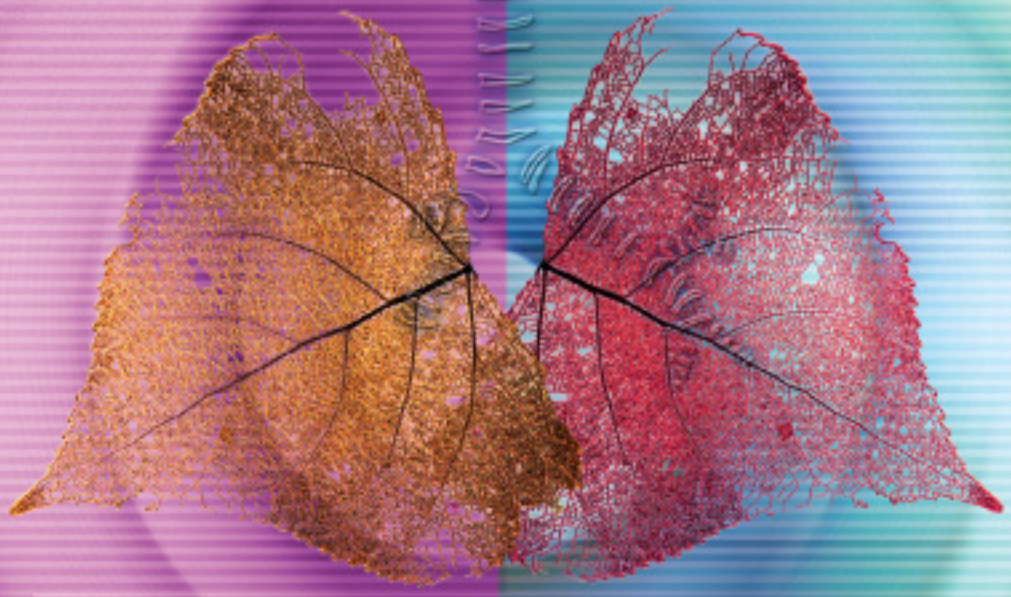
SOUVENIR PROGRAMME & ABSTRACT BOOK

5th ANNUAL CONGRESS



Recent Advances in Airway Disease

9 - 11 AUGUST 2002

Hotel Istana, Kuala Lumpur

Malaysian Thoracic Society

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MESSAGE

It is my great pleasure on behalf of the Organising Committee to welcome you all to this meeting, the 5th Annual Congress of the Malaysian Thoracic Society. The congress this year carries the theme "Recent Advances in Airway Disease".

Like in previous congresses organised by the society, both adult and paediatric respiratory topics will be covered. The Organising Committee has selected a distinguished faculty of international and local speakers who are authorities in the field of Respiratory Medicine. Apart from asthma and COPD, the speakers will cover recent advances in the management of respiratory tract infections and tuberculosis. In addition, there is a pre-congress workshop on sleep apnoea. The poster discussion and oral presentation sessions will provide a good opportunity for our local researchers to share their research findings. A one-hour session has been allocated for the presentation of interesting clinical cases with important take home messages.

The Organising Committee and the society are very grateful to the various pharmaceutical and medical equipment companies for their generous support of this congress and I would like to invite all of you to visit the trade exhibition booths and hospitality suites.

I wish you a fruitful and successful meeting.

Prof Liam Chong Kin
President, Malaysian Thoracic Society &
Organising Chairman, 5th Annual Congress

PROGRAMME SUMMARY

Time	9 August 2002, Friday	10 August 2002, Saturday	11 August 2002, Sunday
0800 – 0900	REGISTRATION	MEET-THE-EXPERT SESSIONS	MEET-THE-EXPERT SESSIONS
	OPENING REMARKS		
	The spectrum of sleep disordered breathing		
0900 – 1000	Treatment of obstructive sleep apnea	SYMPOSIUM 1	SYMPOSIUM 3
1000 – 1100	COFFEE		
	Occupational and medico-legal aspects of sleep disorders and non-respiratory sleep disorders	COFFEE	
1100 – 1200	Sleep disordered breathing in children	Poster Viewing	SYMPOSIUM 4A & 4B
		Free Papers – Oral Presentations	
1200 – 1300	Discussion / Questions & Answers		CLOSING REMARKS
1300 – 1400	LUNCH FRIDAY PRAYERS	LUNCH SYMPOSIUM Merck Sharp & Dohme	LUNCH SYMPOSIUM Bristol-Myers Squibb
1400 – 1500		SYMPOSIUM 2A & 2B	
	Welcome address by President of MTS		
1500 – 1600	PLENARY LECTURE I The role of pulmonary rehabilitation in COPD and other diseases		
	PLENARY LECTURE II The importance of treating asthma as a systemic and small airways disease		
1600 – 1700	TEA & POSTER VIEWING	TEA	
1700 – 1800	Annual General Meeting of the Malaysian Thoracic Society	Concurrent Case Presentations (Adult and Paediatric)	
1800 – 1900			
1900 – 2000		SATELLITE SYMPOSIUM Boehringer Ingelheim / Pfizer	
2000 – 2100	SATELLITE SYMPOSIUM & DINNER GlaxoSmithKline		
2100 – 2200		CONGRESS DINNER	
2200 – 2230			

DAILY PROGRAMME

9 August 2002 Friday

0800 – 1700 **REGISTRATION**

PRE-CONGRESS WORKSHOP ON SLEEP MEDICINE

Chairperson: Assoc Prof Roslan Harun — MAHKOTA 2

0830 – 0845 >> ***Opening Remarks***

0845 – 0915 *The spectrum of sleep disordered breathing* (page 10)
Prof Liam Chong Kin (Malaysia)

0915 – 1000 *Treatment of obstructive sleep apnea* (page 11)
Prof Ron Grunstein (Australia)

1000 – 1020 COFFEE

Chairperson: Prof Liam Chong Kin — MAHKOTA 2

1020 – 1120 *Occupational and medico-legal aspects of sleep disorders and non-respiratory sleep disorders* (page 12)
Prof Ron Grunstein (Australia)

1120 – 1200 *Sleep disordered breathing in children* (page 13)
Dr Karen Waters (Australia)

1200 – 1230 *Discussion / Questions & Answers*

1230 – 1445 LUNCH / FRIDAY PRAYERS — MAHKOTA 1

1445 – 1500 ***Welcome address by Prof Liam Chong Kin, President, Malaysian Thoracic Society***

Chairperson: Prof Liam Chong Kin — MAHKOTA 2

1500 – 1545 >> **PLENARY LECTURE I**
The role of pulmonary rehabilitation in COPD and other diseases (page 14)
Prof Paul Jones (United Kingdom)

1545 – 1630 >> **PLENARY LECTURE II**
The importance of treating asthma as a systemic and small airways disease (page 15)
Prof Leif Bjermer (Norway)

1630 – 1715 TEA

1715 – 1845 *Annual General Meeting of the Malaysian Thoracic Society* — BAIDURI

1945 – 2230 >> **SATELLITE SYMPOSIUM & DINNER** *GlaxoSmithKline*

Chairperson: Prof Liam Chong Kin — MAHKOTA 1

Risk factors and cost associated with asthma exacerbation
Assoc Prof Roslina Manap (Malaysia)

Control through synergy
Dr Samson Lim (Australia)

10 August 2002 Saturday

0800 – 0845 **MEET-THE-EXPERT SESSIONS**

Chairperson: Assoc Prof Richard Loh — **MAHKOTA 3**

Asthma and rhinitis – Role for leukotrienes and anti-leukotriene therapy (page 16)
Prof Leif Bjermer (Norway)

Chairperson: Assoc Prof Catherine Wong — **MAHKOTA 2**

Pulmonary function testing in the assessment of pulmonary disability
Prof Paul Jones (United Kingdom)

SYMPOSIUM 1

Chairperson: Assoc Prof Jessie A de Bruyne — **MAHKOTA 2**

0845 – 0930 Current management strategies in asthma and difficult asthma (page 17)
Dr Samson Lim (Australia)

0930 – 1015 The challenges in asthma management in Malaysia (page 18)
Assoc Prof Richard Loh (Malaysia)

1015 – 1030 Discussion

1030 – 1100 **COFFEE**

1100 – 1130 Poster Viewing (page 37 – 44)

Chairperson: Assoc Prof Roslina Manap — **MAHKOTA 2**

1130 – 1230 Free Papers – Oral Presentations (page 32 – 36)

1230 – 1400 **LUNCH SYMPOSIUM** Merck Sharp & Dohme

Chairperson: Assoc Prof Roslina Manap — **MAHKOTA 1**

Airway remodeling in asthma – The role of leukotrienes (page 19)
Prof Leif Bjermer (Norway)

SYMPOSIUM 2A

Chairperson: Dr Aziah Mahayiddin — **MAHKOTA 2**

1400 – 1445 New treatment modalities and updates in COPD (page 20)
Prof Paul Jones (United Kingdom)

1445 – 1530 Challenges in COPD management in Malaysia (page 21)
Dr Zainudin Md Zin (Malaysia)

1530 – 1615 Clinical Practice Guidelines (CPG) – Tuberculosis (page 22)
Dr I Kuppusamy (Malaysia)

SYMPOSIUM 2B

Chairperson: Dr Norzila Mohamed Zainudin — **MAHKOTA 3**

1400 – 1445 Interactions between childhood lung diseases and sleep (page 23)
Dr Karen Waters (Australia)

1445 – 1530 New modalities for treating status asthmaticus in children (page 24)
Assoc Prof Tang Swee Fong (Malaysia)

1530 – 1615 New concepts in sudden infant death syndrome (SIDS) (page 25)
Dr Karen Waters (Australia)

1615 – 1645 **TEA**

1645 – 1745 Concurrent Case Presentations (Adult and Paediatric) — **MAHKOTA 2**

1915 – 2015 **SATELLITE SYMPOSIUM** Boehringer Ingelheim / Pfizer

Chairperson: Prof Liam Chong Kin — **MAHKOTA 2**

New insights in health status and the impact of treatment in COPD
Prof Paul Jones (United Kingdom)

