

Abstract

Asthma is the commonest chronic respiratory disease in childhood, affecting approximately one in every five school-going children in Singapore. The management of childhood asthma goes beyond just medications; A good understanding of the condition and the role of different medications, the appropriate identification and avoidance of triggers and allergens as well as the ability to apply self-help skills are essential to achieve the optimal outcomes in care. The influence of traditional and folklore beliefs cannot be underestimated and its role in activity limitation and the often unnecessary dietary restrictions can have a significant impact on the quality of life. Adopting a positive attitude towards its control and equipped with the appropriate knowledge and understanding will go along way to let our young ones lead a normal, healthy and unrestricted lifestyle despite asthma and allergies.

Socio-economic impact of asthma

Asthma symptoms in a child can result in absence from school, abstinence from physical activities or even the inability to participate in physical activities. In addition to this, there are the parental absence from work, monetary expenditure on medications, clinic consultations or emergency room treatments as well as anxiety, stress and perhaps even fears (intangible costs). These are all real issues that many parents with children suffering from asthma encounter and unfortunately often in silence and despair. Not infrequently, and out of desperation, parents resort to traditional and alternative therapies in hope of finding relieve and even a cure for their child's asthma. Though it may not be so exaggerated in many cases, there is a vital role that we physicians play in providing the appropriate knowledge and skills to cope with and overcome the condition.

The key to living optimally with asthma

“Take control of asthma and don't let asthma control you”

1. Be clear about the management goals
2. Good understanding of the condition and its management
3. Compliance to medications and proficiency in the technique of delivery
4. Correct perspective of triggers and allergen avoidance
5. Compliance with monitoring visits at the doctor's clinic
6. A balanced healthy lifestyle
7. Clarify any doubts, concerns or fears as they arise

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Total Asthma Control – An achievable goal for every child

The goals of asthma management include not only the control of symptoms but also the ability to lead a healthy unrestricted lifestyle. Not infrequently patients get accustomed to persistent symptoms and accept these as 'normal' and indirectly accept a lower quality of life. At each consultation, details should be sought to determine the multiple aspects of disease management and control (Table 1).

Table 1 : Scope of Review at Clinic Consultations

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- o Symptom review – in the day / night / during exercise
 - o Activity limitation – @ school / work / exercise
 - o Compliance – Reasons
 - o Delivery technique check
 - o Delivery device check
 - o Action plan review / revision
 - o Any fears, concerns, questions or doubts & expectations
 - o Monitor for control and development of concomitant allergies
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Asthma Education and Training

Basic though it may seem, patients and caregivers need to be provided knowledge and training in asthma care and management. Even the most elementary fact of what wheezing is can very often be erroneously understood in many patients. The scope of education and training as well as its pace and depth has to be tailored according to the abilities and capabilities of the parent/caregiver. Some of the important areas to be covered include:

1. What is asthma (inflammation) and signs and symptoms of asthma;
2. How to prevent attacks – the role of (and importance of) preventor medications;
3. When to use relievers – the role of reliever medications;
4. What to do when symptoms arise – the use of an asthma action plan (PEFR-based or symptom-based);
5. When to seek medical help – features of a severe attack and the emergency plan;
6. How to use the medications (+spacers) – inhaler techniques (with written reminders);
7. Knowing the triggers of asthma – Taking a correct perspective on avoidance measures;
8. Exercise and activity – prevention of exercise-induced asthma (if applicable);
9. Appreciation of the importance and safety of inhaled corticosteroids in asthma;
10. The use of a peak-expiratory flow meter (if applicable);
11. Recognizing and controlling concomitant allergies (Allergic rhinitis, conjunctivitis, eczema, food allergies, others).

REVIEW, REITERATE, REMIND @ EVERY VISIT

Differentiating exercise-induced asthma from poor physical fitness

Sports and activities are an important part of every growing child. They are not only part of a healthy active lifestyle but can be beneficial to the psychosocial development of a child. This is even more so in children with asthma who may be inadvertently restricted from activities because of asthma symptoms from poor overall disease control or false beliefs/erroneous knowledge that asthmatics need to limit activities. Poorly controlled asthma is the main limiting factor in asthmatic participating in physical activities. Exercise induced asthma (EIA) usually improves with improved baseline asthma control and can be treated with pre-exercise medications.

