SOUVENIR PROGRAMME | ABSTRACT BOOK

MALAYSIAN THORACIC SOCIETY

LUNG FOUNDATION OF MALAYSIA

6th – 8th JULY 2012

VENUE

Pullman Kuching
Sarawak, Malaysia

SARAWAK CONVENTION BUREAU

Contents

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Message from the President of the Malaysian Thoracic Society

Welcome to the Malaysian Thoracic Society Annual Congress 2012. I hope that, like me, you are eagerly looking forward to this annual event with much enthusiasm. The Society has enjoyed a very busy year since our last Congress. Apart from the usual CME seminars in partnership with the biomedical industry, workshops in areas such as pulmonary rehabilitation and ventilation have been successfully conducted and more are being planned. Later this year we will hold our inaugural train-the-trainers fibreoptic bronchoscopy workshop and also our annual interventional pulmonology workshop under the aegis of the interventional pulmonology special interest group.

It would be fair to say that there has been a resurgence of interest in respiratory medicine. We have seen an increase in the numbers of ordinary, life and affiliate members. The number of trainees in the specialty also continues to grow which bodes well for the future of the specialty. The advent of newer diagnostic and therapeutic procedures, new treatments for chronic respiratory conditions as well as further advances in our understanding of these diseases as a result of increased research in the area, make this an exciting time to practise respiratory medicine.

The Society views its role in the advancement of respiratory medicine in Malaysia as paramount. Indeed it is a privilege to do so. As with previous Congresses, the Organizing Committee has put together a programme with the needs of members in mind. Accordingly, the scientific programme comprises state-of-the art lectures, symposia and debates over a wide range of respiratory diseases. including infection, malignancy, airway diseases and thoracic imaging. This year we have a dedicated symposium for managing respiratory disease in primary care. The scientific communications received also continue to increase both in quality and quantity.

I wish to thank the biomedical industry for their great support and contribution for this meeting. I would also like to thank the members of the Organising Committee, led by Dr Hooi Lai Ngoh, Dr Tie Siew Teck, Associate Professor Dr How Soon Hin and Dr Asiah Kassim for their excellent team effort in making this meeting a success. We hope that you will enjoy this meeting and also take the opportunity afforded to make new contacts and re-establish old acquaintances in this culturally vibrant city of Kuching.

With best wishes,

Roslina Abdul Manap

Prof Dr Roslina Abdul Manap
President
Malaysian Thoracic Society

Message from the Chairman of the Lung Foundation of Malaysia

As a co-organiser of this prestigious meeting, the Lung Foundation of Malaysia wishes to warmly welcome all participants to the Malaysian Thoracic Society Annual Congress 2012. This year's Congress is held for the first time in Kuching, Sarawak, a land that is rich in culture and natural beauty. The Congress will provide the opportunity for participants to engage in the discussion of a comprehensive range of topics in lung diseases and address the latest advances in the diagnosis and treatment. I trust you will find the Congress to be highly educational and interesting. I hope you will also be able to find time to explore the beauty of Sarawak – a land with a great range of bio-diversity.

Apart from supporting activities to enhance knowledge and skills to care for patients with lung diseases, the Foundation also strives to promote scientific research in any field of Respiratory Medicine in this country. In line with that, I am proud to inform you that beginning from this year, the Foundation will be offering travelling grants up to 10 participants to present their research work at the Congress. The grant, each worth RM 2000, should be able to cover travelling expenses to attend the Congress. The Foundation will continue its tradition of awarding prizes to the winners of oral and poster presentations. Beginning from this year too, we will also be offering two travelling fellowships / grants worth RM 20,000 each to Malaysian scientists or doctors to do a short attachment in a respiratory centre of excellence overseas. The purpose of this grant is to encourage the development and acquisition of new skill in any area in adult and paediatric respiratory medicine among Malaysians at the level of Specialist or Consultant. Those who are interested may apply to the Foundation.

The Annual Congress is not only a place to learn new knowledge or exchange ideas, but also a place to meet up with old friends and make new ones. Do not miss the opportunity to widen your network especially with people who share the same interest with you.

I hope you will have an enjoyable and fruitful meeting.

Dato' Dr Zainudin Bin Md Zin
Chairman
Lung Foundation of Malaysia

Message from the Organising Chairpersons of the MTS Annual Congress 2012

On behalf of the Organising Committee, we would like to welcome you to the Malaysian Thoracic Society Annual Congress 2012. This is the first time the Malaysian Thoracic Society Congress is being held in Sarawak and, serendipitously, it coincides with the first anniversary of the establishment of the Respiratory Medicine Unit in the Sarawak General Hospital.

An exciting scientific programme has been prepared and many renowned speakers have been invited to share their experience. There will be plenary lectures and symposia, as well as breakfast sessions, a hands-on workshop and a debate. A record number of scientific papers will be presented during the oral and poster presentations.

A social programme with a strong Sarawakian flavour has been arranged. Kuching is a beautiful city known for its warm hospitality and we hope that you will have opportunity to see something of the city and Sarawak before returning home.

For those who have yet to become members of the Malaysian Thoracic Society, do

fill up a membership application so as to enjoy all the membership benefits including educational and travel grants for activities related to respiratory medicine.

Thank you for your participation and enjoy the conference!

Dr Hooi Lai Ngoh
Organising Chairman

Dr Tie Siew Teck
Local Organising Chairman

Programme Summary

Date / Time	6th July 2012 Friday	7th July 2012 Saturday	8th July 2012 Sunday
0700 – 0800	REGISTRATION	REGISTRATION **Meet the Professor Breakfast Session**	**Meet the Professor Breakfast Session**
0800 – 0840	WELCOME & OPENING REMARKS **PLENARY 1**	**PLENARY 2**	**PLENARY 3**
0840 – 1010	**SYMPOSIUM 1A – 1C**	**SYMPOSIUM 3A – 3C**	**SYMPOSIUM 4A – 4C**
1010 – 1040	Tea	Tea	
1040 – 1120	**Morning Symposium** *(AstraZeneca)*	**Morning Symposium** *(GlaxoSmithKline)*	**Morning Symposium** *(Bayer)*
1120 – 1220	**Lunch Symposium** *(Novartis)*	**Adult Grand Round** / **Paediatric Grand Ward Round**	**Late Morning Symposium** *(Roche)*
1200 – 1300			**DEBATE**
1220 – 1415	Lunch Break and Friday Prayers	1220 – 1300 **Lunch Symposium** *(Sanofi Pasteur)* 1300 – 1415 Lunch	1300 Closing and End
1415 – 1545	**SYMPOSIUM 2A – 2C**	1415 –1800 **Hands-On: Thoracic Ultrasound** **Complimentary Tours**	
1545 – 1645	***Oral Presentations*** / ***Concurrent Poster Presentations***		
1645 – 1715	Tea		
1715 – 1815	**MTS AGM**	1415 –1800 ***Meeting of Respiratory Medicine Subspecialty Trainers and Trainees***	
1815 – 2200	**Dinner Symposium** *(MSD)*	1415 –1800 **Dinner Symposium** *(Takeda)* 2000 – 2230 **GALA DINNER**	

Daily Programme
6th July 2012, Friday

0700 – 0800	Registration	
0800 – 0805	Welcome by Dr Hooi Lai Ngoh, Chairperson, Organising Committee	
0805 – 0810	Opening Remarks by Prof Dr Roslina Abdul Manap, President, Malaysian Thoracic Society	
0810 – 0850	**PLENARY 1** *Chairperson: Prof Dr Liam Chong Kin* New developments in phenotyping asthma and COPD: What are the implications for COPD? [page ...] ***Prof Dr Paul Jones (UK)***	COLOSSEUM I
0850 – 1020	**SYMPOSIUM 1A: *Obstructive Airway Diseases*** *Chairpersons: Datuk Dr Aziah Ahmad Mahayiddin / Prof Dr Roslina Abdul Manap* Is there any role of ICS in COPD? [page ...] ***Prof Dr Lim Tow Keang (Singapore)*** Asthma management: Today and tomorrow ***Prof Dr Andrew Peter Greening (UK)*** Bronchial colonization versus infection in airway disease ***Prof Dr Liam Chong Kin (Malaysia)***	COLOSSEUM I
	SYMPOSIUM 1B: *Pulmonary Malignancy* *Chairpersons: Assoc Prof Dr Pang Yong Kek / Dr Kuan Yeh Chunn* Lung cancer screening [page ...] ***Prof Dr Martin Reck (Germany)*** Pleurodesis: When and how to do it? [page ...] ***Assoc Prof Dr Fauzi Mohd Anshar (Malaysia)*** How has the new staging system and new classification of adenocarcinoma affected our management of patients with NSCLC? [page ...] ***Prof Dr Martin Reck (Germany)***	COLOSSEUM II
	SYMPOSIUM 1C: *Do We Know Enough About Cough?* *Chairpersons: Assoc Prof Dr Jessie de Bruyne / Assoc Prof Dr Hasniah Abdul Latif* Chronic cough, is it always infective in origin? [page ...] ***Prof Dr Anne B Chang (Australia)*** Management of cough at the primary care setting [page ...] ***Dr Patrick Chan Wai Keong (Malaysia)*** Chronic cough and treatment options [page ...] ***Prof Dr Anne B Chang (Australia)***	PETRA II
1020 – 1050	Tea	
1050 – 1130	**Morning Symposium** *(AstraZeneca)* Path forward in personalised treatment: Cost effectiveness in 1st line treatment of advanced NSCLC [page ...] ***Dr Gilberto Lopes (Singapore)***	COLOSSEUM I
1130 – 1210	**Lunch Symposium** *(Novartis)* Bronchodilator as the foundation of COPD pharmacotherapy [page ...] ***Prof Dr Paul Jones (UK)***	COLOSSEUM I

Daily Programme
6th July 2012, Friday (cont'd)

1210 – 1415	Lunch and Friday Prayers	
1415 – 1545	**SYMPOSIUM 2A: *Pulmonary Infection***	COLOSSEUM I
	Chairpersons: Dr Norhaya Mohd Razali / Dr Nor Adina Tajudin	
	Role of antibiotics in preventing exacerbations of bronchiectasis: What is the evidence? [page ...]	
	Assoc Prof Dr Pang Yong Kek (Malaysia)	
	Tuberculosis in special populations [page ...]	
	Dr Mat Zuki bin Mat Jaeb (Malaysia)	
	Pulmonary melioidosis [page ...]	
	Dr Chua Hock Hin (Malaysia)	
	SYMPOSIUM 2B: *Respiratory Disease in Primary Care Setting*	COLOSSEUM II
	Chairpersons: Assoc Prof Dr Fauzi Mohd Anshar / Dr Chua Keong Tiong	
	Interpretation of spirometry [page ...]	
	Assoc Prof Dr Tengku Saifudin Tengku Ismail (Malaysia)	
	Chronic cough: What can a primary physician do? [page ...]	
	Prof Dr Roslina Abdul Manap (Malaysia)	
	Successful multidisciplinary smoking cessation treatment in primary care setting [page ...]	
	Prof Dr Chanchai Sittipunt (Thailand)	
	SYMPOSIUM 2C: *Small Airway Diseases*	PETRA II
	Chairpersons: Dr Norzila Mohamed Zainudin / Dr Ahmad Fadzil B Abdullah	
	Asthma and small airway disease [page ...]	
	Assoc Prof Dr Jessie de Bruyne (Malaysia)	
	Hyperactive airway disease, are we clear about it? [page ...]	
	Prof Dr Anne B Chang (Australia)	
	Assessment of small airway disease [page ...]	
	Dr Rus Anida Awang (Malaysia)	
1545 – 1645	**Oral Presentations**	COLOSSEUM I
	Chairpersons: Assoc Prof Dr How Soon Hin / Assoc Prof Dr Tengku Saifudin Tengku Ismail	
	Concurrent Poster Presentations	COLOSSEUM II
	Chairpersons (Group 1) : Dr Mat Zuki bin Mat Jaeb / Dr Chua Keong Tiong	
	Chairpersons (Group 2) : Dr Hooi Lai Ngoh / Dr Asiah Kassim	
1645 – 1715	Tea	
1715 – 1815	**MTS AGM**	GIZA
1815 – 2200	**Dinner Symposium** *(MSD)*	COLOSSEUM II
1815 – 1900	Registration	
1900 – 1920	Asthma burden, perception and control in Malaysia	
	Prof Dr Roslina Abdul Manap (Malaysia)	
1920 – 2000	Improving asthma management: Considering both control trials & real world studies outcome	
	Prof Dr Johann Christian Virchow (Germany)	
2000 – 2200	Dinner	

Daily Programme
7th July 2012, Saturday

0700 – 0800	Registration	
	Meet the Professor Breakfast Session *Chairperson: Dr Hooi Lai Ngoh* Complex chronic co-morbidities of COPD [page ...] ***Prof Dr Leonardo M Fabbri (Italy)***	GIZA
0800 – 0840	**PLENARY 2** *Chairperson: Dato' Dr Hj Abdul Razak Muttalif* Approach to patients with pulmonary hypertension [page ...] ***Assoc Prof Dr Suree Sompradeekul (Thailand)***	COLOSSEUM I
0840 – 1010	**SYMPOSIUM 3A: *Thoracic Imaging*** *Chairpersons: Assoc Prof Dr Tengku Saifudin Tengku Ismail / Dr Rosalind Toh* Chest X-ray in common pulmonary disease [page ...] ***Dr Sharon Siaw Kho Na (Malaysia)*** PET/CT: The usefulness in thoracic malignancy [page ...] ***Dr Dharmendra Harichandra (Malaysia)*** Role of HRCT in diffuse lung parenchymal disease [page ...] ***Dr Marymol Koshy (Malaysia)***	COLOSSEUM I
	SYMPOSIUM 3B: *DPLD* *Chairpersons: Dr Wan Haniza Wan Mohamad / Dr Ashari Yunus* IPF: What's new? [page ...] ***Dr Felix Chua (UK)*** PAH: Management and follow up ***Assoc Prof Dr Suree Sompradeekul (Thailand)*** Connective tissue disease-related DPLD [page ...] ***Dr Felix Chua (UK)***	COLOSSEUM II
	SYMPOSIUM 3C: *Non-Cystic Fibrosis Bronchiectasis* *Chairpersons: Assoc Prof Dr Anna Marie Nathan / Dr Mariana Daud* Childhood bronchiectasis: Our local experience [page ...] ***Dr Asiah Kassim (Malaysia)*** Management of non CF bronchi ectasis: Evidence and practice [page ...] ***Dr Norzila Mohamed Zainudin (Malaysia)*** Pulmonary exacerbations and treatment of non-cystic fibrosis bronchiectasis [page ...] ***Prof Dr Anne B Chang (Australia)***	PETRA II
1010 – 1040	Tea	
1040 – 1120	**Morning Symposium** *(GlaxoSmithKline)* Asthma management ambitions and strategies ***Prof Dr Andrew Peter Greening (UK)***	COLOSSEUM I
1120 – 1220	**Adult Grand Round** *Chairpersons: Prof Dr Roslina Abdul Manap / Prof Dr Richard Loh Li Cher*	COLOSSEUM I
	Paediatric Grand Ward Round *Chairpersons: Assoc Prof Dr Anna Marie Nathan / Dr Mariana Daud*	COLOSSEUM II

Daily Programme
7th July 2012, Saturday (cont'd)

1220 – 1300	**Lunch Symposium** *(Sanofi Pasteur)* Benefits and effectiveness of administering pneumococcal polysaccharide vaccine with seasonal influenza vaccine ***Dr Frederick L Ruben (US)***	COLOSSEUM I
1300 – 1415	Lunch	
1415 – 1800	**HANDS-ON: *Thoracic Ultrasound*** *Chairpersons: Dr Tie Siew Teck / Assoc Prof Dr How Soon Hin*	COLOSSEUM I
1415 – 1430	Basic principles of ultrasound: What beginners need to know [page ...] ***Dr Tan Su Zet (Malaysia)***	
1430 – 1500	Ultrasonographic appearances of normal pleura, pleural effusions, pleural thickening, pneumothorax and pulmonary consolidation [page ...] ***Dr Tan Su Zet (Malaysia)***	
1500 – 1540	Role of ultrasound in pulmonary diseases – When and how I do it ***Prof Dr Gary Y C Lee (Australia)***	
1540 – 1600	Tea / Q and A	
1600 – 1700	Hands-on ***Dr Tan Su Zet (Malaysia) / Prof Dr Gary Y C Lee (Australia)***	
	COMPLIMENTARY TOUR	
1815 – 1900	**Meeting of Respiratory Medicine Subspecialty Trainers and Trainees** ***Prof Dr Liam Chong Kin (Malaysia)***	COLOSSEUM I
1900 – 2000	**Dinner Symposium** *(Takeda)* Roflumilast: A novel anti-inflammatory therapy for COPD patients [page ...] ***Prof Dr Leonardo M Fabbri (Italy)***	COLOSSEUM I
2000 – 2230	**GALA DINNER**	COLOSSEUM II
1930 – 2000	Arrival of delegates	
2000 – 2015	Speech by Prof Dr Roslina Abdul Manap, President, Malaysian Thoracic Society	
2015 – 2030	Speech by Dr Zuklifi Jantan, Sarawak State Health Director	
2030 – 2100	Dinner	
2100 – 2115	Announcement of winners of poster, oral paper presentation Speech by Dato' Dr Zainudin bin Md Zin, Chairman, Lung Foundation of Malaysia	
2130 – 2215	Dance and cultural performance	

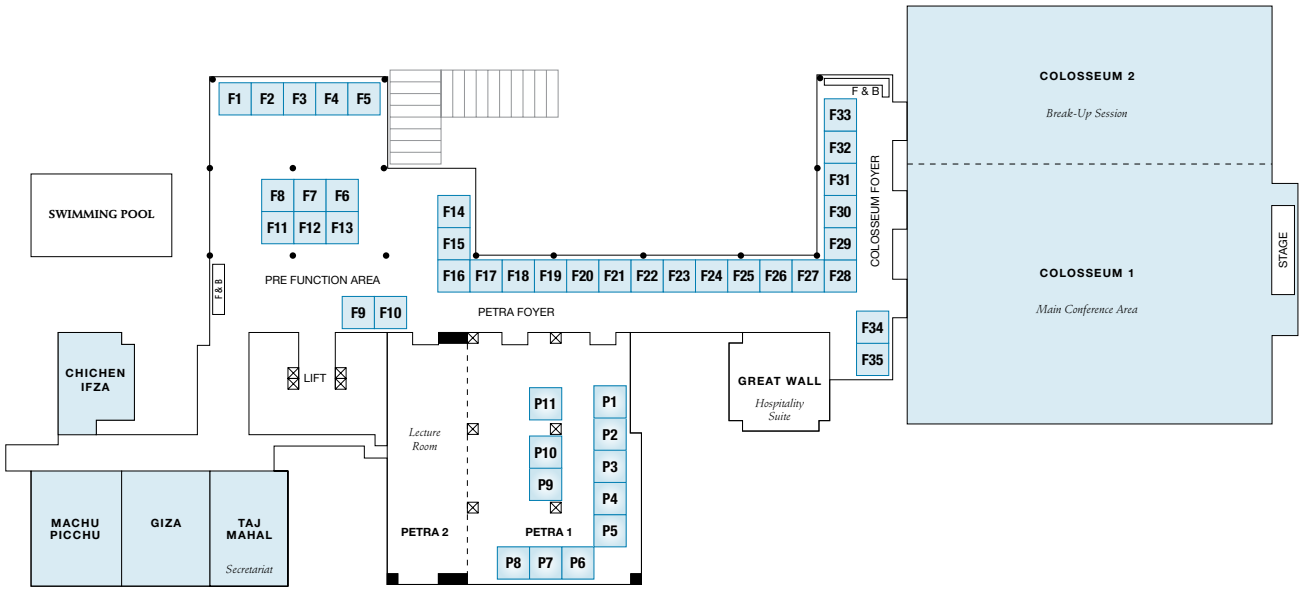
Daily Programme
8th July 2012, Sunday

0700 – 0800	**Meet the Professor Breakfast Session** *Chairperson: Dr Mat Zuki bin Mat Jaeb* How clinicians can start research and get published? [page ...] ***Prof Dr Gary Y C Lee (Australia)***	GIZA
0800 – 0840	**PLENARY 3** *Chairperson: Dato' Dr Zainudin Md Zin* Issue of MDR and XDRTB in Malaysia [page ...] ***Dato' Dr Hj Abdul Razak Muttalif (Malaysia)***	COLOSSEUM I
0840 – 1010	**SYMPOSIUM 4A: *Pleural Disease*** *Chairpersons: Dr Jamalul Azizi Abd Rahman / Assoc Prof Dr Fauzi Mohd Anshar* Management of parapneumonic effusion [page ...] ***Prof Dr Gary Y C Lee (Australia)*** TB empyema [page ...] ***Dr K Kannan (Malaysia)*** Management of trapped lung effusions [page ...] ***Prof Dr Gary Y C Lee (Australia)***	COLOSSEUM I
	SYMPOSIUM 4B: *Intensive Care and Pulmonary Emergency* *Chairpersons: Dr Lim Boon Khaw / Dr Wong Jyi Lin* Mechanical ventilation [page ...] ***Prof Dr Lee Pyng (Singapore)*** Assessment of critically ill patients [page ...] ***Dr Tai Li Ling (Malaysia)*** Invasive ventilation for COPD [page ...] ***Prof Dr Lee Pyng (Singapore)***	COLOSSEUM II
	SYMPOSIUM 4C: *Pneumonia And Its Suppurative Complications* *Chairpersons: Dr Asiah Kassim / Dr Rus Anida Awang* Complications of pneumonia – can we predict and prevent? [page ...] ***Assoc Prof Dr Hasniah Abdul Latif (Malaysia)*** Suppurative pneumonias and management options [page ...] ***Dr Mariana Daud (Malaysia)*** Outcome of suppurative pneumonia in children [page ...] ***Dr Ahmad Fadzil B Abdullah (Malaysia)***	PETRA II
1010 – 1040	Tea	
1040 – 1120	**Morning Symposium** *(Bayer)* A wind of change in AECOPD? [page ...] ***Prof Dr Richard Loh Li Cher (Malaysia)***	COLOSSEUM I
1120 – 1200	**Late Morning Symposium** *(Roche)* Adding anti-angiogenic agent in the management of advanced NSCLC – When and in whom ***Prof Dr Martin Reck (Germany)***	COLOSSEUM I

Daily Programme
8th July 2012, Sunday (cont'd)

1200 – 1300	**Debate** *Chairpersons: Dr Hooi Lai Ngoh / Dato' Dr Hj Abdul Razak Muttalif* INH prophylaxis: For all HIV patients? *DEBATERS: For the proposition : Dr Suresh Kumar Chidambaran (Malaysia)* *Against : Dato' Dr George Kutty Simon (Malaysia)*	COLOSSEUM I
1300	Closing and End	

Trade Exhibition



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F2	Janssen (a division of Johnson & Johnson Sdn Bhd)
F3, F4	Pfizer (Malaysia) Sdn Bhd
F5	Orient Europharma (M) Sdn Bhd
F6, F7, F9, F10, F12, F13	Novartis Corporation (M) Sdn Bhd
F8	Endodynamics (M) Sdn Bhd
F11	Eli Lilly (M) Sdn Bhd
F14	Insan Bakti Sdn Bhd
F15	Easmed Sdn Bhd
F16 to F19	Sanofi Pasteur
F20 to F23	Merck Sharp & Dohme
F24 to F27	AstraZeneca Sdn Bhd
F28 to F31	GlaxoSmithKline Pharmaceutical Sdn Bhd
F32	Bayer Co (Malaysia) Sdn Bhd
F33	Roche (Malaysia) Sdn Bhd
F34, F35	Nycomed : a Takeda Company

Booth Stand	Company
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P4	Ara Gemilang Saintifik Sdn Bhd
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P7, P8	Philips Healthcare
P9	Boston Scientific (Malaysia) Sdn Bhd
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NEW DEVELOPMENTS IN PHENOTYPING ASTHMA AND COPD: WHAT ARE THE IMPLICATIONS FOR COPD?

