA CAUTION If no improvement at any time with the above treatment then add ...	Prednisolone 30 mg per day x 5-7 days. (for Adults) (Children should consult Doctor first)
DANGER GET HELP WHEN - Severe shortness of breath - Reliever medicine is not helping - Can only speak in short sentences - Feeling frightened	SEE YOUR DOCTOR DO NOT WAIT CALL 995 FOR AN AMBULANCE Reliever _____ puffs at 10 minutes interval till you get to the nearest doctor or hospital Prednisolone 30 mg immediately
Affix Patient Stickers	Reinforced by: Date:
<i>Disclaimer:</i> All information contained herein is intended for your general information only and is not a substitute for medical advice for asthma. If you have specific questions, consult your doctor.	

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THE ROLE OF PEAK EXPIRATORY FLOW RATE MONITORING¹¹⁻¹⁹

One major advance in asthma action plans is the recognition that peak flow rate monitoring does not promote better control of asthma attacks, and that symptom based action plans are just as effective. This saves money and markedly simplifies the teaching and practice of action plans. Even more important, it encourages wider teaching and use in primary care and helps to promote overall asthma control in the community.

ALLERGEN AVOIDANCE & PRIMARY PREVENTIVE STRATEGIES

While there is much hope and expectation that life style modifications may prevent or cure asthma. The evidence, from numerous, high quality trials have been negative or at best “not yet”. However, avoiding potent triggers of asthma may be both life enhancing and even lifesaving. Thus, caution against excessive exposure to house dust and other aero-allergens plus drugs such as beta blockers and NSAIDS is still needed at every visit.

ASTHMA DEATHS

For a country with relatively low incidence of asthma, Singapore has a high asthma mortality. This suggests that asthma control in our community is sub-optimal. This may partly stem from the common habit of “doctor hopping” by patients with recurrent exacerbations but at irregular intervals. Not showing up for regular reviews and long term control management is a common behavior pattern. From the doctors’ view point these patients appear to have mild, intermittent episodic asthma with rare acute attacks which they can treat very effectively. When in fact, they may have poorly controlled and persistent life threatening asthma. In Singapore, the risk factors for asthma death are Malay ethnicity, cigarette smoking, recurrent acute exacerbations needing emergency treatment (e.g. wet nebulizations) and lack of compliance with control care plans. Detection of any ONE of these features should alert the GP to take extra precaution.

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LEARNING POINTS

- **The main aim of asthma management is long term control and not quick relief.**
- **The recommended indicator of asthma control is the ACT score.**
- **Good control of asthma can be achieved in the majority of patients in primary care.**
- **The highest level of drug treatment in primary care is a fixed combination of inhaled long acting beta agonists plus corticosteroid.**
- **Leukotriene antagonists are effective asthma control drugs comparable to a low dose of inhaled steroids.**
- **Peak flow rate monitoring is not needed for effective teaching and execution of asthma action plan.**
- **Short courses of oral steroids may be prescribed for self treatment plans but they must be discontinued promptly.**
- **Low doses of oral steroids should never be employed in primary care as the main control strategy.**
- **In moderate to severe persistent asthma, good long term disease control can be maintained by combined inhaled steroids plus long acting beta agonists.**
- **The use of formoterol as both quick relief and maintenance treatment in combination with budesonide in a fixed dose device is an attractive alternative for patients who opt for a variable dosing schedule.**
- **The risk factors for fatal asthma in Singapore are (1) Malay ethnicity, (2) cigarette smoking, (3) recurrent acute exacerbations needing emergency treatment (e.g. wet nebulizations) and (4) lack of compliance with control care plans.**