2030 – 2230 **CONGRESS DINNER** — **MAHKOTA 1**

11 August 2002 Sunday

0800 – 0900 **MEET-THE-EXPERT SESSIONS**

Chairperson: Dato' Dr Abd Razak Muttalif — **MAHKOTA 2**

Ventilator Associated Pneumonia
Assoc Prof Lee Kang Hoe (Singapore)

Chairperson: Dr Norrasidah Abdul Wahab — **MAHKOTA 3**

Home Ventilation
Dr Karen Waters (Australia)

SYMPOSIUM 3

Chairperson: Dr Zainudin Md Zin — **MAHKOTA 2**

0900 – 0945 *Trends in antibiotic resistance in Malaysia* (page 26)
Prof N Parasakthi (Malaysia)

0945 – 1030 *Community acquired pneumonia: Rationales for antibiotic treatment* (page 27)
Prof Kenneth Tsang (Hong Kong)

1030 – 1100 **COFFEE**

SYMPOSIUM 4A

Chairperson: Dr Lim Kim Hatt — **MAHKOTA 3**

1100 – 1145 *Nosocomial pneumonia* (page 28)
Assoc Prof Lee Kang Hoe (Singapore)

1145 – 1215 *Bronchiectasis and diffuse panbronchiolitis* (page 29)
Prof Kenneth Tsang (Hong Kong)

SYMPOSIUM 4B

Chairperson: Assoc Prof Patrick Chan — **MAHKOTA 2**

1100 – 1145 *Managing acute respiratory infections in children* (page 30)
Dr Azizi Omar (Malaysia)

1145 – 1230 *Issues in the management of pulmonary tuberculosis in children* (page 31)
Dr Norzila Mohamed Zainudin (Malaysia)

1230 – 1245 **Closing Remarks**

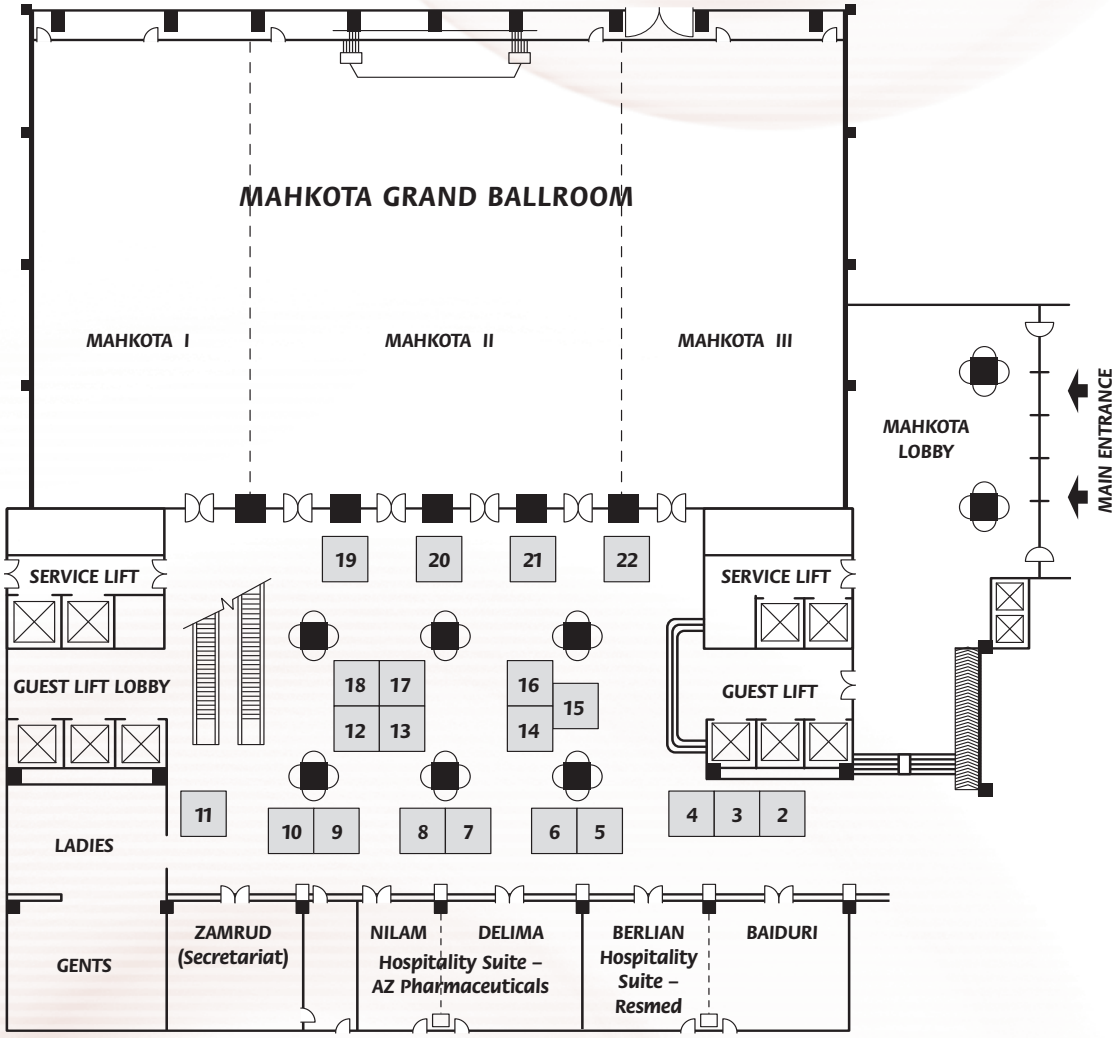
1245 – 1400 **LUNCH SYMPOSIUM** *Bristol-Myers Squibb*

Chairperson: Assoc Prof Catherine Wong — **MAHKOTA 1**

The role of fluoroquinolones in the treatment of respiratory infections
Prof Victor K E Lim (Malaysia)

Abstracts of Posters (page 32 – 44)

FLOOR PLAN & TRADE EXHIBITION



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THE SPECTRUM OF SLEEP DISORDERED BREATHING

Liam Chong Kin
Department of Medicine, University Malaya Medical Centre, Kuala Lumpur, Malaysia

Sleep is associated with physiological alterations in the control and mechanics of breathing. Obstructed breathing during sleep may be viewed as a continuum - from pure snoring to severe obstructive sleep apnoea with daytime respiratory failure and cor pulmonale. The most benign extremity of this continuum is represented by pure snoring. A step further is the occurrence of occasional complete pharyngeal collapse which causes obstructive apnoea. Hypopnoea is a reduction in airflow. Three types of apnoeas or hypopnoeas are recognised. While obstructive apnoea or hypopnoea is the complete cessation or reduction in airflow despite persistent inspiratory effort, central apnoea or hypopnoea is the absence or reduction in airflow due to an absence or reduction in respiratory effort. Mixed apnoea or hypopnoea starts as central central apnoea or hypopnoea followed by obstructive apnoea or hypopnoea. In practice, mixed apnoeas are considered as obstructive and the majority of cases of sleep apnoea syndrome are obstructive. A respiratory effort-related arousal (RERA) is a sequence of breaths characterised by increasing respiratory effort leading to an arousal from sleep but which does not meet criteria for an apnoea or hypopnoea. The obstructive sleep apnoea-hypopnoea syndrome (OSAHS) is the occurrence of repetitive obstructed breathing events during sleep (any combination of apnoeas, hypopnoeas or RERAs) associated with daytime symptoms, particularly excessive somnolence.

Habitual snoring occurs in up to 25% of men and 20% of women in the normal adult population. The incidence of OSA in the general population is between 2% and 4%. The demographics and possibly the pathogenesis of OSA may be different for Asians in comparison with whites.

TREATMENT OF OBSTRUCTIVE SLEEP APNEA

Ron Grunstein
Sleep Research Group, Woolcock Institute of Medical Research, Royal Prince Alfred Hospital and University of Sydney, Australia

Increased recognition of obstructive sleep apnea (OSA) has resulted in a wider spectrum of patients presenting for investigation and treatment. Over the past 20 years, continuous positive airway pressure (CPAP) therapy has become the gold standard treatment for patients with moderate to severe OSA. Current evidence suggests that, once prescribed, about 60 per cent of patients use CPAP regularly. Compliance is much higher in patients with greater disease severity, particularly those with pathological excessive daytime sleepiness. There is strong evidence of the efficacy of CPAP from a number of randomised controlled trials. Persisting sleepiness, despite CPAP, is not an uncommon problem and early trials suggest the wakefulness promoter, modafinil, may be helpful for this problem.

Other forms of treatment include mandibular advancement splints (MAS) and uvulopalatopharyngoplasty (UPPP). A consensus view on the efficacy of MAS is complicated by the many different types of devices, lack of controlled data and lack of long term follow up. Regarding surgery, in Australia, rates of UPPP have decreased significantly over the past 5 years. There is little evidence for the efficacy of surgery in OSA.

However, there is controversy over the appropriate management of patients with asymptomatic moderate or severe sleep apnea and patients with mild sleep apnea. Recent data, suggests that even mild degrees of OSA are associated with adverse cardiovascular outcomes. However, CPAP compliance is unlikely to be satisfactory in these patients. Such patients are likely to be future targets of either pharmacological therapy directed at OSA and recent data in this area will be reviewed. Alternatively, such patients may be selected for more aggressive preventive therapy for atherosclerosis.

OCCUPATIONAL AND MEDICO-LEGAL ASPECTS OF SLEEP DISORDERS AND NON-RESPIRATORY SLEEP DISORDERS

Ron Grunstein

Sleep Research Group, Woolcock Institute of Medical Research, Royal Prince Alfred Hospital and University of Sydney, Australia

There is increasing awareness of the importance of sleep loss and sleep disorders in occupational medicine. Employers who continue to allow workers to work excessive hours place themselves at risk of litigation by members of the public affected by actions of sleepy employees. Many employees are instructed by their employers to work long hours despite legal restrictions on shift length. As well, there are larger public health issues with evidence of many major catastrophes being caused by shift workers exposed to sleep loss. The Exxon Valdez accident in Alaska is one example of an accident due to human error secondary to sleep loss. In addition, the physician has a responsibility in ensuring that patients who are at risk of falling asleep at work, are advised to cease dangerous activities until treated. Failure to warn such patients may expose the physician to medicolegal consequences.