Paul Jones

St George's, University of London, UK

The trend across all of medicine is to use specific therapies that are more precisely targeted to each patient's needs. Currently the best examples lie in the field of oncology in which certain genotypes are associated with a better response to specific therapies. COPD and asthma are complex polygenetic diseases, so the emphasis has been to identify specific phenotypes.

In asthma a further development is the concept of Endotype – a contraction of 'endophenotype' – which is a subtype of disease defined functionally and pathologically by a molecular mechanism or by treatment response. There is clinical trial evidence to support this concept. Omalizumab – a monoclonal anti-IgE, is used in routine practice in defined groups of patients and lebrikizumab a monoclonal anti-IL13 appears to be more effective in patients with high levels of periostin – a matricellular protein. The only comparable analogy in COPD is the suggestion that patients with high levels of sputum eosinophils have a greater probability of response to inhaled corticosteroids.

In both asthma and COPD, descriptive methods such as principal component and cluster analysis have been used to identify patients groups that share a common set of disease characteristics. An alternative approach is to look at patients where expected relationship between disease parameters is not present – i.e. there appears to be a clinical paradox or inconsistency. For example, within COPD it is clear that airflow limitation, as measured by the FEV1, is only one factor that determines poor health; there is evidence that patients with better health but poor lung function appear to constitute a different phenotype from those who have poor health but better lung function.

The new GOLD assessment scheme, developed to provide a means of classifying patients for the purposes of treatment in routine practice, has some of the characteristics of a phenotyping system, since it classifies patients based on the level of their symptoms and the frequency of their exacerbations.

The challenge for those wishing to develop phenotyping systems will be to identify patient phenotypic characteristics that are independent of severity and are not just markers of disease progression. Nevertheless, it is clear that the days of treating all asthma and COPD patients has having the same type of disease will soon be behind us.

IS THERE ANY ROLE OF ICS IN COPD?

Lim Tow Keang

Department of Medicine, National University of Singapore, Singapore

The efficacy if inhaled corticosteroids (ICS) in the treatment of chronic obstructive pulmonary disease (COPD) have been evaluated in a large number of clinical trials. But its effectiveness remains in doubt. Concerns regarding serious adverse effects including mortality have emerged recently. In this symposium we will evaluate the impact of ICS on acute exacerbations, pneumonia and mortality in patients with COPD based on the evidence from randomized trials, meta-analyses and observational studies. The totality of evidence, at this point, suggests that, while the benefits of ICS treatment may have been overestimated, in the appropriate patients, they still outweigh the risks.

LUNG CANCER SCREENING

M Reck

Hospital Grosshansdorf, Grosshansdorf, Germany

Lung Cancer still represents the solide tumor with the highest mortality, most patients are diagnosed in an advanced/metastatic stage of disease and a curative treatment approach only is feasible in early stages of disease. Therefore there are several reasons to support an effective screening approach in Lung Cancer. While conventional x-ray imaging, sputum analysis or bronchoscopy techniques didn't prove to be valide screening instruments when they were used alone a number of feasibility studies suggested that low-dose CT scanning (LD CT) might be an attractive option for the early detection of lung cancer. While there was a high prevalence of benign pulmonary nodules the incidence of lung cancer was approximately 1% in the investigated group of volunteers, who were conventionally defined by age and smoking status of 20 to 30 pack years.

Recently the results of the first randomized screening trial (National Lung Cancer Screening Trial) were published. In the NLCST more than 52000 volunteers between 55 and 74 years with at least 30 pack years were screened either by conventional radiology or LD CT. In the LD CT arm more Lung Cancer cases (1060) compared to the conventional radiology arm (941) could be detected leading to more resections in the LD CT arm. In conclusion the Lung Cancer Mortality could be significantly reduced by 20% (p: 0.004) in the LD CT arm.

For integration into clinical practice the psychological and economical burden should be carefully balanced with the effective gain in overall survival. Ongoing screening trials might add information to the value of CT-screening while future screening approaches will try to combine LD CT with other screening techniques such as autofluorescence bronchoscopy.

Literature

National LungCancer Screening Research Team, N Engl J Med 2011.

PLEURODESIS: WHEN AND HOW TO DO IT

Fauzi Mohd Anshar

Department of Medicine, Hospital Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

Pleurodesis is derived from the Greek pleura and desis (binding together) to prevent reaccumulation of fluid or air in the pleural space. The common indications are malignant pleural effusion and pneumothorax; less commonly in benign recurrent pleural effusions. There are general principles to guide physicians as to when to perform pleurodesis in malignant pleural effusion and pneumothorax. For the former, one would look at patients' life expectancy, symptoms, the responsiveness of the underlying neoplasm to chemo- and radiotherapy and if pleurodesis is really appropriate when compared to long-term drainage. The indications for pleurodesis in pneumothorax is described in the latest edition of the British Thoracic guidelines in 2010 and depends on the type of pneumothorax, persistence of air leak and desirability to prevent recurrence. Once pleurodesis is decided, the physician decides on the methods, which can be surgical or medical. If patients decline surgical pleurodesis or is deemed unfit or inappropriate, medical pleurodesis is offered. It may be further divided into bedside (talc or chemical pleurodesis) or via medical thoracoscopy, also known as pleuroscopy. Talc has been proven to be the most cost-effective agent although rare cases of acute respiratory distress syndrome had been described in the literature. In certain cases of persistent air leak after lobar resection or pneumothorax, autologous blood patch pleurodesis has been described to be effective in sealing the air leak and allowing chest tube to be removed.

HOW HAS THE NEW STAGING SYSTEM AND NEW CLASSIFICATION OF ADENOCARCINOMA AFFECTED OUR MANAGEMENT OF PATIENTS WITH NSCLC?

M Reck

Hospital Grosshansdorf, Grosshansdorf, Germany

In the recent decades an appropriate classification of adenocarcinoma as well as distinguation from other histological entities has been of evolving importance due to the therapeutical impact of an correct classification. Besides differential efficacy of cytotoxic drugs like pemetrexed based on histology a variety of "druggable" oncogenic mutations with the predominant example of the activatin EGFR mutation are associated with the histology adenocarcinoma.

An international, interdisciplinary panel of experts from the European Respiratory Society, the American Thoracic society and the International Association for the Study of Lung Cancer performed a number of recommendations for an unique classification of adenocarcinoma. Key points of this approach were a precise and uniform definition of bronchioloalveolar carcinoma (BAC) which now is replaced by the terms adenocarcinoma in situ (AIS) and minimally invasive adenocarcinoma (MIA) based on specific histological patterns and the management of small tissue samples of advanced tumors guided by selected histological and molecular markers in order to minimize the number of tumors classified as "not other specified" (NOS) NSCLC.

Recently the prognostic impact of the new classification of adenocarcinoma was confirmed by a large group of German patients with resected adenocarcinoma favouring those patients with lepidic growth pattern followed by acinar growth pattern.

For the future correct staging of patients will be highly important to identify patients with good prognosis as well as enable adequate cytotoxic and targeted treatment of patients with advanced NSCLC.

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CHRONIC COUGH, IS IT ALWAYS INFECTIVE IN ORIGIN?

Anne B Chang

Queensland Children's Respiratory Centre, Royal Children's Hospital, Brisbane, Queensland, and Menzies School of Health Research, Darwin, Northern Territory, Australia

Chronic cough is one of the earliest signs of an underlying disease. Thus, along with the morbidity it causes, the underlying aetiology should be sought. When the chronic cough is wet (most young children do not have productive cough), the most common aetiology is protracted bacterial bronchitis (PBB).[1,2] In a multicentre study in Australia involving 346 newly referred children, the most common aetiology is PBB (41%).[3] PBB likely lies in a spectrum with radiological bronchiectasis at the other end of the spectrum.4

PBB is a pediatric condition clinically defined as (a) the presence of isolated chronic (>4 weeks) wet cough, (b) resolution of cough with antibiotic treatment and (c) absence of pointers suggestive of an alternative specific cause of cough. This condition has long been recognized by pediatric pulmonologists but has only been adequately characterized (by broncho-alveolar lavage and clinically) recently. PBB has been officially recognized by the cough guidelines of Australia, the Britain and the USA.

Children with PBB are typically young (median age-3years). Some parents may also report a 'wheeze' which is actually a rattle (reflective of airway secretions) and not a true wheeze.[4] Systemic effects are minimal or non-specific such as tiredness. In PBB the child's cough resolves only after a prolonged course (at least 10-14 days) of appropriate antibiotics.[5] Airway neutrophilia is present and common respiratory pathogens are found in the endobronchial infection; *H. Influenza*, *S. Pneumoniae* and *M. catarrhalis*. Their chest x-rays may be reported as 'normal' but usually show peribronchiolar changes. In some children, co-existent tracheobronchomalacia is present.[6] Children with PBB do not have an easily identifiable innate immune dysfunction but it remains unknown if those with recurrent PBB do.[7] Recurrent episodes of PBB and/or wet cough not resolving to simple therapies should prompt further evaluations of other causes of chronic wet cough (such as aspiration) as while most children with chronic wet cough have an airway infection, not all children do.

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MANAGEMENT OF COUGH AT THE PRIMARY CARE SETTING

Patrick Chan Wai Keong

Gleneagles Intan Medical Centre, Kuala Lumpur, Malaysia

Cough remains a very common symptom that is seen in the primary care setting. Nonetheless, it is a complex problem with multiple underlying causes often resulting in incorrect or missed diagnoses and inappropriate treatment.

The temporal definition of cough may be divided into acute which is of less than 3 weeks duration and chronic, more than 8 weeks duration. A cough that persists between 3 to 8 weeks may be considered subacute or a slowly resolving acute cough that may not warrant further investigation or treatment.

The majority of acute cough is due to a viral respiratory tract infection and does not require further investigations. The absence of high fever, tachypnoea or chest signs appear to rule out more sinister causes for the acute cough. There is no evidence that over the counter medications or antibiotics reduce acute cough symptoms and duration. However, macrolides should be considered early if pertussis is suspected.

The management of chronic cough relates to first attempting to make a specific diagnosis and then applying the appropriate and effective treatment for the cause.

CHRONIC COUGH AND TREATMENT OPTIONS

Anne B Chang

Queensland Children's Respiratory Centre, Royal Children's Hospital, Brisbane, Queensland, and Menzies School of Health Research, Darwin, Northern Territory, Australia

Chronic cough in children is variably defined (3-8 weeks). For careful reasons, the USA and Australian guidelines recommend 4 weeks as the definition. Irrespective of aetiology, cough stresses parents and affects their quality of life. Cough occurs as a result of a complex of neurophysiological and mechanical interactions within the respiratory system and as such it efficiency is vital to human homeostasis and well being. However it may also be an indicator of many respiratory illnesses. Doubts remain about the relative frequency of aetiology attributed to cough, the classification and appropriate management issues. Reasons for these include the lack of high quality research data, extrapolation of adult data to children and the promotion of non evidence based data by some. In this paper, current data on chronic cough in children is presented, based on available but limited evidence.

The management of cough in children should be aetiologically based. This requires that all children with cough should be carefully evaluated and managed differently to adults as the etiological factors and treatment in children are significantly different to that in adults. Children with chronic (>4 weeks) cough should be assessed for the presence of specific cough pointers and should have, as a minimum, a chest radiograph and spirometry (if age appropriate). In children with non-specific cough (dry cough in the absence of cough pointers), cough usually spontaneously resolve but children should be reviewed for emergence of specific cough pointers. In all children with cough, exacerbation factors such as environmental tobacco smoke (ETS) exposure should be sought and intervention options for cessation advised or initiated. Parental expectations and specific concerns of the parents should also be sought and addressed.

Treatment options relate to the underlying aetiology. There are few safe non-specific treatment options that are safe and evidence-based.

PATH FORWARD IN PERSONALISED TREATMENT: COST EFFECTIVENESS IN 1ST LINE TREATMENT OF ADVANCED NSCLC

Gilberto Lopes

John Hopkins Singapore, International Medical Centre, Tan Tock Seng Hospital, Singapore

Targeted agents and individualized treatment in thoracic oncology have started to improve the prognosis of patients with advanced non-small cell lung cancer. These new technologies however come with high costs and physicians, patients and health care systems must use limited resources in the most cost-effective manner possible. In this talk, Dr. Lopes will discuss the current standard options in the treatment of advanced lung cancer and their cost-effectiveness.

BRONCHODILATOR AS THE FOUNDATION OF COPD PHARMACOTHERAPY

Paul Jones

St George's, University of London, UK

COPD is characterized by loss of alveolar tissue (emphysema) and airway wall narrowing. There is currently no treatment for emphysema and although it has been shown that inhaled corticosteroids together with long-acting beta2-agonist (LABA) reduce airway wall inflammation there is currently no evidence that this treatment affects airway wall remodeling in COPD. Bronchodilator therapy currently provides the mainstay for treatment in COPD by reducing bronchoconstriction, either by blocking vagal motor tone (e.g. anti-muscarinic agents), or through a more direct effect on the airway smooth muscle (e.g. theophyllines and beta2-agonists).

Whilst the benefits of bronchodilatation have been known for a long time, only recently has there been strong evidence to show a relationship between improvement in FEV1 and improvement in important clinical outcomes such as breathlessness, heath status, rescue medication use and exacerbations.

Slow-release aminophylline is a long acting agent, but its poor therapeutic ratio limits its use, so the development of twice-daily long-acting LABAs provided the first major pharmacological improvement in the management of COPD. The subsequent introduction of a true 24-hour long-acting bronchodilator in the form of tiotropium, a long-acting anti-muscarinic (LAMA), was the next major step forward. More recently a 24-hour acting beta2-agonist (indacaterol) has become available. In double-blind studies, this agent showed demonstrable advantages over the older twice-daily LABAs (salmeterol and formoterol) in terms of improved dyspnoea and health status. There is also some evidence of greater symptomatic benefit compared to tiotropium.

On the horizon are combinations of once daily LABA and LAMA. These have the potential to provide physicians with a treatment that will maximize the benefits bronchodilator therapy in COPD. The early indications are hopeful.

ROLES OF ANTIBIOTICS IN PREVENTING EXACERBATIONS OF BRONCHIECTASIS: WHAT IS THE EVIDENCE?

Pang Yong Kek

Respiratory Unit, Medical Department, University Malaya Medical Centre, Kuala Lumpur, Malaysia

What is bronchiectasis?

Bronchiectasis is characterised by abnormal dilation and distortion of proximal and medium-sized bronchi (>2 mm in diameter) caused by weakening or destruction of the muscular and elastic components of the bronchial walls.

It could be divided into congenital form and acquired form. Most cases belong to the acquired form. The pathogenesis of bronchiectasis may be due to the following:

- Persistent/recurrent airway infections
- Impaired bronchial drainage
- Bronchial obstruction
- Defect in host defense
- Autoimmune disease

In many cases, persistent airway infection served to perpetuate the bronchial inflammation and destruction.

Why exacerbations should be treated?

Intermittently, these patients experience a rapid deterioration of symptoms due to worsening of bronchial infection (bronchiectasis exacerbation). These episodes may further degenerate into acute respiratory failure. In addition, the local infection may "spill over" into the blood stream resulting in systemic upset. Some may be complicated by lung parenchyma infection (pneumonia).

Each exacerbation will not only causes more airway damage, it also compromises patients' quality of life, long-term lung function and endangering their lifes.

What are the roles of antibiotics and the scientific evidence?

There is no randomised placebo controlled trial on the efficacy of antibiotic regimen in bronchiectasis exacerbations. However, several antibiotics regimens have been compared in a number of randomised studies. Although these studies are heterogenous in nature, they seem to suggest that treatment success (defined by mucoid conversion and bacteria clearance) is achievable with high dose antibiotics.

The second question is could we prevent future exacerbations? What are the roles of antibiotic in this regard?

This bring us a few clinical scenarios for consideration

- Is there any benefit of long-term antibiotic therapy on patients with chronic symptoms – with/without frequent exacerbations
- What is the efficacy and evidence to support the use of several modes of antibiotic administration – oral versus intravenous; and systemic versus nebulised mode..
- Should long term antibiotic be administered in a continuous, cyclical or rotational manner?

All these will be discussed in this lecture.

TUBERCULOSIS IN SPECIAL POPULATIONS

Mat Zuki bin Mat Jaeb

Unit Respiratory, Department of Medicine, Hospital Raja Perempuan Zainab II, Kota Bahru, Kelantan, Malaysia

Appropriate management of Tuberculosis in certain group of patients such as pregnant and lactating lady, patients with liver diseases and renal failure is very important. They require additional attention as the treatment regimen as well as duration needs to be modified.

Isoniazid, Rifampcin and Ethambutol have been well studied and are considered safe in pregnancy; however streptomycin and other aminoglycosides should be avoided in pregnancy due to risk of ototoxicity to the foetus. Although there is a lack of controlled data on the safety during pregnancy, many international guidelines recommend pyrazinamide as part of the treatment regimen and it is safe.

A breastfeeding woman who has TB should receive a full course of TB treatment with first line anti-TB drugs as only small amount and non-significant concentrations of these drugs presence in breast milk which do not produce toxic affects to the baby.

Isoniazid, Rifampicin, Pyrazinamide, Ethionamide and Para Aminosalicylic acid (PAS) are potentially hepatotoxic; however other drugs such as Streptomycin and other Aminoglycosides, Ethambutol, Cycloserine and Quinolones are non- hepatotoxic.

Standard anti-Tb drugs can be given to patients with stable liver disease provided there is no evidence of chronic liver disease and close monitoring is carried out. In patients with unstable or advanced liver disease, liver function tests should be done at the start of treatment and decision on choice of anti-TB should be done carefully. Choices of treatment depends on severity of liver disease, for example if serum alanine aminotransferase level is more than 3 times normal before the initiation of treatment, two hepatotoxic drugs such as Isoniazid and Rifampicin plus Ethambutol for 9 months or Streptomycin, Rifampicin, Isoniazid plus Ethambutol for 2 months followed by Isoniazid and Rifampicin for 6 months are acceptable choices. In more severe liver diseases, regimen with less hepatotoxic drugs plus Fluoroquinolones may be given with longer duration. Frequent clinical and liver enzymes monitoring are necessary. The Expert should be consulted in treating TB patients with advanced or unstable liver disease.