Limited physical activity often leads to obesity and poor physical fitness which then further results in limitation in physical abilities. Typical EIA usually does not manifest at the start of the exercise routine and often begins after the termination of activity (as adrenaline released during exercise has a bronchodilatory effect) (Fig 1). This phenomenon can best be confirmed by an exercise challenge test.

The choice of exercise can also help in alleviating the EIA as different exercises have varying degrees of asthmagenicity (Fig 2).

A comprehensive and holistic approach to asthma and allergy care

Understanding the multi-faceted management approach of asthma, education about asthma and self-management of asthma are now key recommendations of asthma management guidelines. A Cochrane systematic review found that education programmes that offer information about asthma and self-management skills reduced hospitalisation rates, ER visits for asthma, unscheduled doctors visits, days lost from work, episodes of nocturnal asthma, indirect costs and an

Fig 1. Exercise-Induced Bronchospasm

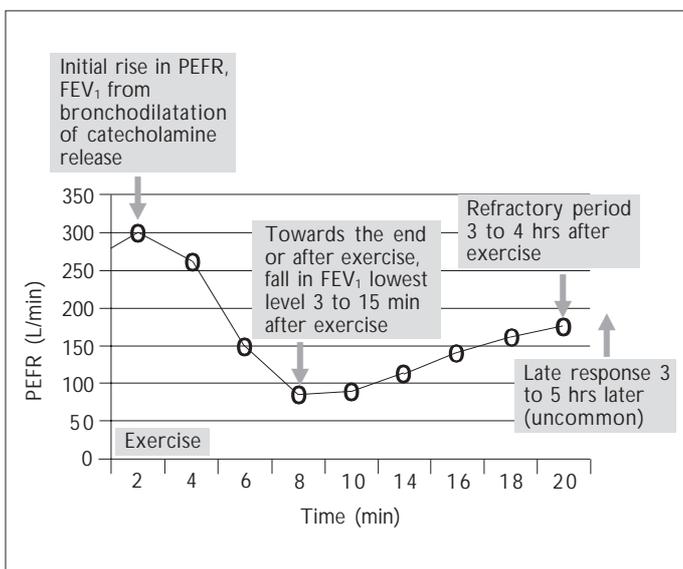
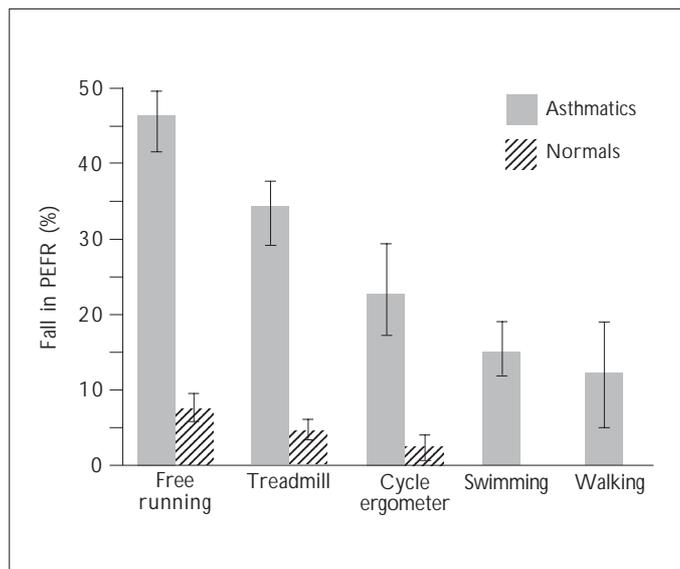