Non-respiratory sleep disorders are very common. Chronic insomnia affects up to 6 per cent of the adult population and is even more common in the elderly. Other disorders include sleep movement disorders such as sleepwalking, restless legs syndrome and REM behaviour disorder. New pharmacological approaches are available for all these conditions. Finally, the discovery that narcolepsy is associated with a degeneration of orexin neurons in the posterior hypothalamus has opened up the possibility of new novel pharmacological agents preventing sleepiness or promoting sleeping in patients with insomnia.

SLEEP DISORDERED BREATHING IN CHILDREN

Karen Waters
Children's Hospital, Westmead, New South Wales, Australia

This talk examines the current evaluation and treatment standards for OSA and other sleep-associated disorders in children. The pathology and pathophysiology and the underlying sleep-related upper-airway obstruction in children will be explored, followed by a description of current standards for evaluating severity and liklihood of childhood sleep apnoea.

Proper evaluation of sleep-disordered breathing in children requires that it be considered during normal sleep times and within their unique developmental framework. Clinical demands mean that screening studies also need to be fully evaluated.

Obstructive sleep apnoea (OSA) underlies the presentation of approximately 60% of children to paediatric sleep units. The expression of obstructive sleep apnoea in children differs markedly from that of the adult syndrome, and understanding this process requires appropriate, detailed clinical and investigative procedures. There have been recent, substantial improvements in understanding the complications of childhood OSA. Early reports focused on such severe end-points as cardiac failure and growth failure. More recent evidence supports the early occurrence of neurobehavioural and metabolic complications.

The presentation and assessment of other disorders presenting to a paediatric sleep unit will also be discussed. These include chronic lung diseases (detailed in the second talk), infant apnea, and congenital or acquired central hypoventilation syndromes.

Finally, treatment issues will be discussed. For childhood OSA this routinely means adenoidectomy and/or tonsillectomy. Approximately 80% of children are adequately treated with this regime, using current assessment strategies. The authors' experience has shown that nasal mask CPAP has wide application in the paediatric population and can be a practical and effective means of intervention.

THE ROLE OF PULMONARY REHABILITATION IN COPD AND OTHER DISEASES

Paul Jones
Division of Physiological Medicine, St George's Hospital, Medical School, London, United Kingdom

COPD is a multi-system disease with primary effect in the lungs and multiple secondary effects in other organs, so pulmonary rehabilitation requires a multi-disciplinary approach that includes education, smoking cessation, life style change and training in inhaler use. However, the main stay of rehabilitation is physical training. Leg fatigue has been shown to be as important in limiting exercise capacity as breathlessness. Muscle wasting is a characteristic feature of COPD and an important cause of restricted physical activity. It results not only from disuse atrophy induced by breathlessness, fatigue and reduced expectations of exercise capacity, but also from factors such as inflammatory cytokines that cause loss of muscle mass.

In COPD and other chronic lung conditions, improvements in muscle strength and endurance can result from a well organised programme. The mechanisms responsible are multifactorial. Physiological and cytochemical changes in the muscles that are seen during physical training in healthy subjects can also occur in COPD, if the training is sufficiently intense. However other mechanisms may also operate. These include motivation, changes in exercise habit and 'desensitization' of the sense of breathlessness.

Along with improved exercise capacity, there is clear improvement in health status or quality of life, particularly in terms of the patients sense of 'mastery' or control over their disease. The level of improvement exceeds the threshold for clinical significance and the size of the effect is often greater than that seen with pharmacological therapies.

Benefits of rehabilitation may wear off over time. This may occur particularly after an acute exacerbation and there is considerable interest in the development of 'top-up' programmes. The chief problem is in compliance. The drop-out rate is quite high, but the majority of patients will complete a 6-week programme, with the expectation of a good level of health gain. Most evidence of the efficacy of rehabilitation comes from COPD studies, but benefit in asthma and interstitial lung disease has been shown.

THE IMPORTANCE OF TREATING ASTHMA AS A SYSTEMIC AND SMALL AIRWAYS DISEASE

Leif Bjermer
Department of Lung Medicine and Allergology, University Hospital of Lund, Lund, Norway

The traditional view is that asthma is an inflammatory disorder mainly affecting the large and middle-size airways and these central airways accounts for approximately 80% of all airway resistance. However, recent findings indicate that also the smaller airways (diameter < 2mm) play an important role in all stages of the asthmatic disease. Since small airways account for only about 10 % of airway resistance, measurements like PEF and FEV1s poorly reflects changes in the small airways. The poor or non-existing correlation between FEV1, PEF and symptoms and even Quality of life parameters indicate other clinical parameters in addition to the traditional lung function variables should be considered when the degree of disease control is evaluated.

By the use of flexible bronchoscopy and flow resistance measurements through a balloon-tipped catheter, Wagner et al showed that even mild asthmatics with normal lung function had increased peripheral resistance compared to healthy controls. Obstruction of the small airways also leads to airway occlusion and trapped airways as being demonstrated both with scintigraphy and high resolution CT-scanning technique. The involvement of small airways in asthma was also early demonstrated by Hamid in post-mortem cases and later by M. Kraft and co-workers by the use of transbronchial lung biopsies on patients with and without nocturnal asthma. By performing bronchoscopy on asthmatic patients at 4 pm and then at 4 am in the morning it was shown that those patients with nocturnal asthma had a pronounced increase of eosinophils in the peripheral tissue compared to those without nocturnal asthma. This increase of eosinophils was associated with an increase of CD4 positive lymphocytes. Moreover, the lymphocyte increase also closely correlated with decrease in lung function at night.

In addition to nocturnal asthma, other suggested clinical correlates for small airway involvement, are asthma exacerbations and exercise induced bronchoconstriction.

The involvement of small airways have therapeutical implications. The occurrence of air-trapping and airways closure may prevent inhaled medication from reaching the peripheral airways. Moreover, pharmacokinetic studies have shown that drug concentration in the peripheral airways is considerable less (5 - 10%) than what is measured in the central airways, after administration of inhaled corticosteroid in high dose. Finally, morphometry of the central compared to peripheral airways have shown that the inflammation in the peripheral airways are situated mainly in the tissue outside the smooth muscle layer (outer layer) while inflammation in the larger airways are concentrated closer to the airway lumen. Thus inhaled drug concentration is not only lower in the peripheral airways, the drug also needs to penetrate deeper into the tissue in order to reach the inflammatory foci.

Anti-leukotrienes represent a new approach to asthma management. Though cysteinyl-leukotrienes only are produced during disease, blocking of these mediators do not interfere with normal physiological function. Thus anti-leukotrienes can safely be given systemically knowing that they are targeting only disease specific mediators. Recent studies have displayed Cys-LT1 receptors in high concentration in the small airways and it is a reasonable assumption that leukotrienes play an important role in treating inflammation of the small airways. Clinical data showing effect by LTRA on nocturnal asthma, preventing exacerbations and protecting from exercise induced bronchoconstriction clearly demonstrate that anti-leukotriene therapy is an important treatment option in modern asthma management.

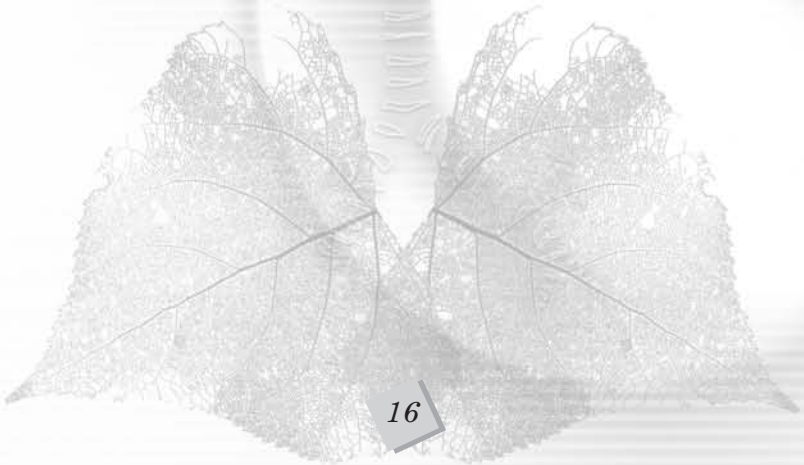
ASTHMA AND RHINITIS – ROLE FOR LEUKOTRIENES AND ANTI-LEUKOTRIENE THERAPY

Leif Bjermer
Department of Lung Medicine and Allergology, University Hospital of Lund, Lund, Norway

Asthma and rhinitis are conditions which frequently co-exist. More than 70% of those with clinical asthma also have concomitant rhinitis and the prevalence increases with more severe disease.

In subjects only reporting rhinitis symptoms without asthma, a prevalence of bronchial hyperresponsiveness (BHR) to methacholine can be seen in approximately 45% of the subjects indicating a link between the upper and the lower airways even in those patients who are not yet clinically diagnosed with asthma. Indeed, rhinitis is a strong risk factor for later asthma development. In a long-term longitudinal study, patients with allergic rhinitis were found to have a 3-fold increased risk of developing asthma compared to normal controls. In order to control the asthmatic disease , it is important to also treat the concomitant rhinitis. Pathophysiological studies with bronchial biopsies and induced sputum studies have indicated that inflammation occurs in the lower airways in patients with allergic rhinitis even in the absence of clinical asthma symptoms. Further, allergen challenge in the nose causes inflammation in the lower airways while increased inflammation in the nose is seen when subjects are challenged with allergens in the lower airways.