Isoniazid and Rifampicin are eliminated by biliary excretion whereas Ethambutol and metabolites of Pyrazinamide are significantly excreted by kidney. Therefore doses of PZA and Ethambutol should be adjusted in severe renal failure. Three times per week administration of these two drugs at 25 mg/kg for PZA and 15 mg/kg for Ethambutol given after dialysis are recommended. Pyridoxine should also be given to prevent peripheral neuropathy. Because of an increased risk of nephrotoxicity and ototoxicity, Aminoglycosides should be avoided in patients with renal failure.

Treating TB patients with Human Immunodeficiency Virus poses great challenge. Treatment related adverse effect and drug-drug interaction should be anticipated in this population and appropriate action should be taken.

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PULMONARY MELIOIDOSIS

Chua Hock Hin

Kuching, Sarawak

Melioidosis is an infectious disease caused by *Burkholderia pseudomallei*. It is endemic in Southeast Asia and northern Australia. Pneumonia is one of the commonest presenting feature, which can be primary or secondary. Clinical presentation may be acute, subacute or chronic; with clinical spectrum ranging from acute mild respiratory illness to pneumonia that rapidly progress to septic shock and death as well as chronic form that mimics pulmonary tuberculosis. Radiological findings can range from localized patchy alveolar infiltration that commonly localized in the upper lobe to bilateral diffuse patchy alveolar infiltration to multi-lobar infiltration or mass like lesion etc. Mortality rate of acute pulmonary melioidosis as a result of respiratory failure and septic shock are 20%.The gold standard of diagnosis is culture and isolation of patient's sample which may take 3 days or longer. In view of this, it is important to suspect pulmonary melioidosis in patients presented with background history of farming and co-morbidities like diabetes mellitus, chronic alcoholic etc. and start empirical antibiotic therapy of either ceftazidime or carbapenems. After the acute phase, patient will need to be further treated for another 3-6 months with combination of co-tromoxazole and doxycycline.

INTERPRETATION OF SPIROMETRY

Tengku Saifudin Tengku Ismail
UiTM

1. Is the effort good quality?
   - Spirograms and FV loop tracing on top of each other
   - Look at acceptable criteria for within and between manoeuvre (1) –

     Within-manoeuvre criteria

     Acceptable spirograms have a good start, show satisfactory exhalation (duration of 6 seconds) and are free from artefacts such as cough, early termination, leak, obstructed mouthpiece and effort that is not maximal throughout.

     Between-manoeuvre criteria

     After three acceptable spirograms have been obtained, apply the following tests
     The two largest values of FVC must be within 0.150 L of each other
     The two largest values of FEV1 must be within 0.150 L of each other
     If both of these criteria are met, the test session may be concluded
     If both of these criteria are not met, continue testing (maximum 8 tests or subject cannot continue)
2. Look at the shape of the FV loop and spirograms
3. Interpret the spirometry using the 4 steps (2)*
4. Summarise the findings – normal/obstructive/restrictive/mixed defect, response to BD
5. Discuss the possible diagnoses based on the clinical history and spirometry results

*Step 1

Examine the Forced Expiratory Vital Capacity (FVC).
Is it normal? If so, any significant restriction ruled out.
Is it reduced? If so, could be either obstruction or restriction.

Step 2

Examine the Forced Expiratory Volume in 1 second (FEV1).
Is it normal? If so, any significant obstruction or restriction is ruled out.
Is it reduced? If so, can be due to either obstructive or restrictive disease and thus the FEV1/FVC ratio needs to be evaluated.

Step 3

Examine the FEV1/FVC ratio.
If ratio is less than 70-75%, an obstructive process is present.
Normal ratio excludes obstructive process.
Ratio is normal or increased in a pure restrictive process. However a reduced Total Lung Capacity (TLC) is required to confirm restrictive disease

Step 4

Examine the response to bronchodilators.
Is the response increased? – FEV1 or FVC increased by 12% and 200ml.

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CHRONIC COUGH: WHAT CAN A PRIMARY PHYSICIAN DO?

Roslina A Manap

Department of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Cough is the most common presenting symptom in primary practice. Sub-acute cough is defined as cough persisting for 3 to 8 weeks and is most often self-limited. Chronic cough as that persisting for more than 8 weeks and may provide significant challenges for effective evaluation and management. The difficulty lies in determining the underlying cause of cough, as some "aetiologies" are syndromes without accurate diagnostic tests. A careful history, along with selected therapeutic trials and investigations establish the cause in over 90% of cases; often more than one condition is simultaneously present. Prospective studies (largely in countries with a low prevalence of tuberculosis) have shown that upper airway cough syndrome (UACS), previously referred to as postnasal drip syndrome (PNDS), asthma and gastroesophageal reflux disease (GERD) account for chronic cough in more than 90% of immunocompetent, non-smoking patients with normal chest radiograph findings.

Initial evaluation including history and physical examination should be performed, with particular attention paid to the possibility of a post-infectious aetiology. If the patient has been on an ACE inhibitor, this should be discontinued. If significant systemic symptoms such as weight loss, prolonged fever or haemoptysis are present, a chest radiograph should be arranged promptly. Therapy is started based on clues from the initial evaluation, eg. empiric therapy for postnasal drip with a first generation antihistamine-decongestant combination. If allergy is suspected, then topical nasal glucocorticoid should be considered.

If there is no improvement after 2-3 weeks of empiric therapy for postnasal drip, then pre- and post-bronchodilator spirometry or peak flow meter readings should be performed where available. The patient is then treated with bronchodilators and/or inhaled glucocorticoids. If the cough remains problematic, the patient should be treated empirically for gastroesophageal reflux with a proton pump inhibitor and with appropriate lifestyle and dietary modifications. Referral to a chest physician is indicated for patients with chronic cough that remains undiagnosed or unresolved.

SUCCESSFUL MULTIDISCIPLINARY SMOKING CESSATION TREATMENT IN PRIMARY CARE SETTING

Chanchai Sittipunt

Division of Pulmonary and Critical, Care Medicine, Department of Internal Medicine, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Smoking is still a major health problem in Thailand despite aggressive anti-tobacco interventions in the past 20 years. The current smoking prevalence in Thai population in year 2011(GATS survey) is still high at 26.9%. Only 36.7% of smokers have tried to quit smoking in the past 12 months. Tobacco cessation interventions have been shown to be effective in helping smokers to quit smoking. WHO report on the Global Tobacco Epidemic recommends 6 strategies to strengthen the implementation of tobacco control (MPOWER) and one of six strategies is "Offer help to quit tobacco use". But survey in year 2007 in Thailand showed that only 3.4% of Thai smokers who attempted to quit had received smoking cessation treatment. To develop an effective smoking cessation treatment program is essential in tobacco control policy in Thailand.

Three types of smoking cessation interventions that should be considered is 1) tobacco cessation advice incorporated into primary healthcare service 2) easy accessible and free quit helplines 3) access to low cost pharmacological therapy. In Thailand, there were obstacles in setting up smoking cessation in primary care setting such as lack of time and commitment from primary care physicians, practical treatment guideline was not available, health care provides did not have confidence in smoking cessation treatment and pharmacologic treatment was not available. The Thai Health Professional Alliance against Tobacco (THPAAT) was founded in 2005 with financial support from the Thai Health Promotion Foundation (THPF) with aim to help developing smoking cessation system in every level of treatment. Process to implement smoking cessation in primary health care setting by AWAKE model was initiated (A: attitude change, W: routine work, A: assist, K:knowledge management, E: expansion of service). THPAAT has developed first national guideline for smoking cessation treatment in 2010. The easy smoking cessation clinic model (Smart Quit Clinic) for primary care setting was developed and implemented in 2010 with more than 170 hospitals participated in year 2012. The easy smoking cessation clinic consists of easy smoking cessation guideline, educational and supporting system for health care providers, online registration and data collection, and providing of smoking cessation medications. We have collected data from more than 4,000 smokers participated in these smoking cessation clinics which shown that success rate was highest in smokers received smoking cessation medications treatment. Free Thai national quit-line also was established and operated since 2009.

To develop and operate effective smoking cessation program in primary care setting is very important and also challenging in Thailand. Multidisciplinary approaches and support are essential in establishing effective and sustainable services. Integrating smoking cessation into routine work and providing essential supports and incentives are important success factors.

ASTHMA AND SMALL AIRWAY DISEASE

Jessie A de Bruyne

Department of Paediatrics, University of Malaya, Kuala Lumpur, Malaysia

Asthma was originally believed to be and inflammatory process involving the central airways. However, small airways have been shown to be implicated in asthma contributing to its pathogenesis. These are the more distal airways measuring less than 2mm in diameter with no cartilage and glands and incudes the alveoli and parenchyma. Small airway involvement in asthma has been demonstrated in various ways.

Bronchial biopsies show that inflammatory changes occur throughout the bronchial tree. There is increase in eosinophils and increased wall thickness, together with increased density of inflammatory markers all the way to the distal airways. The inflammation at distal sites has been described as more severe than large airway inflammation.

Pulmonary function tests have also shown distal airway disease in asthma. Whereas, FEV1 and FEV1/FVC are most often measured, FEF 25-75% is a better demonstrator of distal airway disease. Pulmonary function abnormalities can be difficult to demonstrate in children.

High resolution CT scanning can assess morphological changes of air trapping and regional hyperinflation in small airways.

The realization of the involvement of the small airways has led to the search for new therapeutic manoeuvres targeting the small airways - these include new formulations of current medication, for example, those producing extra-fine aerosols, with better deposition in the distal airways. This was a happy finding in the transition from chlorofluorocarbon (CFC) to hydrofluoroalkane (HFA) carriers. Slowing down flow rate also seems to encourage distal airway deposition.

HYPERACTIVE AIRWAY DISEASE, ARE WE CLEAR ABOUT IT?

Anne B Chang

Queensland Children's Respiratory Centre, Royal Children's Hospital, Brisbane, Queensland, and Menzies School of Health Research, Darwin, Northern Territory, Australia

The concept of hyperactive airways has been associated with asthma, reactive airway disease, reactive airway disease syndrome, wheezy bronchitis, presence of airway hyper-responsiveness (by objective testing) or hypersensitive cough syndrome. For most, hyperactive airways refer to an asthma type response which has been recognized for decades.[1]

Like the definition of asthma, it means different things to different people. This is further complicated by the many non-asthma reasons for presence of airway hyper-responsiveness that is influenced by type of tests (such as direct vs indirect challenges), age of child, presence of airway inflammation, obesity, etc. Further, misdiagnosis of 'hyperactive airways' is not uncommon.

1. So what's in a name? In this presentation, a discussion on these different concepts will be discussed. Clinicians use the term very loosely as it is convenient. While some have called for the name to be made obsolete,[2] it continues remain clinically used, particularly in the context of the increasingly complex phenotypes advocated by some for paediatric asthma.

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ASSESSMENT OF SMALL AIRWAY DISEASE

Rus Anida Awang

Hospital Pulau Pinang, Penang, Malaysia

A proper definition of small airway disease is still lacking, and neither a widely accepted biomarker nor a functional parameter to assess small airway abnormalities. Generally small airways are peripheral membranous bronchioles < 2 mm in diameter. This consist of bronchioles that do not contain cartilage and usually contain mucus-secreting glands in their walls (extending from approximately generation 8 to 14) that purely conduct air with respiratory bronchioles containing alveoli in their walls. Respiratory bronchioles communicate directly with alveolar ducts and are in the range of 0.5 mm or less in diameter. Both types of bronchioles have ciliated cell-lining epithelium, which becomes progressively flatter in the distal airways. Bronchioles are, along with the pulmonary artery branches and lymphatic vessels, wrapped by a connective tissue sheath and located in the centri-lobular zone.

Chronic respiratory illnesses in children that may affect the small airways are asthma and bronchiolitis. Histologic studies have demonstrated that asthma affects both the large and the small airways. Bronchiolitis is an inflammatory and fibrosing disorder, centred in and around the membranous and/or respiratory bronchioles, sparing a considerable portion of the other parenchymal structures and usually with a mild involvement of the larger airways.

The small airway is a difficult anatomic area to study because of its relative inaccessibility. Several methods have been proposed and used to investigate this region of the lung, including complex and sometimes invasive techniques. Many attempts have been made to validate a standardized method to selectively measure small airway impairment. This method has to be reproducible and reliable, should be applicable in clinical practice, and should correlate with pathology and with clinical outcomes. All these requirements certainly make searching for this new 'gold standard' a difficult task.

We will discuss the pros and cons of each of the investigation techniques used to assess the small airways e.g, lung function test, nitrogen wash out, inflammatory markers, transbronchial biopsy and imaging techniques.

COMPLEX CHRONIC CO-MORBIDITIES OF COPD

Leonardo M Fabbri

Department of Oncology Haematology and Respiratory Diseases, Policlinic of Modena, University of Modena and Reggio Emilia

Chronic obstructive pulmonary disease (COPD) is a syndrome characterised by poorly reversible airflow limitation that is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases, particularly cigarette smoke. Cigarette smoking, the major risk factor for COPD, causes not only airway and lung inflammation, but also systemic effects, such as systemic cellular and humoral inflammation, oxidative stress, striking changes of vasomotor and endothelial function, and enhanced circulating concentrations of several pro-coagulant factors. These systemic effects of smoking could substantially contribute to the development of chronic diseases, other than COPD, for example cardiovascular diseases, metabolic disorders, and some cancers that are induced by smoking in combination with or without other risk factors, such as hyper-lipidemia, obesity, and hypertension. The most common co-morbidities described in association with COPD are hypertension, diabetes, coronary-artery disease, heart failure, pulmonary infections, cancer, and pulmonary vascular disease. Chronic co-morbid diseases affect health outcomes in COPD.

Chronic obstructive pulmonary disease (COPD) is characterised by poorly reversible airflow limitation that is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases, particularly cigarette smoke[1, 2]. A diagnosis of COPD should be considered in any current or previous smoker older than 40 years who has symptoms of cough, sputum production, or dyspnoea[1].

Cigarette smoking, the major risk factor for COPD, causes not only airway and lung inflammation, but also systemic effects, such as systemic cellular and humoral inflammation, oxidative stress, striking changes of vasomotor and endothelial function, and enhanced circulating concentrations of several pro-coagulant factors[2-5]. These systemic effects of smoking could substantially contribute to the development of chronic diseases, other than COPD, for example cardiovascular diseases, metabolic disorders, and some cancers that are induced by smoking in combination with or without other risk factors, such as hyperlipidaemia, obesity, and hypertension. Potentially, the common mechanism by which major risk factors lead to chronic disease is systemic inflammation[2-6]. Such chronic diseases can develop either with COPD or independently of the disorder[6-8]. The most common co-morbidities described in association with COPD are hypertension, diabetes, coronary-artery disease, heart failure, pulmonary infections, cancer, and pulmonary vascular disease[9]. Chronic co-morbid diseases affect health outcomes in COPD[9,10].

Patients with COPD frequently do not die of COPD but of co-morbid conditions. Progressive respiratory failure accounts for only approximately one third of the COPD-related mortality; therefore, factors other than progression of lung disease must play a substantial role[1].

A long-standing history of tobacco abuse in COPD patients may increase the risk for co-morbidities such as cardiovascular disease and cancer. Some of the most common co-morbid conditions that have been described in association with COPD include hypertension and diabetes, coronary artery disease, heart failure, cancer, and vascular disease[6, 9].

Co-morbidities may be defined as the other serious diseases and chronic medical conditions that afflict persons who have COPD. Chronic airflow obstruction clearly has a devastating effect on health status, healthcare costs and overall prognosis; this has been demonstrated in hundreds of studies over the last 40 yrs. Respiratory specialists tend to focus on the pulmonary abnormalities of COPD and to neglect the major contribution that co-morbid conditions have on outcomes. In fact, as in other chronic diseases, randomised clinical trials conducted in COPD patients exclude persons with

serious co-morbid conditions, strongly limiting the relevance of results for the general population. However, for every smoker who succumbs to COPD, 3 others die of smoking-related cardiovascular disease, cancer, or some other non-respiratory related illness. Therefore, co-morbidities are highly likely to affect health outcomes in COPD, and COPD patients are more likely to die of cardiovascular complications or cancer than from respiratory failure. Interestingly, even relatively small reductions in lung function increase the risk for ventricular arrhythmias, coronary events and stroke, pulmonary embolism, and cardiovascular mortality independent of the effects of smoking, suggesting that extra-pulmonary conditions associated with airflow limitation might be even more relevant for patients' severity of symptoms, quality of life and prognosis than the pulmonary abnormalities. Indeed, a 10% decrease in FEV1 among COPD patients increases the cardiovascular event rate by approximately 30% (19) even if the mechanism(s) linking COPD with cardiovascular events is (are) not very clear.

The number of pre-existing co-morbidities in patients with COPD has been associated with increased in-hospital mortality in cross-sectional and perspective studi[6, 9]. Co-morbid conditions that have been associated with an increased mortality risk in COPD patients include chronic renal failure, cor pulmonale, and pulmonary vascular disease; underlying heart diseases have not been consistently associated with a higher mortality risk. Treatments for COPD are likely to have effects on these co-morbid conditions, both positively and negatively, so they must be described and followed carefully both in randomised clinical trials and in observational cohort studies.

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APPROACH TO PATIENTS WITH PULMONARY HYPERTENSION

Suree Sompradeekul

Division of Respiratory Disease and Tuberculosis, Department of Medicine,
Siriraj Hospital Mahidol University, Bangkok, Thailand

Pulmonary hypertension(PH) has been defined as a condition with a mean pulmonary artery pressure (mPAP) of 25 mmHg or more at rest as assessed by right heart catheterization (RHC)[1]. PH was classified into 5 groups according to World Health Organization (WHO) classification[2] as group I pulmonary arterial hypertension (PAH), group II PH due to left heart disease, group III PH due to lung diseases and/or hypoxia, group IV chronic thromboembolic pulmonary hypertension (CTEPH) and group V PH with unclear and/or multifactorial mechanisms. PH group 1 or PAH is defined as mPAP of 25 mmHg or more at rest with pulmonary capillary wedge pressure (PCWP) of less than 15 mmHg by RHC. Patients with PH usually presented with progressive dyspnea with signs of right heart failure. There are series of investigations that should be done to classify those patients into WHO PH group because the treatment is based on the group classification.

Echocardiography plays an important role in diagnosis of PH, both estimation of PAP and identifing other cardiac diseases e.g. cardiomyopathy, valvular disease, intracardiac shunt. Chest radiography +/- high-resolution computerized tomography(HRCT), arterial blood gases, pulmonary function studies, and/or polysomnography used to identify underlying lung diseases. Ventilation/perfusion lung scan or CT angiography required in all PH cases to rule out CTEPH which is the condition that has curative treatment. Blood test e.g. anti-HIV antibody, antinuclear-antibody, liver function test may help identifying PAH-associated with those conditions. Once PAH was diagnosed, right heart catheterization (RHC) should be done to confirm diagnosis, assess severity and prognosis. In addition, acute vasoreactivity test should be performed in idiopathic PAH (IPAH) patients who might benefit from long-term calcium channel blocker (CCB) use.

CHEST X-RAY IN COMMON PULMONARY DISEASE

Sharon Siaw Kho Na

Radiology Department, Sibu Hospital, Sarawak, Malaysia

Chest Radiography is easily available in all healthcare centres and is the most useful investigation for pulmonary disease. However it is not easy to interpret as it is an image composing of shadows and with superimposition of structures. Nevertheless, by analyzing the varied density and configuration of the shadows, many diseases can be diagnosed. The various appearance of diseases on chest radiographs is discussed with focus on differentiating signs.

PET/CT: THE USEFULNESS IN THORACIC MALIGNANCY

Dharmendra Harichandra

Sime Darby Medical Centre Subang Jaya, Subang Jaya, Selangor, Malaysia

The utilization of FDG PET/CT in the diagnosis , staging and monitoring of patients with thoracic malignancies has been firmly established since the beginning of the millennium. An FDG PET/CT scan has been proven useful in identifying patients who would benefit the most from surgery. For non-surgical candidates, a PET/CT scan offers a means of monitoring response to a growing list of chemotherapy and radiotherapy options that we currently have in our armamentarium . An intimate knowledge of the disease at the molecular level allows treatment modifications which will ultimately translate into better survival rate and the quality of life of patients. However promising PET/CT scans appear to be at present, they are also limitations that beguile accurate assessment of various thoracic malignancies. The challenge is to optimize the use of functional scans while navigating the myriad of variables that encompasses a patient who is diagnosed with a thoracic malignancy.

ROLE OF HRCT IN DIFFUSE LUNG PARENCHYMAL DISEASE

Marymol Koshy

Faculty of Medicine, Universiti Teknologi MARA, Selangor, Malaysia

For decades radiologists have tried to accurately diagnose diffuse lung parenchymal disease (DLPD) using chest radiographs. However despite trying to refine this art through experience and knowledge, even the best radiologists are restricted by the inherent limitations of the plain chest radiograph. The limitation of the chest radiograph in the eva luation of DLPD is mainly due to superimposition of structures and its poor spatial resolution. Since the advent of Multi-dector computed tomography (MDCT), high-resolution computed tomography (HRCT) has become a well-established and novel method in assessing DLPD. HRCT allows detailed analyses of the lung parenchyma and is the only imaging modality that allows the in- vivo visua lization of the secondary pulmonary lobule.