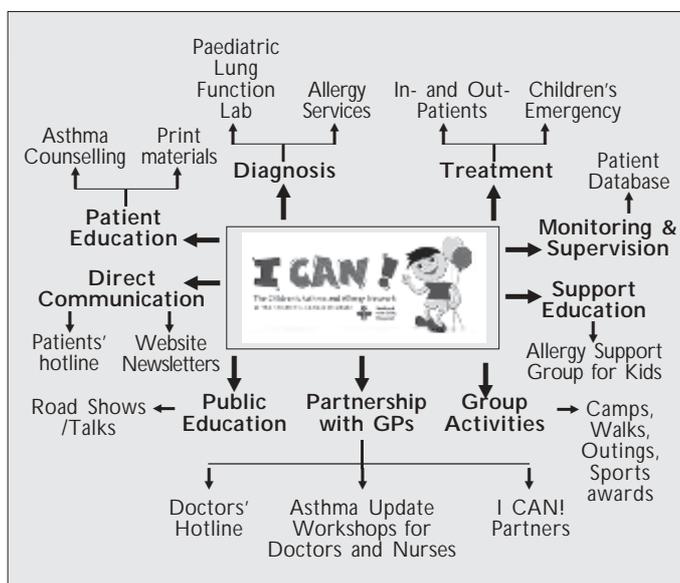
Fig 2. Asthmagenicity of various exercises



Source: Godfrey S, et al. J Allergy Clin Immunol 1973;52:199

improvement in quality of life. The effects were large enough to be of both clinical and statistical significance. In children it is also important not to separate the concomitant allergies from asthma management. Data shows that control of these allergies can have a significant impact on asthma control and vice versa (the concept of two- airways one- disease).

Hence, it can be seen that the optimal approach would be from a comprehensive programme managing asthma and allergies incorporating education, self-help skills as well as public education and doctor education together with an emphasis on achieving a healthy unrestricted active lifestyle in children. Such a programme exists in Singapore and is called the "I CAN !" programme (which stands for the Children's Asthma and Allergy network) and it is based at the National University Hospital's Children's Medical Institute.



Overview of the "I CAN!" programme

1. Global Strategy for Asthma Management and Prevention, National Institutes of Health, NHLBI (Revised 2002) available on www.ginasthma.com
2. Halterman JS, Yoos HL, Conn KM, Callahan PM, Montes G, Neely TL, Szilagyi PG. The impact of childhood asthma on parental quality of life. *J Asthma*. 2004 Sep;41(6):645-53.
3. Williams S, Sehgal M, Falter K, Dennis R, Jones D, Boudreaux J, Homa D, Raskin-Hood C, Brown C, Griffith M, Redd S. Effect of asthma on the quality of life among children and their caregivers in the Atlanta Empowerment Zone. *J Urban Health*. 2000 Jun;77(2):268-79.
4. Gibson PG, Ram FS, Powell H. Asthma education. *Respir Med*. 2003 Sep;97(9):1036-44.
5. D'Souza WJ, Te Karu H, Fox C, Harper M, Gemmell T, Ngatuere M, Wickens K, Crane J, Pearce N, Beasley R. Long-term reduction in asthma morbidity following an asthma self-management programme. *Eur Respir J*. 1998 Mar;11(3):611-6.
6. Ignacio-Garcia JM, Pinto-Tenorio M, Chocron-Giraldez MJ, Cabello-Rueda F, Lopez-Cozar Gil AI, Ignacio-Garcia JM, de Ramon-Garrido E. Benefits at 3 yrs of an asthma education programme coupled with regular reinforcement. *Eur Respir J*. 2002 Nov;20(5):1095-101.
7. The Children's Asthma and Allergy Network is available at www.ican.com.sg

LEARNING POINTS

- o The management of childhood asthma goes beyond just medications.
 - o A good understanding of the condition, role of different medications identification and avoidance of triggers and allergens is essential for the carer.
 - o The teaching of self-help skills is essential.
 - o Teaching a positive attitude, knowledge and understanding of asthma helps our children lead a normal, healthy and unrestricted lifestyle despite asthma and allergens. "I Can" is one such programme.
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