The antiasthmatic effect of anti-leukotrienes are well established while their role in allergic rhinitis is now only beginning to emerge. Allergen challenge of the nose produces an increase in cysteinyl leukotrienes in nasal secretion and Cysteinyl LT1 receptor expression is detected in the nasal mucosa. Interestingly, while Cys-LT1 receptor expression is found in the lungs, concentrated to basal parts of the epithelium and to the smooth muscles, Cys-LT_1-receptor expression in the nose is concentrated to the vessels. Provocation studies with intranasal LTD4 have shown that the effect mediated by Cys-LTs in the nose is mainly related to vascular dilatation, congestion and rhinorrhea. This role for cysLTs in AR is further advanced by a recent study demonstrating the effect of montelukast on daytime nasal symptoms, which included not only congestion and rhinorrhea, but also measures of nasal itching and sneezing. Improvements were also associated with reduction in blood eosinophils counts suggesting effect on underlying allergic inflammation. The proven effects of antileukotrienes in asthma taken together with the emerging evidence for this class in rhinitis suggests that antileukotrienes may be of particular utility for patients with asthma and concomitant rhinitis.



CURRENT MANAGEMENT STRATEGIES IN ASTHMA AND DIFFICULT ASTHMA

Samson Lim

Department of Respiratory Medicine, Concord General Repatriation Hospital, New South Wales, Australia

Asthma has now become the commonest chronic disease of industrialised countries and along with other atopic disease, is increasing worldwide. Asthma affects 10% of children and 5% of adults. It consumes 1 - 2% of healthcare spending and mortality is not declining in most countries despite the availability of effective treatments. Asthma is a chronic inflammatory disease of the airways, characterised by a specific pattern of inflammation with activated eosinophils, mast cells, macrophages and lymphocytes directed to the generation of IgE. There has been considerable progress in the understanding of the cellular and molecular mechanisms that underlie asthma. This should lead to the more logical use of existing drugs and aid the development of new drugs by identifying targets. However, it has been difficult to develop new treatments, partly because existing treatments have been proven to be safe and effective. The only new classes of anti-asthma therapy introduced to the clinical environment in the last 25 years are anti-leukotrienes, and more recently IgE blocking antibodies.

Current asthma treatment can be classified into "relievers", which relax airway smooth muscle and give rapid symptom relief, and "controllers" which inhibit the underlying inflammatory process. Guidelines for the treatment of asthma recommend a stepwise approach with increasing treatment, as asthma is more severe. Inhaled steroids are the single most important advance in asthma therapy during the last 10 years. They are now used as first line therapy in chronic asthma and are effective in asthma of all types. Side effects are not usually a problem at the doses of inhaled steroids that most patients require. Inhaled steroids should be started at a relatively high dose then back-titrated progressively once optimal control is achieved. The major problem with inhaled steroids has been systemic side effects, particularly in children, and when used at high doses continuously. Some patients are only controlled on high dose of inhaled steroids or oral steroids: these patients with steroid dependence or relative steroid resistance are a management problem and alternative treatments are needed. These patients comprise 5 - 10% of asthmatics; yet consume more than 50% of resources. Poor compliance with maintenance treatment is a major problem in some patients, and this may be more a problem with inhaled therapies.

Inhaled β_2 agonists are extremely effective in relieving asthma symptoms, and are used as required for symptom control, but should not be used as a regular treatment. Long acting β_2 agonists (salmeterol and formoterol) have been an advance in therapy and are used as additional bronchodilators in patients who remain symptomatic on inhaled steroids. When added to a low dose of inhaled steroids, they may give better asthma control than increasing the dose of steroid. Indeed long acting β_2 agonists have now been combined with inhaled steroids in a single inhaler, and there is evidence combination therapy may be more effective than the treatments given concurrently.

Difficult-to-manage asthma refers to disease that is highly unpredictable in its occurrence and severity, places the patient at risk for fatal attacks, compromises the patient's daily functioning, and is so severe that side effects of daily therapy affect the patient's health and ability to function normally.

Among all patients with asthma, those with difficult-to-manage disease have the highest risk for death, the highest rates of hospitalization and resource utilization, and the highest absenteeism from school and work. Management of difficult cases of asthma is challenging. Accurate and careful assessment is essential to establish or confirm the diagnosis. Treatment and monitoring of patients must be carefully planned. Patients and their families should be educated about the disease and its treatment, and patients should be instructed carefully in self-management. Educational materials and an asthma action plan outlining the management program should be given to each patient.

Frequent monitoring for patient compliance and therapeutic efficacy is essential, and pharmacotherapy usually consists of several agents, with side effects common. Same-day access for appointments should be available to patients when exacerbations occur or management problems arise, and subspecialty referral is helpful when the diagnosis is in question.

THE CHALLENGES IN ASTHMA MANAGEMENT IN MALAYSIA

Richard Loh Li Cher
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The changing trend in our understanding of asthma makes it important that we apply this knowledge to improve the care of our asthmatic patients. This is especially true in the wake of increasing asthma prevalence in many parts of the world including Malaysia. The coming together of experts at international level to produce consensus on asthma management has made it easy for us to appreciate the direction at which the international community seeks to steer. In Malaysia, the dissemination of updated clinical evidence to the medical community is perhaps not a problem. What more important is whether they can impact on prescribing practices or policies among healthcare professionals who face many legitimate issues such as drug cost and patient affordability. Another important area in which all Malaysian healthcare professionals can work towards is patient education. Many patients or parents of children with asthma are reluctant to follow doctor's explicit instructions due to misconceptions and fears. For instance, inhaled therapy is indicated for severe disease alone and that regular use can be 'addictive', or that oral table is preferred to inhaled therapy. In private healthcare in Malaysia, drug costs can be a huge factor in deciding treatment options and compliance. Like treating hypertension, patients rationalize on whether regular 'controller' medication is needed as soon as symptoms subside. Concern with corticosteroids is universal, and time and effort is necessary to alleviate fears and give reassurance. Ensuring appropriate delivery device for individual patients is fundamental but often neglected. Other key areas of patient education include allergen avoidance and recognition of symptoms indicative of exacerbations. With strong support from the Ministry of Health and other professional bodies such as the Malaysian Thoracic Society, and not least, pharmaceutical firms who are keen to market their products, most our challenge is perhaps over. What remains is our own enthusiasm to see our patients receiving the best evidence-based care and as a result, living life to their fullest.

AIRWAY REMODELING IN ASTHMA – THE ROLE OF LEUKOTRIENES

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Uncontrolled airway inflammation in asthma often leads to a wound-healing response with chronic changes in the airways called airway remodelling. Characteristic features are thickening of the reticuloendothelial basement membrane, subepithelial fibrosis, neovascularisation and smooth muscle cell hyperplasia. The clinical outcome is often recorded as decline in lung unction and development of chronic airflow obstruction and persistent symptomatic disease with bronchial hyperresponsiveness. However, not all patients develop chronic airflow obstruction despite active longstanding disease. This highlights the possibility that airway remodelling is not a consequence from airway inflammation alone, but rather a consequence from other specific pathophysiological components.

Until recently it was believed that early introduction of inhaled corticosteroid therapy could prevent airway remodelling and development of chronic airflow obstruction. However, a large prospective study in children failed to show any protective effect from Budesonide treatment on lung function decline. One explanation could be that corticosteroids do not influence all parts of the inflammation responsible for remodelling of the airways. The respiratory epithelium and mast cells seems to play an important role in remodelling and both of these components are associated with inflammatory mechanisms less sensitive to corticosteroid therapy. In chronic asthma, mast cells seem to be a major source for leukotriene production which are key mediators of asthma. Both the airway epithelium and mast cells are associated with leukotriene production and response, This has led to the hypothesis that anti-leukotriene therapy also could interfere with the process of airway remodelling. In a recent animal experimental model, using Ovalbumine sensitised mice, Montelukast significantly suppressed eosinophilic inflammation and suppressed the occurrence of mucus cell hyperplasia, airway fibrosis and thickening of he smooth muscle layer which are all markers of airway remodelling. Whether early intervention with LTRA therapy, possibly combined with GCS, can prevent airway remodelling from occurring is a question that needs to be addressed in future clinical trials.

NEW TREATMENT MODALITIES AND UPDATES IN COPD

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COPD has long been regarded, incorrectly, as being untreatable. It is chronic and incurable but there is abundant evidence that newer therapies have a sustained and worthwhile benefit. Until recently treatment was confined to short acting bronchodilators that had to be taken four times daily to achieve sustained bronchodilatation, and even then the effect was not maintained overnight. Adding to the sense of untreatability was the use of the FEV-1 both to define COPD as a poorly reversible disease and to measure of treatment effects.

These views have changed. FEV1 is now known to relate only weakly to breathlessness, exercise performance and health status relate. Static and dynamic hyperinflation are more important physiological determinants of exercise capacity and breathlessness. Sleep disturbance is recognised to be important, as are exacerbations. Long acting beta-agonists produce greater benefits in all of these areas than regular use of short acting drugs, even though the changes in FEV1 are only modest. These agents now have an established role, to be used if 'rescue' short acting beta-agonist produces inadequate control. Tiotropium – a long acting once daily antimuscarinic agent will also be available shortly.

Inhaled corticosteroids appeared to have no benefit during 3-year trials in mild COPD, but in moderate-severe disease they reduced exacerbations and slowed the rate of decline in health status. Thus they are indicated for the more severe patient with frequent exacerbations. To complicate matters, recent one-year trials have combined inhaled corticosteroid with long-acting beta-agonist (fluticasone+salmeterol and budesonide+formoterol). Results from these trials look very similar: inhaled corticosteroids and long acting beta-agonists have additive effects in nearly all outcomes measured. One of the most interesting observations is that the newest drugs (tiotropium and the combinations) reduce the loss of FEV1 that would normally occur over a year. This may be related to a progressive reduction in static lung volumes ('pharmacological lung volume reduction'). A further potential combination is anti-muscarinic plus long acting beta-agonist since there is some evidence of additive effects.

The assessment and treatment of COPD have changed greatly over the last few years. COPD is treatable with newer agents and many patients may expect worthwhile benefit.

CHALLENGES IN COPD MANAGEMENT IN MALAYSIA

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Chronic Obstructive Pulmonary Disease (COPD) is a major public health problem. It is currently the fourth leading cause of death in the world. In Malaysia, COPD together with other respiratory diseases rank as the most common cause for medical consultation and the fourth leading cause of hospital admission (MOH Annual Reports 1990-1996).