The advantage of HRCT is due to its technique. This technique can be performed on any modern CT Scanner. The basic premise is to maximize spatial resolution by using the thinnest collimation and a high spatial frequency algorithm. The technique involves obtaining very thin (1-2mm) axial sections of the chest. The sections are spaced 10-15mm apart. The sections are processed using 'bone' algorithm to enhance the edges. MDCT allows reformatting and viewing the scan in coronal and sagittal modes. Contrast should not be given for HRCT examination. The use of proper settings for window level (-500 to -750) and width (1000 to 1500) is also important for correct diagnosis.

A multidisciplinary approach composing of pulmonologists, radiologists, and pathologists is important in making the final correct diagnosis of diffuse lung disease. Knowledge and understanding of HRCT anatomy is also important as it allow the pathological process to be placed in the appropriate anatomical compartment. HRCT in good hands is likely to yield very useful information regarding diffuse parenchymal lung disease.

IPF: WHAT'S NEW?

Felix Chua

The London Clinic Consulting Rooms, London, England

A number of drug trials in recent years have demonstrated that realistic treatment for this condition remains elusive. Nonetheless, such data help to inform management approaches for such patients outside the trial setting and encourage standardisation of investigative and treatment strategies. In this lecture, the findings of the main trials from the last 5 years will be reviewed and current knowledge of IPF discussed.

CONNECTIVE TISSUE DISEASE-RELATED DPLD

Felix Chua

The London Clinic Consulting Rooms, London, England

Contemporary understanding of CTD-ILD, with particular regard to its pathophysiological aspects, radiological phenotypes and potential for treatment response will be discussed. Attention will also be drawn to undifferentiated connective tissue disease (UCTD) as a pathological entity and the use of anti-biologic agents in managing CTD-ILD.

CHILDHOOD BRONCHIECTASIS: OUR LOCAL EXPERIENCE

Asiah Kassim

Institute of Paediatric, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Bronchiectasis in children is an uncommon condition in developed countries. In London, hospitalization rate for bronchiectasis fall from 48 to 10 per 10, 000 between 1952 to 1960. The incidence among Maori and Islanders in Auckland was estimated to be one in six thousands. Estimated incidence among Aboriginal children in Australia is 14.7 per 1000. Cause of bronchiectasis in developed countries is following cystic fibrosis.

In Malaysia, exact incidence is unknown. Most of the Bronchiectasis patients in Institut Pediatrik, Hospital Kuala Lumpur were Malays. Several causes of bronchiectasis in children were identified especially post-infection of the lung by pathogen like Adenovirus and Tuberculosis. Another group of patients is patients with recurrent chest infections due to primary immune-deficiency like X-linked hypogammaglobulinemia and common variable immune-deficiency. Other cause of bronchiectasis is recurrent aspiration pneumonia. Most of the patients were diagnosed late after their first presentation especially patients with immune-deficiency.

Most common radiograph finding was airway dilatation involving both parts of the lungs. Small group of patients also has cystic dilatation with localized lesion.

Although there is significant respiratory morbidities due to bronchiectasis, the patients survived the childhood age. Mortality is associated with underlying immune-deficiency.

MANAGEMENT OF NON CF BRONCHI ECTASIS: EVIDENCE AND PRACTICE

Norzila Mohamed Zainudin

Respiratory Unit, Institut zpediatrik, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Bronchiectasis was first described in 1819 by Rene' Laennec who observed this condition in patients who suffered from Tuberculosis and post pneumonia during the pre antibiotic era.

Bronchiectasis is characterized by dilatation of the bronchi which can be localized or diffuse. The bronchial dilatation is due to structural defect in the bronchial wall, an effect of abnormal airway pressure on the bronchial wall or damage to the airway elastic tissue and cartilage as a result of bronchial wall inflammation.

The diagnosis of non-CF bronchiectasis should be considered in children with productive cough more than six weeks, in children with chronic persistent cough of whom diagnosis was made but do not respond to the current treatment and in children with recurrent cough who respond to recurrent courses of antibiotics. Common conditions such as tuberculosis, chronic aspiration syndromes, immunodeficiency syndromes, primary ciliary dyskinesia and airway abnormality need to be excluded.

Although chest radiograph can assist in the diagnosis, normal findings do not exclude bronchi ectasis HRCT reports a sensitivity and specificity of > 90% in making a diagnosis of bronchiectasis. Bronchoscopy is helpful in assessing the airway as well as performing bronchoalveolar lavage for sampling of airway secretions and in chronic aspiration.

In addition to treating the underlying a etiology of bronchiectasis, the main therapy is towards reducing airway secretions and facilitating removal of secretions through cough. Pharmacotherapy is used to improve mucus clearance and bronchodilatation. Antibiotics are used to prevent and treat recurrent chest infection based on sputum culture. Macrolide antibiotics has

an anti- inflammatory property given triweekly. Chest physiotherapy is important to assist removal of secretions by facilitating cough. Nebulized hypertonic saline may be useful to assist airway clearance of secretion.

Pulmonary segmental resection may be useful if the disease is severe and localized. Transplantation may be an option of the disease is severe and progressive.

Children with Non cf bronchiectasis require long term follow up three to four monthly when they are stable, more frequent when they are not.

PULMONARY EXACERBATIONS AND TREATMENT OF NON-CYSTIC FIBROSIS BRONCHIECTASIS

Anne B Chang

Queensland Children's Respiratory Centre, Royal Children's Hospital, Brisbane, Queensland, and Menzies School of Health Research, Darwin, Northern Territory, Australia

Although regarded in high-income countries as an 'orphan disease', bronchiectasis remains a major contributor to chronic respiratory morbidity in less affluent populations. In affluent populations it is also increasingly recognised.[1] However, non-CF bronchiectasis remains a much 'neglected disease', with delayed diagnosis and limited clinical resources and research data.

A paradigm presenting a spectrum related to airway bacteria, with associated degradation and inflammation products causing airway damage if untreated, entails protracted bacterial bronchitis (at the mild end) to irreversible airway dilatation with cystic formation as determined by HRCT (at the severe end of the spectrum). Increasing evidence suggest that progression of airway damage can be limited by intensive treatment, even in those predestined to have bronchiectasis (eg immunodeficiency).[2] Treatment is aimed at achieving a cure in those at the milder end of the spectrum to limiting further deterioration in those with severe 'irreversible' radiological bronchiectasis. Clinical bronchiectasis is reversible only if it is in the early stages and thus attention to early diagnosis and intensive treatment is important.

The natural history of bronchiectasis and mortality has altered with improvements in health and the environment suggests that with the implementation of other preventative factors, the progression of bronchiectasis could be ameliorated in the majority of children. Further most adults with bronchiectasis have had symptoms since childhood. Also, there is evidence demonstrating:

a. The effect that exacerbations and/or delayed treatment is associated with lung function decline,
b. Children at risk of bronchiectasis can have normal lungs with early diagnosis and appropriate management, and
c. Appropriate treatment reduces exacerbations of bronchiectasis.

In the treatment of any chronic disease, attention to minimizing day-to-day symptoms (ie obtaining control) and prevention of exacerbations is important. The first step in the later is recognition and development of valid definitions. To that end, the first validated definition of non-CF bronchiectasis in children[3] will be discussed in this presentation.

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SIMPLE ABSTRACT FOR THE 2 COMBINED TALKS ON US PLEURA DURING THE WORKSHOP

Tan Su Zet

Hospital Umum Sarawak, Kuching, Sarawak, Malaysia

Thoracic ultrasound is a useful bedside technique to augment the diagnosis of pleura or thoracic conditions and as a guide for certain interventions like pleural fluid aspiration or biopsy. Like all ultrasound techniques, it is best learnt in a hands-on workshop which aims to provide some focused training and how to recognize some of sonographic artifacts.

ROFLUMILAST: A NOVEL ANTI-INFLAMMATORY THERAPY FOR COPD PATIENTS

Leonardo M Fabbri

Department of Oncology Haematology and Respiratory Diseases, Policlinic of Modena, University of Modena and Reggio Emilia

Treatment options for patients with chronic obstructive pulmonary disease (COPD) are limited. Roflumilast is a newly approved phosphodiesterase-4 inhibitor for the treatment of severe chronic obstructive pulmonary disease (COPD) associated with chronic bronchitis and a history of exacerbations. Previous studies have investigated the efficacy and safety of roflumilast in patients with moderate-to-severe COPD, but not in those concomitantly treated with long-acting inhaled bronchodilators. A total of 6 clinical trials evaluated the efficacy and safety of roflumilast in COPD. Roflumilast was associated with a significant improvement in lung function (increase in FEV(1) of 36-88 mL) when compared with placebo. Roflumilast also reduced the rate of exacerbations in subsets of patients with chronic cough and a history of exacerbations. Overall, health-related quality of life was not significantly affected. Adverse effects were common in clinical trials, with 9% to 16% of patients discontinuing therapy as a result. The most frequently reported adverse effects were gastrointestinal issues, headache, and weight loss. Suicide-related adverse effects have occurred in 5 patients receiving roflumilast and 1 patient receiving placebo.

Two separate 6-month clinical trials, performed in an outpatient setting, have investigated whether roflumilast improves lung function in patients with moderate-to-severe COPD who are already being treated with either salmeterol or tiotropium. After a 4-week run in, patients were randomised using a pseudo random number generator to receive either oral roflumilast 500 µg or placebo once daily for 24 weeks, in addition to either salmeterol or tiotropium. Compared with placebo, roflumilast consistently improved mean prebronchodilator forced expiratory volume in 1 second both in patients treated with salmeterol and in patients treated with tiotropium. Similar improvement in post-bronchodilator FEV_1 was observed in both groups. Furthermore, roflumilast had beneficial effects on other lung function measurements and on selected patient-reported outcomes in both groups. Nausea, diarrhoea, weight loss and, to a lesser extent, headache occurred more frequently in roflumilast-treated patients. These adverse events were associated with increased patient withdrawal.

The results of these studies show that roflumilast improves lung function in patients with moderate to severe COPD even when treated with either salmeterol or tiotropium. These results suggest that roflumilast provides an incremental benefit to patients with moderate-to-severe COPD, even though it is associated with some adverse effects. Ongoing studies are addressing the question on whether roflumilast improves lung function and reduces exacerbations in patients already treated with an inhaled combination of corticosteroid and long-acting beta2-agonists with or without tiotropium.

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HOW CLINICIANS CAN START RESEARCH AND GET PUBLISHED?

Gary Y C Lee

Winthrop Professor of Respiratory Medicine, University of Western, Australia
Consultant & Director of Pleural Services, Repiratory Department, Sir Charles Gairdner Hospital,
University Department of Medicine, Australia

Pulmonologists have a critical role and duty in driving respiratory research. Clinicians at the frontline are the logical persons to determine the most pressing areas for research. To engage in research is a pulmonologist's responsibility and privilege. Research carries significant prestige and provides opportunities to present novel data at conferences, to improve one's CV and enhance promotion prospects and can be fun!

The novelty and clinical relevance of the idea underpinning the research question are the absolute keys to a high impact project. A thorough literature review, and (if possible) discussions with experts in the field, are prudent. A good project should be contributory to medicine whether the results are positive or negative. Small projects can make a big impact. When considering a research idea the local prevalence of a condition and the accompanying clinical expertise can often provide new investigators an advantage. Spend time digesting and thinking through the subject and discussing it widely with experienced colleagues.

Recruit any assistance available. Write to local charities and apply for all funding opportunities, big or small. Projects always take longer than anticipated. Once started, you must see the project to completion. The results of the project must be published. Negative results are as important as positive findings.

ISSUE OF MDR AND XDRTB IN MALAYSIA

Hj Abdul Razak Muttalif

Institute of Respiratory Medicine, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Multidrug-resistant (MDR) tuberculosis is defined as disease caused by strains of Mycobacterium tuberculosis that are at least resistant to treatment with isoniazid and rifampicin; extensively drug-resistant (XDR) tuberculosis refers to disease caused by multidrug-resistant strains that are also resistant to treatment with any fluoroquinolone and any of the injectable drugs used in treatment with second-line anti-tuberculosis drugs (amikacin, capreomycin, and kanamycin). MDR tuberculosis and XDR tuberculosis are serious threats to the progress that has been made in the control of tuberculosis worldwide over the past decade.

In 2008, an estimated 440,000 cases of MDR tuberculosis emerged globally. India and China carry the greatest estimated burden of MDR tuberculosis, together accounting for almost 50% of the world's total cases. More than three quarters of the estimated cases of MDR tuberculosis occur in previously untreated patients. The proportion of MDR cases among new cases and previously treated cases of tuberculosis reported globally from 1994 through 2009 ranged from 0 to 28.3% and from 0 to 61.6%, respectively. In Malaysia, the rates of MDRTB had risen from just 13 cases in 2004 to an alarming figure of 141 cases in 2011. This is an increase from 0.3% to 1.3%, over the past seven years.

By 2009, a total of 58 countries had reported at least one case of XDR tuberculosis. In eight countries, reported cases of XDR tuberculosis account for more than 10% of all cases of MDR tuberculosis. By far the largest number of cases of XDR tuberculosis has been reported from South Africa (10.5% of all cases of MDR tuberculosis in that country), owing to rapid spread among people infected with the human immunodeficiency virus (HIV).

Prevention is better than cure. Thus, the top priority for the control and, ultimately, elimination of MDR tuberculosis is prevention of its emergence. Once MDR tuberculosis has emerged, however, urgent measures are required to curb its effects on efforts to control the disease. By October 2009, 20 of the 27 countries with the highest burden of MDR tuberculosis were updating their national tuberculosis-control plans to include a component addressing MDR tuberculosis, in compliance with the World Health Assembly resolution. This action should also be taken by the Malaysian government to prevent the worsening of the MDRTB cases here. New recording systems have been developed in managing these cases and a pilot study is being done in IPR. Soon, all states will have to follow these reporting and recording systems. Few other issues of concern in Malaysia are, drug availability in all the states, culture results and sensitivity for second line drugs and also the experience in managing these cases.

MDR/XDRTB is mostly a man-made problem, it is thus very important that the patients are treated effectively the first time.

MANAGEMENT OF PARAPNEUMONIC EFFUSION

Gary Y C Lee

Winthrop Professor of Respiratory Medicine, University of Western, Australia
Consultant & Director of Pleural Services, Repiratory Department, Sir Charles Gairdner Hospital,
University Department of Medicine, Australia

The incidence of pleural infection continues to rise despite modern clinical care. The pathogenesis of pleural infection remains intriguing. The changing bacteriology, especially after the introduction of pneumococcal vaccination, raises even more interesting questions.

Recent studies have helped to define better methods to diagnose pleural infection, including more accurate measurements of pleural fluid pH and more sensitive culture methods. Radiological advances have helped in guiding drainage procedures and reduce the need of surgery. The optimal size of chest drains needed remains debated.

Although the use of fibrinolytics on its own has shown no benefits in randomized trials, the combination of intrapleural fibrinolytics and DNase satisfactorily treated 95% of patients, negating the need of surgery and reduced hospital stay. This practice is now adopted in increasing centres.

TB EMPYEMA

Kunji Kannan

Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

Introduction

Tuberculosis is a disease that is very rampant in Malaysia, especially in Sabah. A lot of cases of Tuberculosis presents as pleural effusions.

Main body

With this talk, I will be covering the various presentation of pleural effusions caused by Tuberculosis. This will touch on Tuberculous pleural effusion, TB empyema as well as concomitant pleural malignancy.

Common presentation of patients, diagnostic methods used and available as well as theurapeutic options available for these patients , both medical and surgical will be eloborated.

Shortcomings / Challenges on the managements of patients with tuberculous pleural effusions in Malaysia will also be discussed on a interactive basis.

MANAGEMENT OF TRAPPED LUNG EFFUSIONS

Gary Y C Lee

Winthrop Professor of Respiratory Medicine, University of Western, Australia
Consultant & Director of Pleural Services, Repiratory Department, Sir Charles Gairdner Hospital,
University Department of Medicine, Australia

Trapped lung refers to a condition when the lung fails to fully expand after drainage of air or effusions from the pleural cavity. Trapped lung is usually a result of endobronchial lesions or thick visceral peel prohibiting lung expansion. Trapped lung can occur with pleural inflammatory conditions, eg pleural infection or tuberculosis, which could spontaneously improve when the underlying condition(s) is treated.

Malignant pleural diseases, especially from mesothelioma, frequently cause a trapped lung. A post-drainage CXR showing incomplete lung expansion is the gold standard of diagnosing a trapped lung. Occasionally suction can help enhance lung expansion after pleural drainage. Pleural manometry is used by some centres to predict the likelihood of trapped lung.

Pleurodesis is generally not useful for patients with a trapped lung. Indwelling pleural catheter is a new means to avoid repeated drainage for patients with trapped lung. It reduces the need for hospitalization and provides equivalent improvement in quality of life. Aftercare of the patients with an indwelling catheter is critical to the success of this management.

MECHANICAL VENTILATION

Pyng Lee

Division of Respiratory and Critical Care Medicine, National University Hospital, Singapore

The ancient Greek physician and philosopher Claudius Galen was the first to describe the artificial ventilation of an animal. More than 1000 years later, in the 16th century, this technique was applied to human resuscitation. Excluding these historical anecdotes, mechanical ventilation did not become a major therapeutic intervention until the poliomyelitis epidemic swept through Europe and the United States in the 1940s and 1950s. Since the middle of the 20th century, a wide variety of ventilatory techniques have been developed for the treatment of patients with respiratory failure. I review the available modalities of mechanical ventilation in terms of clinical indications and practical applications. Ventilator settings, alternative modes of ventilation, ventilation complications, and weaning from mechanical ventilation are also discussed.

ASSESSMENT OF CRITICALLY ILL PATIENTS

Tai Li Ling

Department of Anaesthesia and Intensive Care, Hospital Kuala Lumpur, Malaysia

A critically ill patient is one at imminent risk of death. Early identification of the severity of illness is essential to allow clinicians time to identify the physiological problems, determine its underlying cause and begin appropriate treatment. The longer the interval between the onset of an acute illness and the appropriate intervention, the more likely it is that the patient's condition will deteriorate. Several studies have demonstrated that physiological deterioration precedes many cardiopulmonary arrests by hours.

In the critically ill patient, assessment of deranged physiology, immediate resuscitation and stabilisation of the patient's condition usually proceed simultaneously and precede definitive diagnostic consideration. Another important aspect of care is frequent, continuous assessment and monitoring of the patient's condition and response to resuscitation and treatment.

Initial assessment of the critically ill patient is focused on the cardiovascular, respiratory and neurological functions. Although clinical examination remains a vital part of the assessment, monitoring systems and laboratory investigations are often used to establish a diagnosis, to guide interventions and to assess response to treatment in the critically ill. It is important to appreciate that many of the monitored variables are only surrogates for the variable of primary interest and therefore need to be interpreted correctly. Monitoring systems have their limitations and invasive monitoring techniques have potential complications. Therefore, the importance of combining astute clinical assessment with the appropriate and intelligent use of monitoring systems in these patients cannot be overemphasized.

INVASIVE VENTILATION FOR COPD

Pyng Lee

Division of Respiratory and Critical Care Medicine, National University Hospital, Singapore

NICE guidance 2004 states that patients with exacerbations of COPD should receive treatment on intensive care units including invasive ventilation when this is thought to be necessary. However only 1% of patients in 91 of 232 ICU received IMV; 5% of all acidotic patients received it as did 5% of all inpatient deaths and 3% of all those who died within 90 days. Some 3.2% of all NIV patients went on to receive IMV including 3.3% of NIV patients who died inpatient and 2.6% of NIV patients who died within 90 days. NIV has become both the "gold standard" and "standard of care" for most patients with acute exacerbation of COPD of sufficient severity to require ventilatory support. A recent audit from UK raises significant concerns about the practice of NIV in the "real" world. Important challenges remain in the ongoing education and training of healthcare workers responsible for the prescription and delivery of NIV. The respiratory community needs to determine the most appropriate response when patients develop acidosis during their admission or deteriorate despite NIV. For some patients escalation in therapy is the right response, but for others a move to a more palliative approach is more appropriate.

COMPLICATIONS OF PNEUMONIA – CAN WE PREDICT AND PREVENT?

Hasniah Abdul Latif

Paediatric Department, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Childhood pneumonia is the single leading cause of mortality in children aged less than 5 years. The incidence in this age group is estimated to be 0.29 episodes per child-year in developing and 0.05 episodes per child-year in developed countries. This translates into about 156 million new episodes each year worldwide, of which 151 million episodes are in the developing world.

Substantial evidence revealed that the leading risk factors contributing to pneumonia incidence are lack of exclusive breastfeeding, under nutrition, indoor air pollution, low birth weight, crowding and lack of measles immunization. Pneumonia is responsible for about 19% of all deaths in children aged less than 5 years, of which more than 70% take place in sub-Saharan Africa and south-east Asia. Although based on limited available evidence, recent studies have identified *Streptococcus pneumoniae*, *Haemophilus influenzae* and respiratory syncytial virus as the main pathogens associated with childhood pneumonia.