The challenges faced by health care providers in managing COPD in this country are enormous. The first challenge is to be able to make accurate diagnosis and objectively assess the severity of the disease. Spirometric measurement is necessary to achieve these but unfortunately many health facilities are not equipped with this basic instrument. Efforts must be made to encourage doctors to acquire spirometers and the skill to perform and interprete the test. The society has a role to play to provide the necessary training to doctors.

Since the single most important cause of COPD is cigarette, the most important component of COPD management is to stop or prevent tobacco smoking. Health education for public is important and should be intensified especially targeted at school children. At the same time continuous pressure and lobby is needed to put a stop to all kind of tobacco advertising, direct or indirect in all mass media including tobacco company sponsorship in sports. Punitive tax rate should be imposed on tobacco until less and less people can efford to buy cigarettes. Doctors themselves must be competent to assist patients to quit smoking.

Pharmacotherapy has been shown to have some beneficial effects, albeit modest. Doctors should be familiar with the roles of all drugs used in the treatment of COPD, the safety and efficacy of each group of drugs, the mode of administration that is most suited the patients who generally old and often have other co-morbid conditions. Teaching patients on how use inhaler properly can be a big challenge.

For the most advanced COPD, the over all outlook is depressing and the quality of life is generally poor. However, long term oxygen therapy has been shown to improve survival for this group of patients. All patients who fulfill the criteria for oxygen therapy should be treated accordingly but the challenge to both doctors and patients is the prohibitive cost of such treatment making it only accessable to few. It is only appropriate to expect the government to provide oxygen concentrator and cylinder to deserving patients but it is a real challenge to be able to convince the administrators and politicians about this.

Pulmonary rehabilitation has been shown to benefit COPD patients in term of improving exercise tolerance and symptoms of dyspnoea and fatigue. This is not an expensive program and not difficult to develop. We desperately need specialists to be interested in this field to cater for the patients and the country.

CLINICAL PRACTICE GUIDELINES (CPG) – TUBERCULOSIS

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The CPG for Tuberculosis (TB) was revised in 2001. This latest revision has been made so that the main principles of TB management in Malaysia are in line with recommendations of the World Health Organization (WHO). It therefore includes revised case definitions and categorization of cases into treatment categories. Patients are divided into three treatment groups instead of four. Drug toxicity monitoring and management remains the same as does management of TB in special situations. Importance of the DOTS strategy is emphasized and there is also a section on management of drug resistant TB. The appendix includes topics on prevention of TB among health care workers and Flow Charts for the management of TB contacts in adults and children. It is hoped that with widespread dissemination of this CPG, management of TB will be further improved and standardized both in the Government as well as the private sector.

INTERACTIONS BETWEEN CHILDHOOD LUNG DISEASES AND SLEEP

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The dynamics of respiratory control play an active and fundamental role in protecting normal airway patency, and in maintaining normal gas exchange during sleep. This talk will first cover the interactions of sleep and breathing, as a guide to understanding the mechanisms by which sleep and chronic lung diseases interact. These lung diseases include asthma, chronic neonatal lung disease, chronic restrictive lung diseases (with or without neuromuscular disease), and cystic fibrosis.

Examples of sleep studies will be used to illustrate how sleep studies help to evaluate deleterious effects interactions of sleep, and lung diseases. Examples of treatment strategies will also be presented. Specific case examples of asthma, neonatal lung disease, restrictive lung diseases, and cystic fibrosis will be presented.

Discussion will focus on current strategies to improve clinical detection, evaluation, and the provision of timely intervention for these children.

NEW MODALITIES FOR TREATING STATUS ASTHMATICUS IN CHILDREN

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Status asthmaticus is a life-threatening state of progressive respiratory failure due to asthma where conventional forms of therapy have failed. The current management of children with status asthmaticus includes administration of oxygen, β_2-adrenergic agonist bronchodilators, inhaled ipratropium, intravenous corticosteroids, intubation and mechanical ventilation.

Despite advances in the treatment of asthma and increased knowledge of the pathophysiologic mechanisms in asthma, the hospitalization rate, admission severity, and the incidence of intubation, cardiopulmonary arrest and death among children with asthma have risen. Recent studies have shown that intubation rates range from 5 – 10% for patients admitted to paediatric intensive care units.

The management of children with status asthmaticus remains a challenge. New innovations to current therapy and new modalities of therapy have been proposed while a new look at some current or unusual forms of therapy for the management of status asthmaticus in children have been carried out. This paper will discuss the role of the some of these adjunctive therapies.

Beta-receptor agonist bronchodilators are a crucial element of therapy in status asthmaticus. One of the newer innovations in inhaled β-agonist therapy is the development of levalbuterol, the R-isomer responsible for bronchodilatation. Levalbuterol has been approved by the US Food and Drug Administration for prevention and treatment of bronchospasm in patients more than 12 years of age. However, to date, there are very few controlled trials of its use in paediatric patients and its role in status asthmaticus remains unclear.

Inhaled nitric oxide (iNO), a selective pulmonary vasodilator has recently been shown to rapidly improve ventilation in life-threatening status asthmaticus in a small number of children without any significant side-effects. However, the data available is currently descriptive and further studies are warranted to determine the role of iNO as well as to identify patient characteristics that will predict which children will most likely respond to this therapy.

The use of helium-oxygen mixtures in status asthmaticus has also been revisited. Heliox has been shown to improve respiratory mechanics in spontaneously breathing as well as intubated children with severe asthma. In order to significantly lower the density of the inhaled gas mixture, helium needs to comprise 60 - 80% of the gas mixture and its use is hence limited in patients with high oxygen requirements. The role of theophyllines, magnesium sulphate and ketamine in status asthmaticus have also been reinvestigated.

As intubation and mechanical ventilation in children with asthma is not without its complications, non-invasive positive pressure (NIPPV) ventilation is now being investigated as a treatment modality for status asthmaticus. Initial studies have shown that NIPPV improved ventilation and gas exchange with resolution of hypercarbic respiratory failure.

Despite the various therapies available, the management of a child with status asthmaticus continues to be a challenge and the best way to manage severe asthmatic attacks is to prevent them.

NEW CONCEPTS IN SUDDEN INFANT DEATH SYNDROME (SIDS)

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The sudden infant death syndrome (SIDS) is defined as the sudden death of an infant less than 12 months of age that remains unexplained after a thorough investigation of the clinical history, death scene, and autopsy. The talk will begin with a brief review of the studies that identified prone sleep position as a significant risk factor for SIDS. The messages of the ongoing "safe sleeping" (Australia) and "back to sleep" (USA) campaigns will be discussed.

The epidemiological evidence regarding current, significant risks will then be explored. Current data, including updates of the epidemiological associations will be presented, and used to explain current research strategies. After prone sleeping, exposure to cigarette smoke remains the highest modifiable risk factor for SIDS. The mechanisms for this and other "high-risk" associations will be discussed.

The major hypotheses being explored in current research relate will then be presented. The themes to be discussed are "the vulnerable infant", abnormalities of cardiorespiratory control including evidence from brain (stem) pathological studies, and the role of infection/inflammation in precipitating death.

Knowledge about SIDS, relevant to a Respiratory Physician and their patients will be summarised. Future research directions will be proposed. Practical management strategies for families who have experienced previous SIDS, or who present with infants in a high risk category will be presented.

TRENDS IN ANTIBIOTIC RESISTANCE IN MALAYSIA

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Antibiotic resistance is a global problem of national concern. Among the pathogens associated with community-acquired respiratory infections, resistance to first generation β-lactams and macrolides in key pathogens such as H.influenzae, S.pneumoniae and M.catarrhalis can impact on the choice of empirical therapy. β-lactamase production in both Haemophilus and Moraxella is well documented in Malaysian isolates. Pneumococci with reduced susceptibility to penicillin and multi-drug-resistance is on the rise with rates of decreased susceptibility to penicillin varying from 7 to 30%. MRSA, which is endemic in many Malaysian hospitals, is the principal Gram-positive pathogen in VAP while P.aeruginosa, Acinetobacters and coliforms predominate among the Gram-negatives. Of particular importance is the increased prevalence of ESBL production in Klebsiella and E.coli that compromises the use of extended-spectrum β-lactams. ESBL production is often plasmid-mediated and has the potential to spread to susceptible organisms. Yet other growing threats include emerging carbapenem resistance and multi-drug resistance in P.aeruginosa and Acinetobacter and hyperproduction of AmpC β-lactamases in inducible organisms like Enterobacter. While the factors driving antimicrobial resistance are not fully understood, infection control measures and appropriate use of antimicrobials are essential strategies for the containment of antimicrobial resistance.

COMMUNITY ACQUIRED PNEUMONIA: RATIONALES FOR ANTIBIOTIC TREATMENT

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Community acquired pneumonia (CAP) is a common condition in the Asian Pacific region. Logical use of antibiotic treatment of CAP, which is almost always empirical initially, requires knowledge on the likely pathogens and their antimicrobial sensitivities. Although a number of published guidelines, including those of the British Thoracic Society, American Thoracic Society, Infectious Disease Society of America, European Respiratory Society and Canadian Thoracic Society have been published, these might have little relevance to the patients in this region. The microbiological aetiology for CAP in this region has been addressed by some recent studies, and these generally show different pathogenic patterns from those published by studies in the West. For instance, Gram negative bacilli such as *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, and *Burkholderia pseudomallei* appear to play more important role than the conventionally considered premier CAP pathogens such as *Streptococcus pneumoniae*. In addition, the relative incidence of "atypical pneumonia" such as that caused by *Legionella pneumophilia*, *Mycoplasma pneumoniae* and *Chlamydia pneumoniae* etc, appears to be very different even within the region. Our uniquely high bacterial resistance also deserves special consideration when antibiotics are prescribed. Recommendations from the ATS, BTS, ERS, IDSA, CDC and Japanese Respiratory Society, and have been published. For outpatients, most guidelines suggest the use of a macrolide or a β-lactam. In the presence of risk factors such as known antibiotic resistance, presence of modifiable factors (advanced age, COPD, or recent antibiotics or steroid therapy), a fluoroquinolone is indicated, although this might encourage development of resistance. Inpatients require treatment with a β-lactam plus a macrolide or monotherapy with a fluoroquinolone, and occasional cover for Legionella and *Pseudomonas aeruginosa*. While these North American and European guidelines are widely publicized, they are not completely evidence-based. Strict adherence to treatment guidelines has not been shown to improve clinical outcome. Their direct application for patients in the Asian Pacific region, in particular, could not be assumed without caution. Prospectively data collection for CAP in our region should help develop future consensus for CAP treatment to our patients.

NOSOCOMIAL PNEUMONIA

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Hospital-acquired pneumonia (HAP) is the leading cause of death from a nosocomial infection, which also leads to increased hospital length of stay, and probably increased attributable mortality. Estimates of mortality range from 20 to 50% with more severely ill patients obviously having higher mortalities. The highest risk of developing nosocomial pneumonia is for those on mechanical ventilation, where nearly one-quarter of intensive care unit patients develop pneumonia.

Choosing the appropriate choice of antibiotic may impact on outcome, as well as the type of pathogen responsible for the pneumonia.

Aspiration is thought to be responsible for HAP, and as such colonization of the oropharynx and to a lesser extent, the upper gastrointestinal tract become important determinants of the risk of HAP. Stress ulcer prophylaxis, semi-recumbent position, re-intubation, ventilator circuit changes, and aspirations of secretions above the cuffed endotracheal tubes have all been factors for the development of HAP.

HAP is frequently polymicrobial, with a predominance of gram-negative bacilli (60%). The common gram-negative bacilli are *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Enterobacteriaceae* species, *Klebsiella* species, *Escherichia coli*, *Haemophilus influenzae*, and *Serratia marcescens*. Acinetobater species have emerged as a significant pathogen in certain centres.

Diagnosis of HAP can be difficult as the clinical criteria of fever, purulent sputum, leukocytosis, and a new chest infiltrate on the chest radiograph may be wrong especially in ventilated patients with ARDS. Quantitative cultures with protected collection techniques for patients not on antibiotics is the method of choice for making the diagnosis.

Empiric treatment should cover for the putative organisms that involve Gram negative bacilli, and potentially MRSA as well. Knowledge of the local microbiological pattern and the resistance pattern will also aid in the empirical choice. Double coverage for *Pseudomonas aeruginosa* is recommended.

BRONCHIECTASIS AND DIFFUSE PANBRONCHIOLITIS

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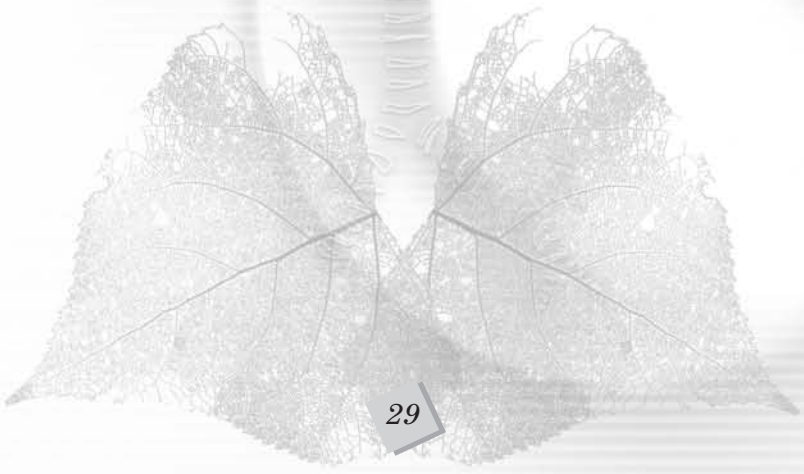
Bronchiectasis, a common and largely idiopathic disease, is defined as pathological and permanent dilatation of the bronchial tree. Patients suffer from regular sputum production, recurrent exacerbations, and gradual destruction of the airways and lung parenchyma. The pathogenesis of bronchiectasis is poorly understood, largely due to the lack of Western interests in this "orphan" disease. Recent studies have nevertheless identified three inter-related distinct pathogenic elements, namely airway infection, inflammation and enzymatic activities. While antibiotic therapy is beneficial for the management of bacterial respiratory tract infections, it might only affect the rate of disease progression. Intense neutrophil infiltration into the tracheobronchial tree, mediated by proinflammatory mediators, occurs in bronchiectasis. These neutrophils release toxic products, such as elastase and matrix metalloproteinases, and cause further airway destruction. Patients with reduced FEV_1 (<60% pred) and sputum production >30ml/day are likely to harbour *Pseudomonas aeruginosa*, which should be treated with quinolones or anti-pseudomonal β-lactams. Their counterparts should receive antibiotic specific for *Haemophilus influenzae* and *Streptococcus pneumoniae*. Anti-inflammatory treatment, such as inhaled corticosteroid (ICS) therapy, reduces sputum pro-inflammatory mediator levels, which could be beneficial to the disease process. Our recently completed 12-month study shows that ICS therapy is associated with significantly more patients showing improvement in 24h sputum volume (OR 2.5, 95%CI 1.1-6.0), but not exacerbation frequency, FEV_1, FVC or sputum purulence score. Significantly more ICS patients with *Ps. aeruginosa* infection at baseline showed improvement in 24h sputum volume (OR 13.3, 95%CI 1.8-100.1) and exacerbation frequency (OR 13.5, 95%CI 1.8-101.1), compared with their placebo counterparts. For mechanisms other than anti-inflammatory and anti-bacterial actions, some severely affected patients with active disease may also benefit from treatment with low dose macrolide (e.g. erythromycin 500mg BID) treatment.

Diffuse panbronchiolitis (DPB) is a recently recognised idiopathic chronic progressive suppurative and obstructive airway disease. DPB typically presents with wheezing, chronic bronchial sepsis, and often rapidly progresses to respiratory failure and death if untreated. Many patients with early DPB have *H. influenzae* isolated from their sputum, which is replaced by the repeated isolation of *Ps. aeruginosa* in more advanced disease. Crackles and wheezes are generally detected on auscultation of the chest. Typically, chest radiographs and HRCT show the presence of diffuse small nodules (<2mm) distributed symmetrically and predominantly basally. There is also hyperinflation of the lung fields consistent with small airway obstruction, and bronchiectasis is also present in advanced disease. Long-term administration of erythromycin (600mg daily) improves the 10-year survival rate of DPB patients who had *Ps. aeruginosa* infection from 12.4 to > 90%. DBP is likely to be under-diagnosed outside Japan and affected patients might therefore miss the opportunity to receive a highly efficacious treatment.



MANAGING ACUTE RESPIRATORY INFECTIONS IN CHILDREN

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(On behalf of CPG Committee on Pneumonia and Respiratory Infections in Children)

Clinical practice guidelines on pneumonia and other respiratory tract infections in children have just been completed. These guidelines attempt to address areas of controversy in our daily management of these important problems. This presentation summarizes the main thrusts of the guidelines.

The two main syndromes in the upper respiratory tract are the common cold and sore throat. Over usage of antibiotics is the main concern. The clinician should attempt to make an accurate differentiation between the two syndromes. The common cold does not require an antibiotic while only a small proportion of sore throat may benefit from such a treatment. Diseases complicating infection by Group A β-haemolytic streptococcus (GABHS) are still important in certain parts of the country and judicious use of antibiotics based on certain clinical indicators is justifiable. The use of throat culture or rapid antigen testing is not appropriate in our setting.

Croup is a clinical syndrome rarely requiring any investigation. Steroid therapy in moderate to severe croup should be routine although there is some controversy in the choice of steroids. Nebulised adrenaline is a useful adjunct.

Respiratory syncytial virus is the most common cause of acute bronchiolitis. Diagnosis is clinical and rarely should an X-ray examination be performed. Only 1% of children require admission. Oxygen and supportive therapy are still the main stay of treatment in hospitalized children. Bronchodilators and steroids are still controversial. A trial of nebulised β_2-agonist may be considered and systemic steroids may be of benefit in severe cases. Ribavirin is not recommended. There is no evidence to recommend prophylaxis using specific monoclonal antibody in Malaysia.

Pneumonia is the major cause of death in children in developing countries. Proper diagnosis and assessment of severity save lives and reduces cost in its management. Community acquired pneumonia may be treated at home and hospitalization may be based on clinical criteria. Minimal investigations are required. Since it is difficult to differentiate between viral and bacterial pneumonias antibiotic treatment has become a norm. The choice of antibiotics depends on the age of the child, local epidemiology and sensitivity of the pathogens. Parenteral antibiotics are recommended for hospitalized children. Severe cases may require combined antibiotic therapy. Staphylococcal and Klebseilla pneumonia are more frequently reported in malnourished children and should be treated appropriately. Oxygen reduces mortality in severe pneumonia.

Antitussives and chest physiotherapy should not be routinely prescribed for children with bronchiolitis and pneumonia. Antitusssives may interfere with airway clearance. Chest physiotherapy may induce deterioration in a hypoxaemic child and there is no evidence that it is beneficial when routinely performed.

ISSUES IN THE MANAGEMENT OF PULMONARY TUBERCULOSIS IN CHILDREN

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Eight million new cases and nearly two million deaths due to Tuberculosis (TB) continue to occur annually. Of these 1.3 million new cases and 450,0000 deaths are estimated to be among children under the age of 15 years old. In 1998 WHO reported that 1.3 million TB sufferers were from South East Asia.

Epidemiological data regarding TB in children are scanty, partly because the difficulty in diagnosis and the absence of a definitive diagnosis and partly also because it is less of public health importance than adult (infectious) tuberculosis.

The Global Tuberculosis Report 2000 shows that smear positive TB in children aged 1 - 14 years old is in the range of 0.6 - 6.9% of the total reported cases thus not reflecting the burden of the illness.

Isolation of *M tuberculosis* is difficult in children. There is poorly defined boundary between infection and disease in children. Primary infection is usually asymptomatic and remains unrecognized in 90% of children. This is only manifested by a positive tuberculin test. Untreated infection in an infant or child <2 years old may be followed by disease in the form of tuberculosis meningitis or military tuberculosis.