Identifying pneumonia cases and instituting appropriate antibiotic therapy is the primary strategy with good evidence of effectiveness to reduce pneumonia related mortality. While majority of children having a good prognosis with appropriate treatment, some may develop complications e.g. paraneumonic effusion/empyema, lung abscess, necrotizing pneumonia and failure to improve in the usual timeframe. Predictive factors and possible preventive strategies will be discussed.

SUPPURATIVE PNEUMONIAS AND MANAGEMENT OPTIONS

Mariana Daud

Department of Paediatric, Hospital Permpuan Zainab II, Kota Bahru, Kelantan, Malaysia

The complications of suppurative pneumonias include empyema, lung abscess, bronchopleural fistula and bronchiectasis. The management options of the each complications except bronchiectasis will be discussed in this presentation.

Empyema thoracis occurs about 0.6% following severe pneumonia and for unknown reasons the prevalence of empyema is rising dramatically worldwide. The optimal treatment of pediatric empyema remains controversial. Conventional management consists of chest drain insertion and intravenous antibiotics. However, some experts advocated early surgical drainage, either primary VATS (video-assisted thoracoscopic surgery) or early thoracoscopic drainage if failed conventional methods. There are data that support this mode of treatment. However, more data are available in the usage of intrapleural urokinase that showed shorter length of hospital stay, especially if urokinase was given via pigtail drains. Following this, some centers have virtually though not completely disappeared the surgical referrals for empyema in their institution. However, at the moment there is no study that truly compare between VATS and intrapleural urokinase. VATS is not available freely in many part of the world and is unlikely without delay. The role of decortication has significantly fallen out of favour because early effective management approach of empyema thoracis and it is associated with significant morbidity .

The availability of effective antibiotic therapy has also drastically modified the natural history of lung abscess and diminished the role of surgery. The current management of lung abscesses includes prolonged antibiotic therapy. Because effective broad-spectrum antibiotics are available, primary or nonspecific abscesses can frequently be arrested in the early stage of suppurative pneumonitis. Operative indications are less frequent in current practice, and these procedures are undertaken electively for chronic illnesses only after failed medical therapy

Bronchopleural fistulas (BPFs) are rare a complication of suppurative pneumonias. Although rare, BPFs represent a challenging and frustrating management problem and are often associated with high morbidity, mortality and resource utilization. The therapeutic options ranging from conservative to aggressive surgical therapies but unfortunately the scientific evidence for its management is still lacking.

OUTCOME OF SUPPURATIVE PNEUMONIA IN CHILDREN

Ahmad Fadzil b Abdullah

Department of Paediatrics, Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia

Empyema is one of the uncommon complication in pneumonia and it is a result of progression of the infection into the pleural space. The most common cause of childhood empyema is acute bacteria infection. The management of empyema include antibiotics alone, antibiotic with thoracocentesis, antibiotic with chest tube and surgical treatment either as primary/early or after nonresponding to surgical treatment. There are many case studies reported in treatment of empyema but there are very little data in RCT thus until now there are a lot of variation in managing empyema.

Unlike adult empyema in children usually have a good prognosis especially if antibiotic were start early and mortality is uncommon. Thus other parameter were used to look into the outcome of empyema in children. The complications, length of stay in hospital and cost. of managing were the main parameter quoted as the outcome. Though the x-ray improvement in the empyema patients were slow compare to the clinical improvement, almost all the patients have normal x-ray after 18 months. This is similar in lung fuction test and patient functional ability.

A WIND OF CHANGE IN AECOPD

Richard Li-Cher Loh

Penang Medical College, Penang, Malaysia

Exacerbation in COPD is now established as a key therapeutic target from the perspectives of morbidity, mortality and healthcare expenses. This refers not only to the acute episodes of exacerbation but also to the long term prognosis of a patient with COPD. We should ask ourselves then whether we can improve on our existing available treatment strategies for these patients in order to reduce the future risks of acute exacerbation of COPD (AECOPD). Bronchial bacterial infection and colonization is a relatively recent emphasis in discussions on reducing future risk of AECOPD. Up to two third of patients during AECOPD have proven bacterial cause for their exacerbation. Several studies have now supported the concept that reducing bronchial bacterial infection or colonization by effective anti-microbial therapy may reduce exacerbation risk and therefore improve disease prognosis. Such anti-microbial therapy has been tried either as regular treatment during stable COPD with macrolide[1], or as intermittent pulse courses of moxifloxacin[2]. Most recently, short-course 5-day moxifloxacin is compared to standard 7-day high-dose amoxicillin/clavulanate in treating AECOPD as outpatient in a multicentre randomized control study[3]. At 8 weeks using treatment failure as outcome, the results show that both are comparable and well tolerated. However in those AECOPD with proven bacterial infection, moxifloxacin has a significantly lower treatment failure rate. These studies provide evidence that bronchial infection or colonization is clinically relevant and warrant further research as to how best we can approach and treat this. This is obviously important in an age where judicious use of antibiotics is necessary.

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Oral Scientific Presentations

PO 1 **Prediction Of Risk Of Chronic Obstructive Pulmonary Disease (COPD) Exacerbation By The SAFE Index** 00

Rosmadi Ismail[1], Fauzi Mohd Anshar[2], Azarisman Shah Mohd Shah[3], Rohaizat Hassan[2], Roslina Manap[2]

[1]Department of Medicine, Hospital Bintulu, Sarawak, Malaysia
[2]Department of Medicine, University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
[3]Kulliyah of Medicine, International Islamic University, Kuantan, Malaysia

PO 2 **EMLAN Study – The First Prospective Study On Epidermal Growth Factor Receptor Mutations In Non-Small Cell Lung Cancer In Malaysian Patients** 00

H R Leow[1], C K Liam[1], S H How[2], Y K Pang[1], K T Chua[1], N L Lai[1], B K Lim[1], C H Lee[1], Y C Kuan[2], P Jayalakshimi[3], R Pathmanathan[4]

[1]Division of Respiratory Medicine, Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Internal Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[3]Department of Pathology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[4]Pathology Laboratory, Sime Darby Medical Centre, Subang Jaya, Malaysia

PO 3 **Rate Of Lung Function Decline In Healthy Urban And Rural Malaysian Population** 00

A I Ismail, M A Arippin, W H Wan Mohamad, M A Mohd Zim, K Yusoff, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Batu Caves, Malaysia

PO 4 **Tuberculosis Patients' Perceptions Towards Directly Observed Treatment Short Course, Results Of A Pilot Study In Penang** 00

Lalitha Pereirasamy[1], Amer Hayat Khan[2], Irfhan Ali[1]

[1]Department of Respiratory Medicine, Penang Hospital, Penang, Malaysia
[2]Department of Clinical Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, Malaysia

PO 5 **A Study Of Pulmonary Nontuberculous Mycobacterium Infection In A HIV-Seronegative Population Served By The University Malaya Medical Centre** 00

J L Aiu, Y K Pang, C K Liam, K P Ng, Y F Ngeow, K T Chua, BK Lim, N L Lai

University Malaya Medical Centre, Kuala Lumpur, Malaysia

PREDICTION OF RISK OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) EXACERBATION BY THE SAFE INDEX

Rosmadi Ismail[1], Fauzi Mohd Anshar[2], Azarisman Shah Mohd Shah[3], Rohaizat Hassan[2], Roslina Manap[2]

[1]Department of Medicine, Hospital Bintulu, Sarawak, Malaysia
[2]Department of Medicine, University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
[3]Kulliyah of Medicine, International Islamic University, Kuantan, Malaysia

Introduction

COPD is a common chronic disease with growing prevalence, suffered by many throughout the world. Although COPD is a chronic disease, exacerbation poses the greatest threat to its sufferers. COPD exacerbations are morbid, costly, cause significant impairment in quality of life and are a disease-altering event. The aim of this study was to investigate the influence of different COPD staging tools (GOLD, SAFE index and BODE index) on the exacerbation severity, frequency and occurrence risk in a cohort of 94 stable patients with COPD.

Methods

Demographics, clinical evaluation, spirometry, BMI, 6-minute walking distance, dyspnoea, and quality of life measurements were obtained at baseline. Patients were followed up for 1 year or until death, and information on exacerbation was collected.

Result

COPD patients with higher stages of the disease according to GOLD, BODE and SAFE index had significantly more frequent and severe exacerbations compared to patients with lower stages of the disease. Logistic regression showed that the relationship between the risk for severe exacerbations during a 1year follow-up and the GOLD stage was odds ratio (OR): 1.7; 95% CI: (1.1 – 2.7); for the BODE index was OR: 2.39; 95% CI: (1.46 – 3.92) and for SAFE index was OR 2.5; 95% CI: (1.52 - 4.1). The area under the receiver-operator curve (ROC) analysis showed BODE index and SAFE index were better predictors of COPD exacerbations than the FEV1 alone.

Conclusion

The SAFE index is a better predictor of numbers and severity of exacerbation compared to FEV_1 alone and non-inferior to the BODE index.

EMLAN STUDY – THE FIRST PROSPECTIVE STUDY ON EPIDERMAL GROWTH FACTOR RECEPTOR MUTATIONS IN NON-SMALL CELL LUNG CANCER IN MALAYSIAN PATIENTS

H R Leow[1], C K Liam[1], S H How[2], Y K Pang[1], K T Chua[1], N L Lai[1], B K Lim[1], C H Lee[1], Y C Kuan[2], P Jayalakshimi[3], R Pathmanathan[4]

[1]Division of Respiratory Medicine, Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Internal Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[3]Department of Pathology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[4]Pathology Laboratory, Sime Darby Medical Centre, Subang Jaya, Malaysia

Background

Mutations in the tyrosine kinase domain of epidermal growth factor receptor (EGFR) in non-small cell lung cancer (NSCLC) have been demonstrated to be the most robust predictive biomarker for response to EGFR-targeted therapy in advanced stages of this disease. To date, there has been no report on the frequency of EGFR mutations in NSCLC in Malaysian patients.

Objectives

To determine the frequency of EGFR mutations in NSCLC and to correlate the presence of EGFR mutations with clinical characteristics of Malaysian patients.

Methods

In this prospective study, EGFR mutations in exons 18, 19, 20 and 21 in formalin-fixed paraffin-embedded biopsy specimens of consecutive NSCLC patients who attended the University Malaya Medical Centre (120 patients) and Hospital Tengku Ampuan Afzan, Kuantan (31 patients) from August 2010 to December 2011 were detected by real-time PCR.

Results

EGFR mutations were detected in the NSCLC from 55 (36.4%) of a total of 151 patients. Deletion mutation in exon 19 and substitution mutation in exon 21 were detected in the tumours from 40 and 15 patients, respectively. EGFR mutations were significantly more common in females (62.5%) than in males (17.2%) [odds ratio (OR), 8.00; 95% confidence interval (CI), 3.77-16.98; $p < 0.001$] and in never smokers (62.5%) than in ever smokers (12.7%) (OR, 11.50; 95% CI, 5.08-26.03; $p < 0.001$). The mutation rate was higher in adenocarcinoma (39.4%) compared to non-adenocarcinomas (15.8%) ($p = 0.072$). Multivariate analysis showed never smoking status to be the only clinical feature that independently predicted the presence of EGFR mutations (adjusted OR, 5.94; 95% CI, 1.94-18.17; $p = 0.002$).

Conclusions

In Malaysian patients with NSCLC, the EGFR mutation rate is similar to that of other Asian populations. EGFR mutations are significantly more common in female patients and in never smokers. Never smoking status is the only independent predictor for the presence of EGFR mutations.

RATE OF LUNG FUNCTION DECLINE IN HEALTHY URBAN AND RURAL MALAYSIAN POPULATION

A I Ismail, M A Arippin, W H Wan Mohamad, M A Mohd Zim, K Yusoff, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Batu Caves, Malaysia

Introduction

Forced Expiratory Lung Volume in 1 second (FEV_1) decline is a marker of chronic respiratory disease progression and studies have shown that FEV_1 is an independent predictor of mortality from all causes as well as specific causes such as chronic obstructive pulmonary disease and ischaemic heart disease.

Objective and Methods

The purpose of this study is to determine the rate of lung function decline measured by FEV_1 in the urban and rural Malaysian population. As part of a large-scale epidemiological study, PURE-RUS, we performed spirometry on healthy participants at baseline during recruitment and at 3 year follow-up. Spirometry was performed according to the ATS guidelines on standardisation of spirometry.

Results

A total of 752 (434 rural, 318 urban) participants completed the two spirometry readings and were included in the analysis. The urban population had a significant reduction in FEV_1 (95%CI) over a 3-year period compared to the rural population [162(71) mls vs. 79(26) mls, $p = 0.0001$]. This reduction is accelerated further in the smoking population, with mean FEV_1 reduction of 296mls (95% CI 210mls, $p = 0.008$).

Conclusion

The study suggests that the rate of lung function decline is faster in urban population and accelerated by smoking. Further studies are required to determine the cause of this decline and whether any intervention in the urban population can halt this progression.

TUBERCULOSIS PATIENTS' PERCEPTIONS TOWARDS DIRECTLY OBSERVED TREATMENT SHORT COURSE, RESULTS OF A PILOT STUDY IN PENANG

Lalitha Pereirasamy[1], Amer Hayat Khan[2], Irfhan Ali[1]

[1]Department of Respiratory Medicine, Penang Hospital, Penang, Malaysia
[2]Department of Clinical Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Penang, Malaysia

Objectives

This study aims to describe tuberculosis patients' perceptions towards Directly Observed Treatment Short course (DOTS).

Methodology

This was a cross sectional study conducted at 5 DOTS centers in Penang, Malaysia. Perceptions of a total of 124 patients (35 at Hospital Pulau Pinang, 48 at Hospital Bukit Mertajam, 18 at Hospital Seberang Jaya, 12 at Hospital Kepala Batas and 11 at Hospital Balik Pulau) who attended the DOTS centres were evaluated through a self-administered questionnaire.

Results

The majority of patients (69.4%) were males. Mean age of the patients was 43.7±16.3 years. Study population was ethnically diverse, mainly composed of Malay (51.6%) followed by Chinese (36.5%). A notable proportion of patients (41.9%) were unemployed. 39.5% of patients were living an estimated distance of 5-10 km from DOTS centres. Only 9.5% of the patients were unaware why DOTS was conducted. Most of the patients (98.4%) were of the idea that DOTS had improved their adherence to medication, however more than half (50.8%) of patients had negative attitudes towards DOTS therapy. The majority (37.9%) preferred monthly packing of medications. Statistically significant difference ($p < 0.001$) in attitudes towards DOTS therapy was observed between patients at different clinics. Patients who attended Hospital Bukit Mertajam clinic were more positive towards DOTS as compared to those who attended other clinics.

Conclusion

Despite the well established efficacy, the negative attitude of more than half of the studied population towards DOTS therapy makes it a worrisome issue. Remedial measures such as patient awareness campaigns and modifications to the current mechanism of DOTS should to be considered in future.

A STUDY OF PULMONARY NONTUBERCULOUS MYCOBACTERIUM INFECTION IN A HIV-SERONEGATIVE POPULATION SERVED BY THE UNIVERSITY OF MALAYA MEDICAL CENTRE

J L Aiu, Y K Pang, C K Liam, K P Ng, Y F Ngeow, K T Chua, BK Lim, N L Lai

University Malaya Medical Centre, Kuala Lumpur, Malaysia

Introduction

Non Tuberculous Mycobacterium (NTM) have been increasingly recognised as important causative microorganism for pulmonary infection. However, to date, there is no published study on this infection in Malaysia.

Objectives

To study the incidence, types of species, presenting symptoms, radiographic changes and risk factors for NTM pulmonary infection and colonisation among the HIV sero-negative patients managed at UMMC from 1st October 2009 to 30th June 2011 (21 months).

Methodology

Patients with positive respiratory cultures for NTM were identified from the microbiology laboratory records. Those who met the inclusion and exclusion criteria were included in this study. They were classified as having NTM pulmonary infection or airway colonisation based on the ATS/IDSA 2007 guidelines.

Results

196 patients fulfilled the criteria. 32 (16.3%) had NTM pulmonary infection and 164 (83.7%) had NTM as commensals. The three commonest causative organisms for NTM pulmonary infection as well as airway colonisation were *M. fortuitum*, *M. abscessus* and *M. intracellulare*. Cough was the commonest presenting symptom for both groups. The commonest radiological features for NTM pulmonary infection were multifocal bronchiectasis (34.3%), nodular opacities (25.0%) and cavitatory opacities (18.8%). Bronchiectasis ($p = 0.002$) and previous pulmonary tuberculosis ($p = 0.031$) were significant risk factors for NTM pulmonary disease.

Conclusions

Less than one fifth of this cohort was identified to have NTM pulmonary infection. This finding underscores the importance of clinical and radiological correlation prior to the diagnosis of NTM infection. Besides, the spectrum of NTM species isolated for NTM pulmonary infection/airway colonisation differs from other studies performed in this region. This highlights the importance of mycobacterium culture before any treatment is contemplated.

Poster Scientific Presentations

PP 1 **On The Perception Of Tuberculosis Patients Towards Tuberculosis Treatment Kelantan, Malaysia** 00

E Omar Salad[1], N N Naing[1], AB Zilfalil[2], H Habsah[3], A Sarimah[1], M J Mat Zuki[4]

[1]Unit of Biostatistics and Research Methodology, [2]Department of Paediatrics,
[3]Department of Medical Microbiology and Parasitology, School of Medical Science,
Universiti Sains Malaysia, Kelantan, Malaysia
[4]Respiratory Specialist Clinic, Hospital Raja Perempuan Zainab II Kota Bharu, Kelantan, Malaysia

PP 2 **Prevalence And Clinical Characteristics Of REM-Related Obstructive Sleep Apnoea (OSA)** 00

BaHammam A, Ibrahim R, Sharif M

University Sleep Disorders Center, King Saud University, Riyadh, Saudi Arabia

PP 3 **Isolated Tuberculosis Of The Talus Bone** 00

Lalitha Pereirasamy[1], Narinder S[2], Nijhar B K[3], Mohana R[3], Irfhan Ali[1]

[1]Department of Respiratory Medicine, Penang Hospital, Penang, Malaysia
[2]Department of Orthopaedics, Penang Hospital, Penang, Malaysia
[3]Department of Radiology, Penang Hospital, Penang, Malaysia

PP 4 **Asthma Control In Hospital Tengku Ampuan Afzan, Kuantan: A Cross-Sectional Study** 00

Y C Kuan[1], C H Tan[2], C M Hong[2], S H How[1]

[1]Department of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[2]Department of Medicine, Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia

PP 5 **Proposed Treatment Algorithm For Advanced Non-Small Cell Lung Cancer** 00

Chong-Kin Liam[1], Ahmad Radzi[2], Adel Zaatar[3], Matin Mellor[3,4], Muhammad Azrif[5]

[1]Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Johor Specialist Hospital, Johor Bahru, Johor, Malaysia
[3]Gleneagles Medical Center, Penang, Malaysia
[4]Sime Darby Medical Centre, Kuala Lumpur, Malaysia
[5]Prince Court Medical Centre, Kuala Lumpur, Malaysia

PP 6 **Epidermal Growth Factor Receptor Mutations In Lung Adenocarcinoma In Malaysian patients** 00

Chong-Kin Liam[1], Mohamed Ibrahim A Wahid[2], Pathmanathan Rajadurai[3], Yoke-Kqueen Cheah[4], Tiffany Ng S Y[4]

[1]Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Beacon International Specialist Centre, Petaling Jaya, Selangor, Malaysia
[3]Monash University, Bandar Sunway, Selangor, Malaysia
[4]University Putra Malaysia, Serdang, Selangor, Malaysia

PP 7 **Clinical Characteristics And Outcome Of Pulmonary Meliodosis In Bintulu: A 4 Year Review** 00

A Fazlina[1], J S Wong[1], M A Ahmad Afifi[1], C Goh[1], Y Podin[2,3], B Currie[3]

[1]Bintulu Hospital, Sarawak, Malaysia,
[2]Universiti Malaysia Sarawak (UNIMAS), Sarawak, Malaysia
[3]Menzies School of Health Research, Darwin, Australia

PP 8 **Early Experience With Bronchoscopy-Guided Percutaneous Dilatational Tracheostomy In Sabah** 00

M Redzwan Rashid Ali, A Ibrahim, K K Sivaraman Kannan

Respiratory Department, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

PP 9 **Concomitant Smear-Positive Pulmonary And Pleural Tuberculosis And Metastatic Adenocarcinoma Of Lung In A Young Female Patient** 00

M Redzwan Rashid Ali, Siti Hajar Sanudin, K K Sivaraman Kannan

Respiratory Department, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

PP 10 **Foreign Body-Thumbtack Removal Via Rigid Bronchoscopy Under Sedation** 00

M Redzwan Rashid Ali, Lee Kok Soon, K K Sivaraman Kannan

Respiratory Department, Hospital Queen Elizabeth, Kota Kinabalu, Sabah, Malaysia

PP 11 **Non-Adherence To Pulmonary Rehabilitation Among COPD Patients In A Malaysian Hospital** 00

R Ayiesah[1], W K Tang[1], S Riza[2], A T Nor Adina[3]

[1]Physiotherapy Programme, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia
[2]Physiotherapy Department, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
[3]Medical Department, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

PP 12 **Multidrug-Resistant Tuberculosis In Institut Perubatan Respiratori Malaysia** 00

R Yasin , Z Abu Bakar, AK Goon, A R Muttalif, A Ahmad Mahayiddin

Institut Perubatan Respiratori, Kuala Lumpur, Malaysia

PP 13 **Comparison Of The Sensitivity Of High Resolution Melting Analysis And Scorpion Amplification Refractory Mutation System In Epidermal Growth Factor Receptor Mutation Detection** 00

Tiffany Ng Shi Yeen[1], Cheah Yoke Kqueen[1], Shiran Mohd Sidik[2], Ahmad Zaid Fattah Azman[3], Pathmanathan Rajadurai[4]

[1]Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor, Malaysia
[2]Department of Pathology, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor, Malaysia
[3]Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor, Malaysia
[4]Monash University, Bandar Sunway, Malaysia

PP 14 **Retrospective Study Of Tuberculosis Patients In Bintulu, Sarawak: 2010-2011** 00

Rosmadi Ismail[1], Mae Yue Tan[2], Selamah Arsat[3], Norma Mahrup[3], Jin Shyan Wong[1]

[1]Bintulu Hospital, Sarawak, Malaysia
[2]Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[3]Tuberculosis Control Program Centre, Klinik Kesihatan Bintulu, Sarawak, Malaysia

PP 15 **A Comparison Of QuantiFERON®-TB Gold In-Tube Test And Tuberculin Skin Test In The Diagnosis Of Latent Tuberculosis Infection Amongst Patients Undergoing Regular Haemodialysis** 00

L K Lem, R Abd Manap, A H Abdul Gafor, M Mohammad, R Harun, S M Idrus Alhabshi, S Azhar Shah

Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

PP 16 **Early Experience With Rigid Bronchoscopy Under General Anaesthesia Using Total Intravenous Anaesthesia (TIVA) In Sabah** 00

M Redzwan Rashid Ali, S H Sanudin, K K Sivaraman Kannan

Department of Respiratory Medicine, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

PP 17 **A Rare Case Of Reexpansion Pulmonary Oedema Post Pleuroscopy In A Young Man** 00

Aisyah A J, M Redzwan Rashid Ali, K K Sivaraman Kannan

Department of Respiratory, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

PP 18 **Characteristics and Outcome Of Patients With Active Pulmonary Tuberculosis Requiring Intensive Care Unit Admission** 00

R Yasin[1], N I Ismail[2], N Marzuki[1], L L Tai[2], A R Muttalif[1]

[1]Institut Perubatan Respiratori, Kuala Lumpur, Malaysia
[2]Intensive Care Unit, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

PP 19 **Validation Of Serum CCL5 In Predicting Asthma Control Status** 00

NA Abu Bakar, Roslan H, AYL Ban, H Mohd Noor

University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

PP 20 **Usage Of Metal And Modified Chest Tube Trocar To Perform Medical Thorascopy, The Sarawak Experience** 00

J L Won , S T Tie, Y L Ting, J A Jimbai, M Mathlan

Hospital Umum Sarawak, Kuching, Sarawak, Malaysia

PP 21 **Usage Of Hand Held Spirometer – Vitalograph™ for the diagnosis of COPD, the Sarawak Experience** 00

J L Wong, S T Tie, Y L Ting, J A Jimbai, M Mathlan

Hospital Umum Sarawak, Kuching, Sarawak, Malaysia

PP 22 **The Association Of Body Mass Index (BMI) With Clinical Outcomes In Patients With Pulmonary Tuberculosis** 00

N A Che Hamzah[1], D Muhamad[2]

[1]Department of Medicine, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia
[2]Hospital Lahad Datu, Sabah, Malaysia

PP 23 **Laryngomalacia, Tracheomalacia And Bronchomalacia In Children: Morbidity And Treatment** 00

Wong Weng Keong, Norzila Mohamed Zainudin, Asiah Kassim

Institut Pediatrik, Hospital Kuala Lumpur, Malaysia

PP 24 **The Effectiveness Of Continuous Positive Airway Pressure (CPAP) Treatment On Patients With Obstructive Sleep Apnoea (OSA)** 00

Yee Kiat Tan[1], Rose Azzlinda Osman[2], Azira Ahmad Kamil[2], Nur Amani Aris[2], Norita Idris[2], Fauzi Anshar[2], Andrea Ban[2], Roslan Harun[1,2], Roslina A Manap[2]

[1]Universiti Kebangsaan Malaysia Medical Molecular Biology Institute, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia
[2]Department of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

PP 25 **Co-Morbidities In Obstructive Sleep Apnoea Patients Attending Sleep Clinic** 00

M N Kamarudin, S N A Zahari, NA Zakaria, M A Arippin, H Abdullah, M A Mohd Zim, W H Wan Mohamad, A I Ismail, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Batu Caves, Malaysia

PP 26 **Six Minute Walk Test As An Outcome Measure Tool In Identifying Patients Improvement In Terms Of Walking Distance** 00

S A N Ismail[1], M N Kamarudin[1], I S Rosli[2], T Ismail[1], A R Mutaliff[2]

[1]Respiratory Unit, Faculty of Medicine, UiTM, Campus Selayang, Malaysia
[2]Physiotherapy Department, Institut Perubatan Respiratori, Kuala Lumpur, Malaysia

PP 27 **Characteristics Of Lung Cancer Patients In Hospital Selayang** 00

M A Abd Rahman, A I Ismail, W H Wan Mohamad, M A Mohd Zim, N S Bakar, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Malaysia

PP 28 **Correlation Between Body Mass Index (BMI) And Apnoea Hypopnoea Index (AHI) in Patients Attending Sleep Clinic** 00

H Abdullah, N A Zakaria, S N A Zahari, M A Arippin, M N Kamarudin, M A Mohd Zim, W H Wan Mohamad, A I Ismail, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Batu Caves, Malaysia

PP 29 **Fatal Pneumonia Following Search And Rescue Operation** 00

S H How[1], R Rajalingam[2], Y C Kuan[1], A Norazah[3], A I Ismail[4], Iskandar[5], M Sapian[5]

[1]Department of Internal Medicine, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[2]Hospital Sultan Haji Ahmad Shah, Pahang, Malaysia
[3]Institute of Medical Research, Kuala Lumpur, Malaysia
[4]Faculty of Medicine,Universiti Teknologi MARA, Kampus Selayang, Selayang Batu Caves, Malaysia
[5]Pahang State Health Department, Kuantan, Pahang, Malaysia

PP 30 **Effect of Allergic Rhinitis And Its' Treatment On Asthma Control** 00

Chua K T, Liam C K, Pang Y K, Lai N L, Kow K S, Poh M E

Division of Respiratory Medicine, Department of Medicine, University of Malaya, Kuala Lumpur, Malaysia

PP 31 **Jeune Syndrome with Recurrent Respiratory Distress – The Role Of CPAP** 00

K H Chuah, R A Awang

Hospital Pulau Pinang, Pulau Pinang, Penang, Malaysia

PP 32 **Empyema Thoracis In Penang Hospital** 00

M Fauzi, Basheer A K, M Hamzah

Department of Cardiothoracic Surgery, Hospital Pulau Pinang, Malaysia

PP 33 **Mini Open-Window Thoracostomy: A Viable Therapeutic Option In Indicated Thoracic Empyema?** 00

M Fauzi, Basheer AK, M Hamzah

Department of Cardiothoracic Surgery, Hospital Pulau Pinang, Malaysia

PP 34 **Eight Years Of Lung And Heart-Lung Transplantations In Malaysia: Institute Of Respiratory Medicine And National Heart Institute Initial Experience** 00

Dora A[1], Ashari Y[1], Zamzurina A B[1], Zuriyana M[1], Norzira R[1], Sharifah Suraya S T[2], Rais S[2], Mohd Ezani M T[2]

[1]Institute of Respiratory Medicine, Kuala Lumpur, Malaysia
[2]National Heart Institute, Kuala Lumpur, Malaysia

PP 35 **Tuberculosis Among Foreign-Born Patients Treated In IPR – A Cross Sectional Study From September To December 2011** 00

Dora A A, Abdul Razak M

Institute of Respiratory Medicine, Kuala Lumpur, Malaysia

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Liam C K[1], Leow H R[1], How S H[2], Pang Y K[1], Chua K T[1], Lai N L[1], Kuan Y C[2], Jayalakshimi P[3], Pathmanathan R[4]

[1]Division of Respiratory Medicine, Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Internal Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[3]Department of Pathology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[4]Pathology Laboratory, Sime Darby Medical Centre, Subang Jaya, Malaysia

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W H Wan Mohamad, T Ismail, R Abdul Razak, A N Yusof

Universiti Teknologi MARA, Selayang, Selangor, Malaysia

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Muventhiran R[1], A R Jamalul Azizi[2]

[1]Institut Perubatan Respiratori,Kuala Lumpur, Malaysia
[2]Hospital Serdang Selangor, Malaysia

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Lalitha Pereirasamy[1], Amer Hayat Khan[2], Irfhan Ali[1]

[1]Department of Respiratory Medicine, Penang General Hospital, Penang, Malaysia
[2]Department of Clinical Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Malaysia

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Dg Zuraini Sahadan[1,2], Gillian Nixon[2,3], Margot Davey[2], Rosemary Horne[2,3]

[1]Paediatric Institute, Hospital Kuala Lumpur, Malaysia
[2]Melbourne Children's Sleep Centre, Monash Children's, Southern Health, Melbourne, Victoria, Australia
[3]The Ritchie Centre, Monash Institute of Medical Research, Monash University, Melbourne, Victoria, Australia

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S C Su, A Rus Anida

Department of Paediatrics, Hospital Pulau Pinang, Penang, Malaysia

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Fairuz Rani[1], Rachel Jiun[1], Anna Nathan[1], Caroline Westerhout[2], I-Ching Sam[3], Jessie de Bruyne[1]

[1]Department of Paediatrics, [2]Department of Radiology, [3]Department of Microbiology, University of Malaya, Kuala Lumpur, Malaysia

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Mohd Aizat Bin Mohd Basari, Norzila Mohamed Zainudin, Asiah Kassim

Institut Pediatrik, Hospital Kuala Lumpur, Malaysia

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Azizah Musa, , Faridah Derani, Norzila Mohamed Zainudin, Asiah Kassim

Institut Pediatrik, Hospital Kuala Lumpur, Malaysia

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Mazlina H[1], Shaharudin A[2], Alwi B[1], Zahirudin W[1], Najib C P[1]

[1]Pusat Pengajian Sains Perubatan, Hospital University Sains Malaysia, Kubang Kerian, Malaysia
[2]Faculty of Medicine and Health Science,Universiti Sultan Zainal Abidin, Kuala Terengganu, Malaysia

PP 46 **Improved Quality Of Life: The First Lung Transplant In Malaysia** 00

Ahmad Adib M N, Zuriyana M, Ashari Y, Dora A A, Zamzurina A, Norzira A R

Department: .....

VALIDATION OF THE QUESTIONNAIRE ON THE PERCEPTION OF TUBERCULOSIS PATIENTS TOWARDS TUBERCULOSIS TREATMENT KELANTAN, MALAYSIA

E Omar Salad[1], N N Naing[1], AB Zilfalil[2], H Habsah[3], A Sarimah[1], M J Mat Zuki[4]

[1]Unit of Biostatistics and Research Methodology, [2]Department of Paediatrics,
[3]Department of Medical Microbiology and Parasitology, School of Medical Science,
Universiti Sains Malaysia, Kelantan, Malaysia
[4]Respiratory Specialist Clinic, Hospital Raja Perempuan Zainab II Kota Bharu, Kelantan, Malaysia

Introduction

Defaulting treatment is one of the major causes of the failure of tuberculosis (TB) treatment as well as TB control programs. Good perception may increase acceptance of TB treatment and control measures and thus decrease the spread of the disease. The purposes of this study were to develop and validate a questionnaire on the perception of TB patients towards TB treatment.

Methods

A cross-sectional study was conducted among TB patients attending Respiratory Clinic, Hospital Raja Perempuan Zainab II, Kelantan, Malaysia. The patients were asked to rate their perception towards TB treatment. The validation involved content validity, factor analysis for construct validity and internal consistency for reliability.

Results

A total of 70 TB patients were included comprising 39 male patients (55.7%) and 31 female patients (44.3%).

Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was 0.82 and Bartlett's Test was highly significant ($p < 0.001$).

Exploratory factor analysis was used with extraction method of principal component and varimax rotation with Kaiser normalisation. Factor analysis showed three factors associated with TB treatment with accumulated variance of 65%. The reliability of the internal consistency was excellent: 0.91, 0.71 and 0.69 for factor one, factor two and factor three respectively.

Conclusion

The questionnaire on perception towards tuberculosis treatment was valid and its use for assessment of perception among patients and the community can be recommended.

PREVALENCE AND CLINICAL CHARACTERISTICS OF REM-RELATED OBSTRUCTIVE SLEEP APNOEA (OSA)

BaHammam A, Ibrahim R, Sharif M

University Sleep Disorders Center, King Saud University, Riyadh, Saudi Arabia

Introduction

The reported prevalence and clinical importance of REM-related OSA are not clearly defined in the literature. Therefore, we designed this study to assess the prevalence and clinical characteristics of REM-related OSA in a large sample of patients with sleep disordered breathing.

Methods

Consecutive patients diagnosed to have OSA between July 2008 and July 2011 (n = 840 patients, males 66.0%) were included. OSA was diagnosed based on an overnight (level I) polysomnography according to established criteria (AASM). Diagnostic criteria for REM-related OSA were: (a) Apnoea hypopnoea index (AHI) > 5/hr, (b) NREM AHI < 15/hr, (c) REM-AHI / NREM-AHI ratio > 2, and (d) total time spent in REM > 10 min. Those who did not meet the above criteria were labeled as NREM-OSA.

Results

The mean age of the studied group was 46.0 ± 13.3 yr, BMI 35.5 ± 9 and AHI 43.5 ± 33.9/hr. During the study period, 269 (32.0%) OSA patients fulfilled the diagnostic criteria for REM-related OSA. Compared to NREM-OSA, REM-related OSA were younger (43.3 ± 13.1 yr vs. 47.3 ± 13.2 yr, p <0.001), had lower Epworth sleepiness scale (ESS) (9.5 ± 5.7 vs. 10.8 ± 5.6, p = 0.005), higher proportion of females (48.0% vs 27.7%), lower AHI (12.7 ± 10.3/hr vs. 57.9 ± 31.3/hr, p < 0.001), and spent higher percentage in REM sleep (18 ± 8.3% vs. 11.9 ± 9.8%, p < 0.001). Symptoms of waking up with palpitation and early morning headache were significantly more common in REM-related OSA. Multiple logistic regression analysis identified female sex (OR 2.41, p = 0.01), palpitation (OR1.9, p = 0.007), % of REM sleep (OR 1.09, p=0.002) and AHI (OR 0.81, p < 0.001) as independent predictors of REM-related OSA.

Conclusion

REM-related OSA patients are younger and the disorder is more prevalent among females. In contrast to some previous reports, our data show that REM-related OSA may cause significant nocturnal symptoms.

ISOLATED TUBERCULOSIS OF THE TALUS BONE

Lalitha Pereirasamy[1], Narinder S[2], Nijhar B K[3], Mohana R[3], Irfhan Ali[1]

[1]Department of Respiratory Medicine, Penang Hospital, Penang, Malaysia
[2]Department of Orthopaedics, Penang Hospital, Penang, Malaysia
[3]Department of Radiology, Penang Hospital, Penang, Malaysia

Introduction

Tuberculosis (TB) is still a major public health problem worldwide. Isolated TB osteomyelitis of the talus bone is rare.

Case Report

A 25 year-old lady presented with right ankle pain for 1 year. She denied having constitutional symptoms but had previous TB exposure. Examination revealed tenderness over the right talonavicular region. Her ESR was 45mm/hr, ELISA testing for HIV infection was negative and her Mantoux test measured 10mm. MRI of her right foot showed a synovial-based pathology involving the right talonavicular joint. Her chest radiograph was normal. Open biopsy of the ankle showed partial destruction of the talus head. Histopathological examination of the synovium showed granulomas. Synovial fluid for TB culture was positive. Patient was started on anti-tuberculosis therapy and allowed partial weight bearing. After 3 months of anti-tuberculosis therapy, she underwent right talonavicular joint debridement and arthrodesis. She recovered well and resumed painless walking. She completed 1 year of anti-tuberculosis therapy.

Discussion

Dhillon and Naji report the calcaneum as the most commonly involved bone in ankle TB however this patient presented with isolated TB of the talus bone sparing other bones. The uncommon osseous site and atypical clinical presentation had contributed to delay in diagnosis and treatment. Our patient showed significant clinical improvement with combination of prolonged anti-tuberculosis therapy, partial weight bearing treatment and joint arthrodesis.

Conclusion

A high index of clinical suspicion, MR imaging and histological evaluation are necessary to confirm a diagnosis of ankle TB. Anti-tuberculosis therapy and surgical intervention is the recommended treatment with promising outcome.

ASTHMA CONTROL IN HOSPITAL TENGKU AMPUAN AFZAN, KUANTAN: A CROSS-SECTIONAL STUDY

Y C Kuan[1], C H Tan[2], C M Hong[2], S H How[1]

[1]Department of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[2]Department of Medicine, Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia

Introduction

Various initiatives and inhaled medications have been introduced to achieve better control of bronchial asthma. However, total control according to Global Initiative for Asthma (GINA) remains elusive even at tertiary referral hospitals.

Objectives

To determine the level of asthma control (according to GINA 2009), Asthma Control Test (ACT) scores and medications used among patients with bronchial asthma.

Methods

A cross-sectional study of all patients with bronchial asthma who attended the Chest Clinic at Hospital Tengku Ampuan Afzan (HTAA) from 2009 to 2011. Patient demographics, self-administered ACT scores, GINA-defined level of asthma control and medications were documented.

Results

208 patients were recruited. 74.2% were females. Median age was 48 years. Median duration of asthma was 16.5 years. There were 23.2%, 46.3% and 30.5% of patients with controlled, partly controlled and uncontrolled asthma respectively. Overall median ACT scores was 19 [inter quartile range (IQR) 6]. Among patients with controlled, partly controlled and uncontrolled asthma, ACT scores ranged from 15 to 25 (median 22, IQR 4), 10 to 25 (median 20, IQR 4), and 5 to 23 (median 15, IQR 7) respectively. The median ACT scores were significantly different between asthma control groups ($p < 0.01$). The most frequently used preventer therapy was inhaled long-acting β-agonist/corticosteroids (LABA/ICS) fixed-dose combination (61.7%), followed by budesonide (26.8%), ciclesonide (1.4%) and beclomethasone (0.5%) while 9.6% were not on preventer therapy. 75% of patients with controlled asthma were on LABA/ICS compared to 58.5% of the partly controlled and uncontrolled groups ($p=0.039$).

Conclusion

The majority of the patients attending the Chest Clinic at HTAA did not have GINA-defined controlled asthma. Patients with higher ACT scores had better control of asthma. There were more patients on LABA/ICS with controlled asthma.

PROPOSED TREATMENT ALGORITHM FOR ADVANCED NON-SMALL CELL LUNG CANCER

Chong-Kin Liam[1], Ahmad Radzi[2], Adel Zaatar[3], Matin Mellor[3,4], Muhammad Azrif[5]

[1]Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Johor Specialist Hospital, Johor Bahru, Johor, Malaysia
[3]Gleneagles Medical Center, Penang, Malaysia
[4]Sime Darby Medical Centre, Kuala Lumpur, Malaysia
[5]Prince Court Medical Centre, Kuala Lumpur, Malaysia

Introduction

Managing advanced non-small cell lung cancer (NSCLC) is challenging. Until recently, the mainstay of treatment was systemic cytotoxic chemotherapy. In recent years, there has been a paradigm shift in its treatment with targeted therapy. EGFR TKIs are now the recommended first-line treatment for NSCLC harbouring EGFR mutations. Recently, crizotinib, an ALK inhibitor, has shown remarkable efficacy in adenocarcinoma with the EML4-ALK fusion gene. In EGFR mutation and ALK negative tumours, platinum doublet cytotoxic chemotherapy continues to have a role. Bevacizumab, an antibody against VEGF, has shown overall survival benefit when used in combination with platinum doublets. Bevacizumab, pemetrexed or erlotinib are options for maintenance therapy after first-line chemotherapy. With disease progression, pemetrexed, docetaxel or TKIs are recommended second-line drugs.

Objective

In view of the increasing complexity of treatment options, a group of us convened to formulate a treatment algorithm to assist clinicians in the daily management of advanced NSCLC patients.

Methods

The algorithm was formulated based on the evidence from the literature and our combined clinical experience in managing these patients.

Results

The proposed treatment algorithm will be presented.

Conclusions

We have proposed an algorithm for the treatment of advanced NSCLC in the context of an Asian population. The most significant change is the shift to personalised treatment based on tumour histology and EGFR mutation status. The emphasis on targeted therapy imposes an obligation on the clinician to obtain sufficient tumour specimens for genotyping NSCLC at the time of diagnosis, before initiating treatment.