The tuberculin test is currently the only proven method for identifying TB in children. Although it is not fully sensitive or specific, it remains a widely available diagnostic tool. Chest radiograph is indicated for all children being assessed for possible tuberculosis. Computed tomogram is very helpful in children with vague clinical signs or in whom chest radiograph does not conclusively shows typical lesions. Although the use of flexible bronchoscopy in diagnosis of tuberculosis is debatable, it may be useful to identify endobronchial lesion or as an objective assessment for the requirement of corticosteroid therapy.

Clinical trials of antituberculosis therapy in children are difficult to perform. Isoniazid, rifampicin and pyrazinamide are the cornerstones of current antituberculosis regimens and are used in all patients unless resistance are identified. The Malaysian Guidelines has endorsed a regimen of six months of isoniazid and rifampicin supplemented during the first two months by pyrazinamide. Most national programmes recommend chemoprophylaxis for infants and children under five years old who live in a household with a smear positive patient especially the mother. Other issues such as adherence to treatment needs to be addressed because non-adherence has being identified in at least 40 - 50 % of patients suffering from chronic illness. The incidence of drug resistance is increasing world wide. Primary resistance is the major type of resistance in children. Drug resistance in children reflects those found in the adult patients found in the same population.

FREE PAPERS – ORAL PRESENTATIONS

CLINICAL AND LABORATORY PATTERN OF PATIENTS WITH SARCOIDOSIS SEEN AT UNIVERSITY MALAYA MEDICAL CENTRE, KUALA LUMPUR

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Background and Objectives: *The epidemiology of sarcoidosis in Malaysia is largely unknown. The objective of this study is to review the experience of a tertiary teaching hospital with sarcoidosis and the clinical pattern of the disease in the Malaysian patients.*

Methods: *A retrospective study was carried out on all patients diagnosed with sarcoidosis over a period of 15 years (1987 - 2001) at the University Malaya Medical Centre, Kuala Lumpur.*

Results: *Thirty-six patients were diagnosed to have sarcoidosis during the study period. Of these patients, 25 (69.4%) were Indians, 7 (19.5%) Malays and 4 (11.1%) Chinese. The median age at diagnosis was 39 years with a range of 23 to 72 years. There were 20 female and 16 male patients; giving a female to male ratio of 1.25:1. The commonest presenting symptoms were cough (41%), weight loss (39%), fever (36%), joint pain (22%) and dyspnoea (17%). The commonest presenting signs were peripheral lymphadenopathy (25%), hepatomegaly (22%), neurological signs (22%), erythema nodosum (19%), and splenomegaly (11%). Biochemistry showed raised alkaline phosphatase in 19%, hypercalcaemia in 17% and hypercalciuria in 28%. Lymphopenia was detected in 28% of patients. Skin anergy to tuberculin was found in all those tested (29 patients). The patients were classified using the Siltzbach radiological staging into Stage O to III. Eight patients (22%) had Stage O, 20 (56%) Stage I, 3 (8%) Stage II and 5 (14%) Stage III. Forced vital capacity and forced expiratory volume in one second were reduced in about three quarter of the patients and reduced diffusing capacity of carbon monoxide was found in 47% of those who were tested (19 patients). The diagnosis in 34 (94.5%) patients was proven histologically.*

Conclusions: *The clinical presentation of our patients was similar to that of the western population with some differences such as less intathoracic (78%) involvement and relative frequent neurosarcoidosis (22%). Sarcoidosis, though rare in our community, should still be considered in the differential diagnosis of patients with the typical presentation after excluding tuberculosis which is endemic. Further study of a larger number of patients over a longer period would be necessary to provide a better picture of the disease in the Malaysian population.*

THE UTILITY OF TUMOUR MARKERS IN THE DIAGNOSIS OF NEOPLASTIC PLEURAL EFFUSIONS

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Objectives: *To evaluate the use of pleural fluid carcinoembryonic antigen (CEA), carbohydrate antigen 125 (CA125), carbohydrate antigen 19-9 (CA19-9) and carbohydrate antigen 15-3 (CA15-3) in the diagnosis of neoplastic effusions.*

Methods: *A prospective study was performed from May 2001 to January 2002. Consecutive patients admitted to the medical wards with pleural effusion or referred from non-medical wards to the respiratory team for pleural effusion during that period were included in the study. In addition to routine pleural fluid analysis, the levels of CEA, CA125, CA19-9 and CA15-3 were measured in the pleural fluid using immunometric assay.*

Results: *Of 109 patients with pleural effusions, 15 had transudates and the rest exudates (36 neoplastic {malignant [21] and paramalignant [15]}, 26 tuberculosis, 21 parapneumonic, 5 empyema, 6 other causes). There were statistical significant differences in the levels of pleural fluid tumour markers between benign and neoplastic effusions except pleural fluid CA125. To achieve the best accuracy for diagnosing neoplastic effusions, the following cutoff levels are suggested; pleural fluid CEA: 7.9ng/mL; pleural fluid CA125: 3042 U/mL; pleural fluid CA19-9 U/mL: 7 U/mL and pleural fluid CA15-3: 44U/mL. Based on these cutoff levels, the specificity of these tests for diagnosing neoplastic effusions ranged from 90% to 100%. The combination of pleural fluid cytology and CEA gave a sensitivity of 78% for diagnosing a pleural effusion as neoplastic. The highest sensitivity (91.6%) for diagnosing neoplastic effusion was achieved by the combination of pleural fluid cytology, CEA, CA15-3 and CA19-9.*

Conclusions: *The combination of pleural fluid cytology, CEA, CA15-3 and CA19-9 is useful in differentiating neoplastic pleural effusions from benign ones.*

THE EFFECTIVENESS OF ORAL CORTICOSTEROID IN ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Introduction: *Chronic obstructive pulmonary disease (COPD) is an important cause of death worldwide and exacerbations of this disease commonly lead to hospital admission and increased cost. The role of oral corticosteroids in treating patients with exacerbation of COPD remains contentious. We assessed the effects of oral corticosteroid therapy in patients with exacerbations of COPD requiring hospital admission.*

Methodology: *Patients with the diagnosis of COPD presenting with acute exacerbation to casualty or outpatient department in Hospital Alor Setar were recruited and randomly assigned to receive either oral prednisolone 20mg once daily (n=27) or similar-appearing placebo (n=26) for 14 days. Standard treatment which include nebulised bronchodilators, antibiotics and oxygen were given. Daily spirometry was done and recorded. Patients were recalled at six weeks to repeat spirometry and collect data on subsequent exacerbations and treatment. Data was analysed using Student's t test to compare normally distributed data and* χ^2 *test to compare proportions.*

Results: *Force expiratory volume in 1 second* (FEV_1) *increased better in the corticosteroid-treated group. Percentage predicted* FEV_1 *after brochodilation on admission rose from 24.4% (95% CI 23.1-25.7) to 29.1% (95% CI 27.0-31.1) at discharge in the placebo group compared with 26.4% (95% CI 24.4-28.2) on admission to 37.7% (95% CI 35.5-39.9) at discharge in the corticosteroid-treated group (p<0.001). The length of hospital stay in patients treated with oral corticosteroid (5.5 days) was shorter than in those receiving placebo (8 days, p=0.001). At 6 weeks, percentage predicted* FEV_1 *after bronchodilation was 33.7% (95% CI 31.9 – 35.4) in corticosteroid group and 28% (95% CI 26.1 – 29.8) in the placebo group, which were not significantly different to discharge values.*

Conclusions: *Data from this study supported the use of low dose oral corticosteroids in patients with non-acidotic exacerbations of COPD requiring hospital admission.*

TRACHEOSTOMY REVISITED

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Introduction: *A brief history of tracheostomy was reviewed with emphasis on the changing role in which the procedure is performed.*

The data compilation was aim at developing a guideline on performing the procedure, which may be indicated as an emergency or as an elective, by any trained surgeons.

A two-and a half-year experience of Hospital Selayang's ORL Department was reviewed comprising the following factors: Referring department, indication of the procedure, preoperative morbidity, postoperative complications, aftercare and outcome. Relationship between duration of preoperative intubation and complications were also looked into.

Among the findings were: The procedure was mainly indicated for assisting ventilation, bronchial toilet and occasionally for airway obstruction. The Anaesthetists were the main referring source although the primary carer is the Medical Department. The request for tracheostomy is made within 10 days post-intubation. The delay in performing the procedure was mainly due to the poor condition of the patient, which need to be corrected.

Immediate postoperative complications were rare unless expected such patient with cougulation defects. Postoperative outcome was related to the patient primary illness. No follow-up was made to those who were extubated and discharged home.

Conclusions: *Preliminary data gathering to develop guideline for tracheostomy was made and the assessment was needed to establish local baseline information to provide better care of those who need it.*

POSTERS

PRESCRIBING PATTERNS FOR CHILDHOOD ASTHMA TREATMENT IN GENERAL PRACTICE

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Objectives: *General practitioners provide an integral component of health care services for asthma children. We determined the treatment preferences of general practitioners (GPs) for the management of childhood asthma. Availability and adherence to clinical practice guidelines (CPG) for the treatment of childhood asthma was also assessed.*

Methods: *A self-administered standard questionnaire was administered to 125 GPs attending a pharmaceutical industry sponsored workshop. Only GPs who see children in their practice were included.*

Results: *One hundred and nine (87.2%) completed questionnaire were suitable for final analysis. There were 94 (86.2%) primary GPs and 15 (13.8%) paediatric specialist GPs. Ninety-eight (90%), 60 (55%) and 33 (30%) GPs considered nocturnal symptoms >2 times/week, exercise induced wheeze and cough respectively as indications for preventer therapy. The GP category did not influence the clinical indication for prescribing preventive asthma therapy.*

An oral preparation was preferred for relief medication [72 (66%) for 2 - 5 years, 60 (55%) for >5 years]. An inhaled preparation was however preferred for preventer medication [60 (55%) for 2 - 5 years, 85 (78%) for >5 years]. The oral form was more likely prescribed for asthmatic children 2 - 5 years ($p<0.001$). Corticosteroids and Ketotifen were the commonest inhaled and oral preventer treatment prescribed respectively. Only 36 (33%) GPs have a CPG copy for reference.

Conclusions: *Children with asthma symptoms that require preventer therapy may not always be identified in general practice. The oral form remains a popular route for asthma medication especially in young children. The accessibility and use of the CPG among GPs is disappointing.*

INFLUENCE OF ETHNICITY ON SYMPTOMS ASSOCIATED WITH INGESTION OF FRUITS IN CHILDREN WITH ASTHMA

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Objectives: *Malaysian parents commonly report asthma symptoms following the ingestion of certain foods by their asthmatic children. We determined the prevalence of parental perception of asthma symptoms following the ingestion of different fruit types and how individual cultures influence this perception by comparing the 3 major different ethnic groups in Malaysia.*

Methodology: *A standardized questionnaire was administered by direct interview to 160 parent-asthmatic child pairs who were attending follow-up at the Paediatric Asthma clinic. Only children aged 5 - 15 years with an established diagnosis of moderate to severe asthma and receiving inhaled corticosteroids were included. Parents were asked to identify fruits types that after ingestion were associated with the development of acute asthma events within 12 hours in the absence of an upper respiratory tract infection.*

Results: *One-hundred and five (65.6%) parents reported asthma symptoms following ingestion of fruits. There was no significant difference in the ethnic distribution and asthma symptoms associated with any fruit ingestion [Malays 60/89 (67.4%); Chinese 23/43 (53.4%); Indians 22/28 (78.5%), p=0.089]. However, Chinese parents more commonly implicated mangoes and Indian parents were more likely to report asthma symptoms following ingestion of grapes and bananas.*

Conclusions: *Many parents observe asthma symptoms following the ingestion of fruits among their asthmatic children. Different ethnic groups appear to implicate different fruit types namely mangoes, grapes and bananas in causing asthma symptoms. This observation reflects the possibility that individual ethnic culture influence the perception of food associated asthma symptoms among Malaysian children.*

A CASE OF DISSEMINATED TUBERCULOSIS PRESENTING WITH HYPERPIGMENTATION

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Tuberculosis remains one of the major problems in global health. It is a leading cause of mortality worldwide, with a growing death rate. Pleuritis remains the most common extrapulmonary site of involvement[1]*. Tuberculosis involving the adrenal gland is an uncommon clinical condition, while adrenal dysfunction secondary to tuberculosis is an even rarer combination in current practice. The advent of molecular biology has allowed new insights into disease mechanism.*

Herein we describe a patient who presented with the uncommon presentation of hyperpigmentation in this common disease. CT scan and polymerase chain reaction (PCR) tests were utilized in making the diagnosis.

AETIOLOGY AND RISK FACTORS FOR MORTALITY IN PNEUMONIA AMONG ADULTS ADMITTED TO MEDICAL WARDS OF HUKM

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Introduction: *Community acquired pneumonia remains an important cause of mortality in developing nations. In 1992, Malaysia had 19,827 hospital admissions due to pneumonia, which accounts for 1.6% with a number of 212 death cases (12.4%).*

Objectives: *To study the aetiology of acute pneumonia in Hospital Universiti Kebangsaan Malaysia and to ascertain the risk factors for mortality.*

Methods: *Patients with primary pneumonia were selected by retrospective review of the hospital records of consecutive cases of pneumonia admitted to medical wards occurring in a 6-month period (July 2000 till December 2000). A case was defined by an illness of 14 days duration or less that consisted of at least two respiratory symptoms with radiographic evidence of pulmonary consolidation. Demographic information and data on the prognostic factors identified in the British Thoracic Society (BTS) study and several other studies, was collected.*

Results: *158 patients (13 - 97 years) were studied. 17 (10.8%) patients died. Cardiovascular disease was the most frequent (25%) co-existing disease. Respiratory disease, diabetes mellitus (DM), Cerebrovascular accident (CVA) and neoplasm constituted of 19.20%, 10.66%, 3.69% and 2.05% respectively. No pathogens were identified in 59.26% of the specimens. Klebsiella sp. was the most frequent aetiological agent identified followed by coagulase ngative staphylococcus.*

Conclusions: *The predictive values for death in pneumonia were older age, male gender, respiratory rate of more than 30 breath per minute, blood urea of 7 mmol/l or more and concomitant CVA or HIV. The pattern of aetiological agent of death in pneumonia is predominantly gram-negative bacteria ie. Pseudomonas aeruginosa. Amoxicillin was the antimicrobial therapy of choice as the first line of treatment.*

A CROSS-SECTIONAL STUDY OF KNOWLEDGE, ATTITUDE AND PRACTICE OF SMOKING AMONG RESPIRATORY PATIENTS IN HUKM

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Introduction: *In Malaysia, smoking prevalence has increased from 21% in 1986 to 23% in 1996. In 1987 nationwide survey conducted by Ministry of Health, smoking prevalence was reported as 40 - 50%.*

Methods: *A cross-sectional study of smoking, prevalence, its distribution by demographic characteristic, smoking habits, perception and attitude of smoking among 109 asthma, COAD, TB and lung cancer patients attending respiratory medicine clinics and in-patients of medical wards of HUKM during a of two-week period. A modified self reported WHO standard questionnaire for adults on smoking was used. The respondents were selected by a convenient random sampling.*

Results: *The overall smoking prevalence was 47.7%. Prevalence was highest among Chinese patients. Knowledge level about smoking was high and perception was good among respondents. The prevalence of smoking among asthma is 34%, COAD 70.8%, TB 48.3% and lung cancer is 66.7%.*

The mean age of starting smoking was 19.6 years and the mean number of cigarettes smoked per day was 18.4. More than 84% of respondents had an intention to stop smoking and more than 80% of them had ever made a serious attempt to quit smoking.

Conclusions: *Knowledge level and attitude were different between patients with various types of diseases. There was a moderate positive correlation between knowledge level and attitude. Non-smokers had better knowledge and favorable attitude as compared with smokers.*

EFFECTIVENESS OF CLASS-ROOM BASED ANTI-SMOKING INTERVENTION PROGRAMME AMONG MALAYSIAN SCHOOL CHILDREN

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More Malaysian children are smoking recently.

Objectives: *To determine the level of Knowledge, Attitudes and Practices (KAP) of smoking among school children in Malaysia and the impact of an intervention programme on KAP.*

Methods: *Eight Primary and 8 Secondary Schools (2 Primary & 2 Secondary schools in each state, Bachok, Kelantan; Kuantan, Pahang; Selayang, Selangor, and Kuala Lumpur), were studied from May 2000 to June 2001. One Primary (standard 2 students) and 1 Secondary School (Form 1 students) from each state were randomly selected for intervention and the other school remained as control. Questionnaires were designed to assess the KAP of students before and after (immediately and 6 months) a 6-week intervention program. Scores calculated for each section (knowledge, attitude and practice) were compared between the intervention and control schools using repeated measures ANOVA. The intervention programme consisting of 6 modules were delivered one per week by health curriculum teachers in the classroom after the teachers were trained. The modules consisted of lectures, discussions, books and posters covering various topics on "Smoking and health".*

Results: *Seven hundred and seven (77.1%) of 917 Primary school children and 721 (71.5%) of 1009 Secondary school children completed the study. In Primary schools 33 (10.4%) boys and 24 (7.4%) girls had ever smoked. In Secondary schools 52 (14.1%) boys and 43 (12.3%) girls had ever smoked. In primary schools smoking was significantly associated with smoking by fathers (79.3% vs 56.1% $p < 0.001$), siblings (20.7% vs 10.3% $p=0.01$) and friends (27.8% vs 11.6% $p<0.001$). In secondary schools smoking was significantly associated with smoking by brothers (45.3% vs 24.6% $p<0.001$), and friends (29.7% vs 8.4% $p<0.001$). In primary schools the intervention programme significantly increased the scores for knowledge ($p<0.001$) but not the scores for attitude ($p=0.17$) and practice ($p=0.45$). In secondary schools the intervention programme significantly increased the scores for knowledge ($p<0.001$) and attitude ($p<0.001$) but not the scores for practice ($p=0.10$).*

Conclusions: *Smoking is a major problem among primary and secondary school students, and their smoking habits were mainly influenced by relatives and friends. The results of this study indicate the necessity of a health educational program on smoking in schools to reduce the magnitude of the problem. Repeating the intervention program is probably necessary before the habits on smoking among school students can be changed.*

AEROALLERGEN SENSITIZATION AMONG CHILDREN WITH ASTHMA

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Objectives: *Aeroallergens are associated with the development and persistence of atopy namely asthma and rhinitis in children. We determined the sensitization to aeroallergens by skin prick test reactivity in children with atopy.*

Methods: *Fifty-two children aged 5 – 15 years with an established diagnosis of asthma were recruited and had standardized skin prick tests (SPT) performed. Recombinant aeroallergens tested included 3 types of* Dermatophagoides pteronyssinus *(DP), 9 types of* Blomia tropicalis *(BT), dog and cat dander.*

Results: *Thirty-eight children (73%) showed SPT positivity to at least one type of DP or BT. SPT positive to cat and dog dander was present in 18 (47.3%) and 11 (21.2%) children respectively. Children older than 10 years were more likely to show SPT positive to DP [22/48; 91.7% vs 16/28; 57.1%, p=0.005] and BT [24/24; 100% vs 14/28; 50.0%, p<0.01]. Age did not influence SPT positivity to dog or cat dander. The ethnicity and gender did not appear to influence SPT positivity to the aeroallergens tested. The concurrent presence of allergic rhinitis and eczema did not influence the SPT positivity. DP1, DP2 and BP5 were the 3 most common recombinant aeroallergens associated with sensitization.*

Conclusions: *DP and BT were the most common aeroallergens asthmatic children demonstrate sensitization to. Older children appeared to be more likely to demonstrate sensitization to these aeroallergens. Information regarding the frequency of sensitization to specific recombinant aeroallergens provides a guide to selecting allergens most appropriate for desensitization therapy.*

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