EPIDERMAL GROWTH FACTOR RECEPTOR MUTATIONS IN LUNG ADENOCARCINOMA IN MALAYSIAN PATIENTS

Chong-Kin Liam[1], Mohamed Ibrahim A Wahid[2], Pathmanathan Rajadurai[3], Yoke-Kqueen Cheah[4], Tiffany Ng S Y[4]

[1]Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Beacon International Specialist Centre, Petaling Jaya, Selangor, Malaysia
[3]Monash University, Bandar Sunway, Selangor, Malaysia
[4]University Putra Malaysia, Serdang, Selangor, Malaysia

Introduction

Although the prevalence of somatic mutations in the tyrosine kinase domain of epidermal growth factor receptor (EGFR) in non-small cell lung cancer has been reported by other countries, the prevalence in Malaysia is still unknown.

Objective

The objective of this study was to determine the frequency of EGFR mutations in lung adenocarcinoma in Malaysian patients.

Methods

Laboratory form information of Malaysian patients with lung adenocarcinoma sent for EGFR mutation testing at the Sime Darby Medical Centre, the only centre in Malaysia performing this test, from 2009 to 2011 were reviewed. EGFR mutations at exons 18, 19, 20 and 21 were detected either by direct sequencing or real-time polymerase chain reaction (PCR).

Results

Of 812 patients included in the analysis, 397 (48.9%) were female. Ethnic distribution was 63.7% Chinese, 29.4% Malay, 4.8% Indian and 2.1% other races. Mutations were present in the biopsy specimens of 324 patients (39.9%). The most common mutations were at exons 19 (23.5%) and 21 (14.9%). Mutations were significantly more frequent among female than male patients (52.6% vs. 27.7%, $p < 0.001$). Among 215 patients with smoking history records, never smokers had a higher mutation rate compared to ex- or current smokers (55.6% vs. 26.3% vs. 16.3%, $p < 0.001$). Although the mutation rate was higher in Chinese (41.2%) compared to Malay (37.2%) or Indian (35.9%) patients, the difference was not statistically significant ($p = 0.638$).

Conclusions

EGFR mutations were present in 40% of this relatively large sample of Malaysian patients with lung adenocarcinoma. Mutations were more common in females and never smokers. These findings are similar to those reported in other Asian populations.

CLINICAL CHARACTERISTICS AND OUTCOME OF PULMONARY MELIODOSIS IN BINTULU: A 4 YEAR REVIEW

A Fazlina[1], J S Wong[1], M A Ahmad Afifi[1], C Goh[1], Y Podin[2,3], B Currie[3]

[1]Bintulu Hospital, Sarawak, Malaysia,
[2]Universiti Malaysia Sarawak (UNIMAS), Sarawak, Malaysia
[3]Menzies School of Health Research, Darwin, Australia

Introduction

Melioidosis is an important public health problem, by a gram-negative bacterium *Burkholderia pseudomallei*, causing community-acquired sepsis in South East Asia and north Australia. The calculated annual incidence of melioidosis in Malaysia varies from 6.0 to 16.35 per 100,000 population per year for adult population.

Study objective

To describe clinical characteristics and outcome of patients with pulmonary melioidosis.

Methods

We embarked on a retrospective analysis of microbiologically confirmed melioidosis cases from October 2007 until February 2012.

Results

Pulmonary melioidosis was found in 35 out of 48 patients. The median age of patients were 36 years, with majority being males (68.6%). Most patients were involved in farming, forestry and fishing (57.1%), followed by children and teenagers (14.3%). 65.7% of patients had no pre-existing medical co-morbidity. The mean fever duration prior to admission was 13.3 days. Majority of patients had at least 2 organ failures upon admission including renal failure (60%). We found some *Burkholderia pseudomallei* strains with gentamicin sensitivity of unknown significance. 65.7% of cases had severe pulmonary melioidosis requiring intensive care (ICU) admission for respiratory failure or septic shock. Overall mortality was 62.7%, but this increased to 95.7% if ICU care was required.

Conclusion

Pulmonary involvement carried a higher rate of mortality despite appropriate treatment and intensive support. Our patients were younger and the majority had no medical co-morbidity. A high index of suspicion and early referral may influence the clinical outcome.

EARLY EXPERIENCE WITH BRONCHOSCOPY-GUIDED PERCUTANEOUS DILATATIONAL TRACHEOSTOMY IN SABAH

M Redzwan Rashid Ali, A Ibrahim, K K Sivaraman Kannan

Respiratory Department, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

Introduction

Bronchoscopy Guided Percutaneous Dilatational Tracheostomy (BGPDT) using Ciaglia (Blue Rhino) Single Dilator technique is a new service offered by our Department in a tertiary hospital in Sabah.

Methods

Case series was collected involving 6 cases referred to us for BGPDT from Medical High Dependency Unit (HDU) from December 2011- February 2012.

Description

Mean age of patient was 50 years, indication of referral was prolonged ventilation, underlying diagnosis included severe pneumonia (n = 2), meningoencephalitis (n = 1), anoxic brain injury (n = 2) and severe leptospirosis (n = 1). All 6 patients were male. 3 cases were performed in operating theatre and 3 at the bedside. Sedation used was intravenous fentanyl bolus and muscle relaxant (atracurium/rocuronium). Mean days of ventilation before procedure was 14 days. Mean procedure time was 20 minutes. Mean blood parameters were Hb 10.5g/dl. Ventilation settings of all patients was SIMV/CPAP, with FiO2 < 0.55 and PEEP < 10. 2 patients had transient intraoperative hypoxia due to air leak after removal of endotracheal tube and cuff release, which resolved. No other intraoperative complications occurred. No patients suffered bleeding, infection or decannulation on follow-up (Days 1, 7, 30).

Conclusion

Bronchoscopy guided PDT is a relatively easy to learn and safe procedure. It allows earlier and more rapid insertion of tracheostomy, hence it reduces waiting time plus it is cost effective mainly due to reduced usage of OT time. It also has less postoperative complications, less perioperative & postoperative bleeding rates and less stoma infection rates if compared to surgical tracheostomy. BGPDT may reduce risk of intraoperative complications in our case such as failed cannulation, bleeding and perforation of tracheal wall/ring fracture.

CONCOMITANT SMEAR-POSITIVE PULMONARY AND PLEURAL TUBERCULOSIS AND METASTATIC ADENOCARCINOMA OF LUNG IN A YOUNG FEMALE PATIENT

M Redzwan Rashid Ali, Siti Hajar Sanudin, K K Sivaraman Kannan

Respiratory Department, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

Introduction

This case describes the presentation and management of a young female patient who was diagnosed with smear-positive pulmonary and pleural TB that was not resolving with antituberculosis therapy (ATT).

Case Presentation & Management

A 28 year-old Kadazan woman presented with fever, cough and symptoms of pleurisy for 4 months. Clinical examination revealed cachexia and evidence of right-sided pleural effusion and consolidation. Chest radiograph showed consolidation and right pleural effusion. Sputum AFB was 1+ positive (scanty). She was started on standard ATT but presented back on day 14 with ATT induced hepatitis and it was withheld. Pleural effusion was worsening but she refused invasive treatment. ATT was rechallenged gradually once hepatitis improved after 10 days. She later consented to therapeutic pleural tapping; and subsequently to pleuroscopic drainage and biopsy after the effusion kept recurring and symptoms worsened. Pleuroscopy revealed grossly nodular parietal/visceral pleura and biopsy confirmed metastatic adenocarcinoma of lung. She underwent palliative chemotherapy after completing 2 months of intensive ATT but succumbed after 1 cycle.

Learning points

1. Importance of open pleural biopsy (pleuroscopy) in diagnosing pleural TB especially in recurrent effusion to rule out malignancy, even in young patients.

2. Unresolving suspected TB effusion might be due to concomitant malignancy or inadequate ATT duration/treatment interruption.

3. Awareness of protean manifestation of metastatic adenocarcinoma, which can present simultaneously with pulmonary/pleural TB, even in young patients.

4. Metastatic adenocarcinoma of lung is usually more frequent, can be more aggressive but has better survival rates in young female patients compared to elderly patients.

5. Recognition of ATT induced hepatitis and methods of rechallenge.

FOREIGN BODY-THUMBTACK REMOVAL VIA RIGID BRONCHOSCOPY UNDER SEDATION

M Redzwan Rashid Ali, Lee Kok Soon, K K Sivaraman Kannan

Respiratory Department, Hospital Queen Elizabeth, Kota Kinabalu, Sabah, Malaysia

Introduction

This is the first case reported in Malaysia involving the management of removing a sharp foreign body (thumbtack) in a 13-year-old girl via rigid bronchoscopy under sedation.

Case Presentation

A 13-year-old girl presented with coughing and blood-streaked sputum after accidentally swallowing a thumbtack 4 hours previously. Clinical examination revealed a morbidly obese girl, comfortable at rest, with stable vital signs and pulse oximetry of 100 percent on room air. Breath sounds were vesicular and equal. Blood parameters were normal. Imaging (cervical, neck and chest radiograph) revealed the thumbtack lodged in the right bronchus.

Management

Rigid bronchoscopy was done under sedation 2 hours after presentation in operating theatre. Sedation was given (intravenous propofol infusion and fentanyl bolus) with spontaneous ventilation and intermittent assisted breathing. A rigid bronchoscope (tracheal tube) was inserted and airway inspected. The thumbtack was seen lodged at the right bronchus intermedius with its sharp end partially embedded in mucosa. She was positioned in Trendelenburg position; a rigid forceps was used to grab the sharp end. It was removed en bloc together with the tracheal tube and telescope. No complications occurred. She was discharged well the next day.

Learning points. Illustrates the importance of emergency rigid bronchoscopy removal of sharp foreign body under sedation (total intravenous anaesthesia) with proper positioning to avoid distal dislodgement & to avoid complications e.g., collapse, obstructive pneumonia, bleeding due to mucosal tear and mediastinitis. Delayed diagnosis and removal can result in serious complication that would necessitate removal via thoracotomy. Other newer suggested method of removing sharp foreign body includes laser-assisted removal using ND YAG.

NON-ADHERENCE TO PULMONARY REHABILITATION AMONG COPD PATIENTS IN A MALAYSIAN HOSPITAL

R Ayiesah[1], W K Tang[1], S Riza[2], A T Nor Adina[3]

[1]Physiotherapy Programme, Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia
[2]Physiotherapy Department, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia
[3]Medical Department, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Background

Pulmonary rehabilitation programme (PRP) is a multidisciplinary programme specially designed for patients with chronic obstructive pulmonary disease (COPD). This study examines the barriers to attendance to PRP carried out among COPD patients at the physiotherapy department in UKMMC.

Method

The study uses a mixed method and the study design is concurrent nested. Semi-structured interviews were done among COPD patients. The qualitative data was transcribed, coded and inter-coder reliability test was carried out prior to analysis with SPSS.

Results

There were 52 subjects with 43 males and 92% were aged more than 65 years old; 51 subjects are married, with 41 of them retired. Findings showed the inter-coder reliability was high with kappa value higher than 0.73. The identified common themes to adherence to PRP were poor disease knowledge and poor understanding of the benefits of PRP. Other factors included transport problems, relying on family members to fetch and send them to hospital, reduced priority to exercise and long distances between home and hospital. Interestingly, good family support did not show a positive influence on attendance and adherence to the PRP.

Conclusion

Adherence is dependent on understanding of the disease and benefits of PRP, improved transportation and personal factors such as patient motivation and their priorities in life. Further involvement of health professionals in promoting the PRP and creating awareness of its benefits among COPD can facilitate adherence to such programs.

MULTIDRUG-RESISTANT TUBERCULOSIS IN INSTITUT PERUBATAN RESPIRATORI MALAYSIA

R Yasin, Z Abu Bakar, A K Goon, A R Muttalif, A Ahmad Mahayiddin

Institut Perubatan Respiratori, Kuala Lumpur, Malaysia

Introduction

Multidrug-resistant tuberculosis (MDRTB) is a major problem in TB control programmes globally. The incidence of MDRTB in Malaysia is increasing over the last few years. The treatment is second-line anti-tuberculous drugs and the outcome is worse compared to pan-susceptible TB.

Objectives

The objectives were to determine the demographic characteristics and to describe the outcomes of MDRTB patients in our center.

Methodology

A 5-year retrospective study of MDRTB diagnosed in Institut Perubatan Respiratori (IPR) was carried out. Patients were identified from sputum *mycobacterium tuberculosis* culture and sensitivity records from January 2007 to December 2011. Data collection was based on individual patient's notes.

Results

The total number of MDRTB cases diagnosed during the period was 52. The median age was 37, range from 14 – 61 years old. Two-thirds of cases were male (67.3%). 28 (53.8%) were Malaysian and 24 (46.2%) foreign-born. The majority of patients were Myanmarese (34.6%), followed by Malays (25.0%), Chinese (17.3%), Indian (11.5%), Indonesian (9.6%) and others (1.9%). The majority of MDRTB cases were acquired (67.3%). All patients received second-line therapy. As for the outcome, out of 52 cases, 26.9% were cured, 25.0% defaulted treatment, 11.5% were transferred out, 7.7% died and 28.8% are still on treatment. We found significant correlation between severity of radiological findings and disease complications with the patients' outcome ($P < 0.001$ and $P < 0.005$ respectively) i.e., between patients who were cured and who died during treatment. However, the duration of symptoms, the pattern of drug resistance and the regimen of second line treatment were not significantly correlated with patients' outcome ($P=0.162$, $P=0.210$ and $P=0.863$).

Conclusion

Our results demonstrated that the majority of MDRTB cases were acquired. The cure rate in studied cohort was 26.9% and death rate 7.7%. Radiological findings of advanced PTB and disease complications during treatment were associated with poor outcome.

COMPARISON OF THE SENSITIVITY OF HIGH RESOLUTION MELTING ANALYSIS AND SCORPION AMPLIFICATION REFRACTORY MUTATION SYSTEM IN EPIDERMAL GROWTH FACTOR RECEPTOR MUTATION DETECTION

Tiffany Ng Shi Yeen[1], Cheah Yoke Kqueen[1], Shiran Mohd Sidik[2], Ahmad Zaid Fattah Azman[3], Pathmanathan Rajadurai[4]

[1]Department of Biomedical Sciences, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor, Malaysia
[2]Department of Pathology, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor, Malaysia
[3]Department of Community Health, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Serdang, Selangor, Malaysia
[4]Monash University, Bandar Sunway, Malaysia

Introduction

Real-time based platform for polymerase chain reaction (PCR) is a powerful method for mutation scanning. We compared two technologies: the Scorpion Amplification Refractory Mutation System (SARMS) and high resolution melting analysis (HRMA) for their sensitivities in epidermal growth factor receptor (EGFR) mutation detection.

Methodology

EGFR testing was carried out on eligible non small cell lung cancer (NSCLC) patients using EGFR PCR Kit (QIAGEN Manchester Ltd., United Kingdom). We performed HRM analysis on selected genomic samples with known mutation to test its sensitivity in EGFR mutation detection.

Results

Results were quite consistent with the data obtained by EGFR Scorpion kit. HRMA was completed in 100 samples with known exon 19 (deletions) mutations, and 99 samples were identified as having mutation. Meanwhile, of 75 samples with known exon 21 (L858R/ L861Q) mutations, 74 samples were identified as having mutation. The sensitivity of detecting mutations in exon 19 and 21 was 99% (99/100) and 98.7% (74/75) respectively.

Conclusions

HRMA identifies EGFR mutation with comparable sensitivity to commercially available kit.

RETROSPECTIVE STUDY OF TUBERCULOSIS PATIENTS IN BINTULU, SARAWAK: 2010-2011

Rosmadi Ismail[1], Mae Yue Tan[2], Selamah Arsat[3], Norma Mahrup[3], Jin Shyan Wong[1]

[1]Bintulu Hospital, Sarawak, Malaysia
[2]Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[3]Tuberculosis Control Program Centre, Klinik Kesihatan Bintulu, Sarawak, Malaysia

Introduction

Malaysia has intermediate burden of tuberculosis(TB). Bintulu is one of the major towns in Sarawak, with a population of 200,000 (2010 data). This is a retrospective study of TB patients in Bintulu from 2010 to 2011.

Methodology

All patients' records in the TBCP (Tuberculosis Control Programme) Centre Bintulu were reviewed.

Results

A total of 519 cases were identified from January 2010 to December 2011. 61(12%) patients were transferred out to other districts, and 485(88%) patients were analysed. There were 84.7% Malaysians, while 15.3% were foreigners, mainly Indonesian manual workers. Majority were male (64.2%). Median age was 40.5 (IQR=29). 69.1% were from the working age group. 81.7% had pulmonary TB while 18.1% had extra-pulmonary manifestations. 63.4% of pulmonary TB patients had positive sputum smears. 92.6% were newly reported cases. 61.4% successfully completed treatment with 10.1% still currently undergoing treatment. 79 (17.2%) cases defaulted treatment: foreigners were more likely to default (OR = 18.74, CI = 10.26-43.23, p = 0.004) compared to Malaysians, mostly returning back to their respective countries. Among the Malaysians, smokers were more likely (OR = 2.576, CI = 1.265-5.245, p = 0.007) to default treatment. 5 (1.1%) patients developed multi-drug resistance (MDR). Univariate and bivariate analysis did not show any significance in demographics, co-morbidities and type of TB infection among TB mortality outcomes. 242 and 277 cases of active TB were notified in 2010 and 2011 respectively, showing a 14.5% increase in notified cases. While there was an increase in defaulter rates from 13.6% to 16.1% from 2010 to 2011, the mortality rate had reduced by half (4.1% to 2.16%), achieving the target of less than 3 death per 100,000 population, which is one of the objectives of the National TBCP.

Conclusion

More can be done to detect cases early and to reduce the defaulter rates, to help lower the mortality from TB.

A COMPARISON OF QUANTIFERON®-TB GOLD IN-TUBE TEST AND TUBERCULIN SKIN TEST IN THE DIAGNOSIS OF LATENT TUBERCULOSIS INFECTION AMONGST PATIENTS UNDERGOING REGULAR HAEMODIALYSIS

L K Lem, R Abd Manap, A H Abdul Gafor, M Mohammad, R Harun, S M Idrus Alhabshi, S Azhar Shah

Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Introduction

Detection of latent tuberculosis infection (LTBI) in the haemodialysis population is important as these patients are susceptible to developing active tuberculosis. Extensive use of the Bacille Calmette-Guérin (BCG) vaccination has compromised the specificity of tuberculin skin test (TST) in diagnosing LTBI.

QuantiFERON®-TB Gold In-tube test (QFT), an interferon gamma release assay has shown good results to detect LTBI in immunocompromised hosts, including haemodialysis patients.

Objective

This study aimed to determine and compare the detection rate of LTBI in haemodialysis patients using QFT and TST. The secondary objective was to determine the association of end-stage renal disease patients' baseline characteristics with TST and QFT results.

Method

This was a cross sectional study involving 91 patients from PPUKM who receive regular haemodialysis. All patients had TST, QFT and chest radiograph (CXR) done. The patients with CXR findings suggestive of active PTB were excluded.

Results

The detection rate of LTBI was 28% (25 patients) using QFT and 8% (7 patients) using TST. There were 19 patients (21%) with QFT+/TST-. Among 84 patients with negative TST, 19 (23%) patients had positive QFT. Only one patient had indeterminate QFT. There was one patient with TST+/QFT-. Except for high number of positive TST in males, none of the patients' baseline characteristics affected the positivity of TST and QFT. The agreement between TST and QFT was low (κ statistical value = 0.046, $p = 0.002$).

Conclusion

The detection rate of LTBI is significantly higher using QFT as compared to TST in haemodialysis patients. There were no identifiable risk factors affecting results of TST and QFT in this study.

EARLY EXPERIENCE WITH RIGID BRONCHOSCOPY UNDER GENERAL ANAESTHESIA USING TOTAL INTRAVENOUS ANAESTHESIA (TIVA) IN SABAH

M Redzwan Rashid Ali, S H Sanudin, K K Sivaraman Kannan

Department of Respiratory Medicine, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

Objective

To analyse feasibility, safety, and complication rates of rigid bronchoscopy under total intravenous anaesthesia (TIVA) in our hospital.

Design

Retrospective study in all patients that underwent elective diagnostic and interventional rigid bronchoscopy in our department from 1st January 2012 to 1st May 2012.

Patients & Procedures

46 patients underwent elective rigid bronchoscopy (mainly diagnostic transbronchial lung biopsy, endobronchial biopsy, transbronchial needle aspiration, bronchial lavage and dilatation) in our centre using TIVA as sedation of choice without use of paralysing agents or inhalational agents.

Results

Majority of patient were of ASA (American Society Of Anaesthesiology) score II. Mean patient's age was 35.6 years. 56.5% of patients were male. Mean procedure time was 29.1 minutes. Mean time in recovery room was 28.4 minutes. Dose of sedation used ranged from fentanyl bolus (0 – 50 mcg), propofol bolus (0 – 50 mcg) together with TCI (targeted controlled infusion) propofol. Biopsy yielded malignancy (23.9%), granuloma (17%)and normal lung tissue (19.6%). There were 37% intraoperative complications (19.6% minimal bleeding, 8.7% transient hypotension, 6.5% severe bleeding, and 2.2% transient desaturation). 10.9% developed postoperative complications such as hypotension, bronchospasm, prolonged ventilation and pneumothorax. There was one mortality post-procedure. Patients with higher ASA scores were most likely to develop postoperative complications ($p < 0.003$) but ASA scores did not alter intraoperative complication rates or recovery period duration. TIVA dose did not influence intraoperative/postoperative complications, duration of procedure or time the occurrence of in recovery room.

Conclusion

Rigid bronchoscopy using TIVA is safe and complications are usually due to the procedure itself, which are easily reversible. Further prospective studies are required to evaluate the efficacy of TIVA compared to other methods of anaesthesia.

A RARE CASE OF REEXPANSION PULMONARY OEDEMA POST PLEUROSCOPY IN A YOUNG MAN

Aisyah A J, M Redzwan Rashid Ali, K K Sivaraman Kannan

Department of Respiratory, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

Introduction

This case describes reexpansion pulmonary oedema (REPO) which is a rare complication of post-pleuroscopic biopsy and drainage, particularly if the lung has collapsed for a prolonged period.

Case History

A 33-year-old army officer presented with symptoms of pleurisy and cough for 5 months. Clinically, he was cachexic with normal vital signs. Chest radiograph revealed massive right-sided pleural effusion. Diagnostic thoracocentesis revealed hemorrhagic effusion with an exudative features. Pleuroscopic drainage and biopsy were done revealing multiple nodules of varying sizes over the parietal pleura and diaphragm. Biopsy was taken and 2.5 litres of hemorrhagic fluid was drained. 30 minutes post-procedure, he developed severe intractable cough with frothy sputum with BP 100/70, PR 163, pulse oximetry 80% under room air. Clinically, there were fine generalized crepitations especially over the right lung fields with good air entry. He was given high-flow oxygen, boluses of intravenous frusemide and steroids. Coincidentally, he also developed supraventricular tachycardia which resolved with intravenous amiodarone infusion. He recovered after 1 day of observation. Biopsy later revealed metastatic adenocarcinoma of lung.

Conclusion

REPO is a rare complication of post pleuroscopy drainage that occurs more frequently in a collapsed lung of more than 72 hours. Pleural manometry has been suggested to measure the pleural pressure during thoracocentesis or chest tube insertion for massive pleural effusion and pneumothorax. Other suggested methods for avoiding this complication include limiting drainage to less than 1.5 litres. Suggested treatment in case reports include mechanical ventilation, NIV, steroids, diuretics and NSAID. SVT may be present as part of the REPO complication.

CHARACTERISTICS AND OUTCOME OF PATIENTS WITH ACTIVE PULMONARY TUBERCULOSIS REQUIRING INTENSIVE CARE UNIT ADMISSION

R Yasin[1], N I Ismail[2], N Marzuki[1], L L Tai[2], A R Muttalif[1]

[1]Institut Perubatan Respiratori, Kuala Lumpur, Malaysia
[2]Intensive Care Unit, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Introduction

Pulmonary tuberculosis (PTB) remains an important public health problem globally, including Malaysia. Severe PTB requiring intensive care unit (ICU) admission is rare. Previous studies show that the most common reasons for ICU admission in patients with active PTB are the development of acute respiratory distress syndrome (ARDS), multi-organ failure and PTB with HIV co-infection. Outcome of the patient is significantly poor with high in-hospital mortality rate.

Objectives

The study aims to describe the clinical characteristics and outcome of patients with PTB requiring intensive care unit admission in our centre and to identify the risk factors associated with in-hospital mortality.

Methodology

We conducted a retrospective cohort study, between January 2012 and May 2012. Patients with smear positive PTB admitted to ICU, Hospital Kuala Lumpur were identified and enrolled. Clinical presentation, demographic, radiological and bacteriological data were collected based on individual patient's notes.

Results

Results will be presented during the congress.

VALIDATION OF SERUM CCL5 IN PREDICTING ASTHMA CONTROL STATUS

NA Abu Bakar, Roslan H, AYL Ban, H Mohd Noor

University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

Introduction

Much attention has recently been focused on biomarkers in asthma, not only to assess underlying airways inflammation but also to identify future risk of poor asthma control or exacerbation.

Objectives

The aims of this study were to determine the association between serum CCL5 and asthma control status and to determine whether serum CCL5 can be used as a biomarker to predict asthma control.

Methodology

A total of 77 subjects with chronic stable asthma were recruited and their asthma control status was assessed using Asthma Control Test (ACT). The serum CCL5 was measured using ELISA method at baseline. The subjects with controlled asthma (ACT score of 20 or more) were contacted every month for a maximum duration of 16 weeks to determine the ACT score.

Results

The serum CCL5 was significantly higher in the uncontrolled group (n = 26) compared to the controlled asthma group (n = 51) (18.76 (10.45 – 28.32) versus 28.45 (16.45 - 35.09) ng/μL, p = 0.007). However, there was no significant difference in the serum CCL5 level between the subjects whose asthma remained under control and those whose asthma became uncontrolled during the 16 weeks follow-up. Serum CCL5 was also found to be significantly higher in Indians compared to Malay and Chinese (p = 0.005).

Conclusions

A high serum CCL5 level is associated with uncontrolled asthma. However, serum CCL5 is unable to predict and monitor future asthma control status.

USAGE OF METAL AND MODIFIED CHEST TUBE TROCAR TO PERFORM MEDICAL THORASCOPY, THE SARAWAK EXPERIENCE

J L Won , S T Tie, Y L Ting, J A Jimbai, M Mathlan

Hospital Umum Sarawak, Kuching, Sarawak, Malaysia

Introduction

Medical thorascopy using a flexi-rigid scope is a useful tool to manage undiagnosed exudative pleural effusion. The performance of medical thorascopy involves the insertion of a plastic trocar sleeve to facilitate the flexi-rigid scope. The plastic trocar is expensive and is often the limiting factor to performing medical pleuroscopy early.

Aim

We examine our experience of using metal reusable trocar and modified chest tube for medical thorascopy.

Method

We collected data regarding the usage of metal trocar, and compared the duration of chest tube, the pain score and the complication of metal trocar compared to plastic trocar and modified chest tube.

Findings

We studied 33 patients. Metal trocar was used for 14 patients, plastic trocar for 8 and modified chest tube for 9 patients. There was no difference in the pain level or complication rate among these 3 groups. Modified chest tube was the most difficult to use.

Conclusion

In places where cost of plastic trocar is prohibitive, metal trocar and modified chest tube method can be used.

USAGE OF HAND HELD SPIROMETER – VITALOGRAPH™ FOR THE DIAGNOSIS OF COPD, THE SARAWAK EXPERIENCE

J L Wong, S T Tie, Y L Ting, J A Jimbai, M Mathlan

Hospital Umum Sarawak, Kuching, Sarawak, Malaysia

Introduction

Chronic Obstructive Disease COPD is a disease on the rise. Making the correct diagnosis allows early usage of medication to slow down the progress of the disease and to avoid unnecessary usage of costly medication. Spirometry is vital in the diagnosis of COPD but is not available to the majority of patients in Sarawak. Patients have to travel hours to get a spirometry done, and this impedes the widespread usage of spirometry for the diagnosis and management of COPD.

Aim

As an alternative to desktop spirometry and expensive full lung function machines, a spirometry using a hand held spirometer is a cheaper alternative. We correlate the measurement obtained using desktop spirometer and hand held spirometer and assess their ease of use and their ability to diagnose COPD.

Method

We recruited all patients who came for spirometry. Patients were asked to perform the spirometry using hand held spirometer, and after 3 attempts, they were asked to perform the test again using conventional desktop spirometer. The best result from the 2 tests were compared and analysed.

Findings

Out of 21 patients, conventional spirometry revealed 8 had obstructive ventilatory defect in 8, restrictive ventilatory defect in 8 and 5 were normal. Hand held spirometry managed to detect 6 patients with obstructive ventilatory defect and 2 patients that were diagnosed as having obstructive ventilatory defect using the conventional method were diagnosed as having restrictive ventilatory defect. Out of the 21 patients, 5 patients had a 150mls difference between the FEV1 and FVC measured using the two methods.

Conclusion

Our study shows that while hand held spirometry may misdiagnose in some patients, in the majority of patients hand held spirometry findings correlated well with conventional desktop spirometry findings and can be used as an alternative in resource limited areas.

THE ASSOCIATION OF BODY MASS INDEX (BMI) WITH CLINICAL OUTCOMES IN PATIENTS WITH PULMONARY TUBERCULOSIS

N A Che Hamzah[1], D Muhamad[2]

[1]Department of Medicine, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia
[2]Hospital Lahad Datu, Sabah, Malaysia

Introduction

Tuberculosis is becoming an increasingly important problem worldwide especially with the alarming increase in the incidence of acquired immunodeficiency syndrome (AIDS). The association of Body Mass Index (BMI) with clinical outcomes in patients with pulmonary tuberculosis (PTB) has been studied worldwide but we are still lacking local data. BMI can be used as a screening tool to assess nutritional status. Low BMI has a strong relationship with the risk of tuberculosis and high BMI has been shown to be protective against tuberculosis among HIV-negative individuals, as well as against disease progression and mortality among those with HIV. This study aimed to evaluate the association of BMI with clinical outcomes in patients with PTB.

Methods

New patients registered with PTB were recruited from Respiratory Clinic, Hospital Universiti Sains Malaysia from March 2010 to May 2010. The end-point of the study was clinical outcomes which were defined as sputum conversion rate, weight gain and adverse drug reactions.

Results

127 patients were recruited, in which 123 (96.1%) were new PTB patients and 4 (3.1%) were relapsed PTB patients. 81 patients (63.3%) were sputum smear positive, 45 patients (35.3%) were smear negative and 1 patient (0.8%) had military TB. Upon registration, 65 patients (49.3%) were underweight (BMI < 18.5kg/m^2), 50 patients (41.2%) had normal weight (BMI 18.5-24.9 kg/m^2), 10 patients (7.4%) were overweight (BMI >25-29.9 kg/m^2) and 2 patients (1.6%) were obese (BMI >30kg/m^2). Univariate analysis showed no significant association between BMI and clinical outcomes of PTB ($p > 0.05$). 102 patients (95.4%) had weight increment and 98 patients (77%) had sputum conversion. 12 patients (9.0%) had adverse drug reactions and these were mainly from the lower BMI group.

Conclusion

Majority of patients with PTB were underweight. Most patients had good smear conversion response and weight gain, irrespective of their BMI. There was no significant association between BMI and clinical outcomes of PTB in our patients. However, 9.0% patients had adverse drug reactions and they were mostly from lower BMI group.

LARYNGOMALACIA, TRACHEOMALACIA AND BRONCHOMALACIA IN CHILDREN: MORBIDITY AND TREATMENT

Wong Weng Keong, Norzila Mohamed Zainudin, Asiah Kassim

Institut Pediatrik, Hospital Kuala Lumpur, Malaysia

Introduction

Chronic noisy breathing is one of the commonest causes of chronic respiratory diseases. Laryngomalacia is the commonest cause of chronic stridor in children.

Objectives

Two main objectives were to identify the causes of the noisy breathing and the morbidities associated with it.

Methodology

Retrospective data collection of cases referred to respiratory unit for noisy breathing from 2006-2011. Data collected included demographic factors, diagnosis, associated morbidities and treatment.

Results

Total of 110 cases were referred during the 5 years period. There were 56 case records that could not be retrieved. 54 case records were analysed. 51.8% of cases had malacic airways. Underlying causes were laryngomalacia (60.7%), tracheomalacia (3.6%), bronchomalacia (17.9%) and the remaining had mixed malacic airway. Males and Malays contributed to 57% and 60.7% respectively. Associated morbidities were cardiac (50%), neurological (28.6%), surgical (28.6%), swallowing disorder (17.9%), gastroesophageal reflux disease (64.3%) and lung parenchymal disease (50%). Fifteen were given intervention which included oxygen therapy or non-invasive ventilation.

Conclusion

Laryngomalacia, tracheomalacia and bronchomalacia are common causes of noisy breathing in children with multiple associated morbidities. Early intervention may reduce complications.

THE EFFECTIVENESS OF CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) TREATMENT ON PATIENTS WITH OBSTRUCTIVE SLEEP APNOEA (OSA)

Yee Kiat Tan[1], Rose Azzlinda Osman[2], Azira Ahmad Kamil[2], Nur Amani Aris[2], Norita Idris[2], Fauzi Anshar[2], Andrea Ban[2], Roslan Harun[1,2], Roslina A Manap[2]

[1]Universiti Kebangsaan Malaysia Medical Molecular Biology Institute, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia
[2]Department of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

Introduction

Patients with obstructive sleep apnoea (OSA) are usually obese with frequent interruption to their breathing when they are asleep. These interruptions are dangerous as it can cause hypoxia and sudden death in severe cases. CPAP treatment is one of the ways to reduce the severity of OSA.

Objectives

To determine the effectiveness of CPAP treatment on patients with OSA.

Methodology

112 patients referred for suspected OSA were recruited from UKM Medical Centre, Kuala Lumpur from 2008-2011. All patients underwent full polysomnography to determine their OSA status and severity followed by CPAP treatment. AHI (apnoea-hypopnoea index) was recorded based on pre and post-CPAP treatment. OSA severity was based on normal (AHI < 5), mild (AHI ≥ 5 < 15), moderate (AHI ≥ 15 < 30) and severe (AHI ≥30).

Results

Those studied included 73 severe OSA patients, 30 moderate, 7 mild and 2 normal patients. 80 patients were Malay, 20 Chinese and 12 Indian. 82 patients were male and 30 patients were female. Majority of patients were in the age range 37-56 years. 87 patients were obese,17 were overweight and 8 had normal weight. The mean baseline AHI was 46.6 ± 28.8 which decreased to 15.7 ± 14.7 following CPAP ($p < 0.001$, *paired t-test*). Normal AHI was achieved in 20.54% of patients following overnight CPAP treatment. There was significant correlation between AHI pre-CPAP treatment with BMI (body-mass index) ($p = 0.016$) and race ($p = 0.032$). In multiple regression analysis only BMI ($p = 0.009$) remained significantly associated with AHI before treatment.

Conclusion

BMI is an independent predictor of OSA severity and CPAP treatment helps to reduce AHI significantly.

CO-MORBIDITIES IN OBSTRUCTIVE SLEEP APNOEA PATIENTS ATTENDING SLEEP CLINIC

M N Kamarudin, S N A Zahari, NA Zakaria, M A Arippin, H Abdullah, M A Mohd Zim, W H Wan Mohamad, A I Ismail, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Batu Caves, Malaysia

Introduction

Obstructive Sleep Apnoea (OSA) is a condition where an individual develops breathing pauses and/or apnoea during sleep due to narrowing of air passage. OSA is also associated with cardiovascular comorbidities such as hypertension, diabetes mellitus, and hypercholestrolaemia. This study was done to determine the incidence of hypertension, diabetes mellitus and hypercholesterolaemia in patients attending the Sleep Clinic.

Method

Retrospective study of patients attending the multidisciplinary Sleep Clinic during June 2011 – March 2012 who underwent overnight full polysomnography. Information regarding patient demographics, height, weight, medical history and apnoea hypopnoea index (AHI) were retrieved from the electronic records. The sleep study was reported and scored manually.

Result

60 patients with complete data were included in this study. 40 patients had severe OSA (AHI > 30), 12 patients had mild-moderate OSA (AHI > 5 - 30) and 8 patients had normal AHI.

	Hypertension	Diabetes Mellitus	Hyper cholesterolaemia
Severe AHI > 30/hr n = 40	65%	35%	45%
Mild – Moderate AHI 5 – 30/hr n = 12	83%	50%	42%
Normal AHI < 5 n = 8	12.5%	12.5%	12.5%

Conclusion

There was a high percentage of hypertension, diabetes mellitus and hypercholesterolaemia in patients with severe and mild to moderate Obstructive Sleep Apnoea.

SIX MINUTE WALK TEST AS AN OUTCOME MEASURE TOOL IN IDENTIFYING PATIENTS IMPROVEMENT IN TERMS OF WALKING DISTANCE

S A N Ismail[1], M N Kamarudin[1], I S Rosli[2], T Ismail[1], A R Mutaliff[2]

[1]Respiratory Unit, Faculty of Medicine, UiTM, Campus Selayang, Malaysia
[2]Physiotherapy Department, Institut Perubatan Respiratori, Kuala Lumpur, Malaysia

Introduction

Six minute walk test is commonly used as a baseline assessment in respiratory patients who are selected for Pulmonary Rehabilitation Program. Within the period of six minutes, the patient needs to walk as fast and as far as they could. A repeat 6MWT will be performed at the final (eighth) week of the Pulmonary Rehabilitation Program to identify any improvement in the distance covered in the 6MWT.

Objective

To determine the improvement in walking distance in patients who attended the Pulmonary Rehabilitation in Physiotherapy Department, IPR, following 8 weeks of Pulmonary Rehabilitation program.

Methods

42 COPD patients (mild to severe) who attended the Pulmonary Rehabilitation program were included in this study. Patients underwent a 6MWT at baseline and attended Pulmonary Rehabilitation program for eight weeks. A repeat 6WMT was performed at eighth week of the program.

Results

COPD STAGE	Average improvement in distance covered after 8 weeks of Pulmonary Rehabilitation program
Mild	42.56 meter
Moderate	2.36 meter
Severe	26.88 meter

Conclusion

COPD patients attending Pulmonary Rehabilitation program had an improvement in their 6MWT distance following Pulmonary Rehabilitation program. This improvement is most marked in the mild COPD patients.

CHARACTERISTICS OF LUNG CANCER PATIENTS IN HOSPITAL SELAYANG

M A Abd Rahman, A I Ismail, W H Wan Mohamad, M A Mohd Zim, N S Bakar, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Malaysia

Introduction

There had been a change in histopathological pattern of lung cancer over the past two decades. As we are moving towards personalised lung cancer treatment, knowing the subtype of histological diagnosis may have prognostic value in the management for these patients.

Objectives

To describe the histological and demographic details of patients diagnosed with lung cancer between 2006 - 2012 in Hospital Selayang.

Materials and Methods

Records were obtained from all confirmed lung cancer patients between April 2006 and April 2012. Demographic details collected include age, gender, race and smoking history.

Results

Two hundred and twenty three patients were included in this study. There were 164 males and 59 females. The lung cancer histological diagnosis was adenocarcinoma in 36.8%, undifferentiated in 33.2%, squamous in 20.2% and small cell lung cancer in 9.9%. Majority of the patients were Chinese (50.2%) followed by Malay (43%) and Indian (6.3%). The average age of diagnosis was 62.3 years. There were 137 (125 male, 12 female) smokers, 57 (19 male, 38 female) non-smokers and 29 (20 male, 9 female) with unrecorded smoking history. Histological diagnosis was obtained from bronchial biopsy (56.1%), radiology-guided biopsy (19.7%), pleural biopsy (9.9%), and bronchial alveolar lavage cytology (11.7%). Patients with adenocarcinoma comprised 51 males (9 non-smokers) and 31 females (26 non-smokers).

Conclusion

Adenocarcinoma was the commonest histopathological diagnosis for lung cancer patients in this study. Most patients were elderly and the majority of males were smokers. The most common method of diagnosis was bronchial biopsy.

CORRELATION BETWEEN BODY MASS INDEX (BMI) AND APNOEA HYPOPNOEA INDEX (AHI) IN PATIENTS ATTENDING SLEEP CLINIC

H Abdullah, N A Zakaria, S N A Zahari, M A Arippin, M N Kamarudin, M A Mohd Zim, W H Wan Mohamad, A I Ismail, T Ismail

Faculty of Medicine, Universiti Teknologi MARA, Batu Caves, Malaysia

Introduction

Obstructive Sleep Apnoea (OSA) is a condition where an individual develops breathing pauses or apnoeas during sleep due to narrowing of air passage. OSA is also associated with obesity. Studies have shown that the risk of developing OSA is increased with a higher BMI.

Objective

The purpose of this study was to identify the correlation between BMI and the severity of AHI in patients attending the multidisplinary (MDS) sleep clinic.

Methodology

Patients attending the sleep clinic from June 2011 - March 2012 were included in this study. Information regarding the patient's demographic height, weight and AHI were retrieved from Hospital Information System (HIS). The correlation between BMI and AHI were analysed using SPSS version 16.

Results

60 patients were included in this study. There were 40 patients with severe OSA (AHI > 30/hr), 12 patients had mild to moderate (AHI 5 – 30/hr) and 8 patients did not have OSA (AHI < 5/hr). There was a positive correlation between BMI and AHI ($r = 0.26$, $p = 0.01$).

Conclusion

Patients with higher BMI are at higher risk of developing OSA.

FATAL PNEUMONIA FOLLOWING SEARCH AND RESCUE OPERATION

S H How[1], R Rajalingam[2], Y C Kuan[1], A Norazah[3], A I Ismail[4], Iskandar[5], M Sapian[5]

[1]Department of Internal Medicine, Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[2]Hospital Sultan Haji Ahmad Shah, Pahang, Malaysia
[3]Institute of Medical Research, Kuala Lumpur, Malaysia
[4]Faculty of Medicine,Universiti Teknologi MARA, Kampus Selayang, Selayang Batu Caves, Malaysia
[5]Pahang State Health Department, Kuantan, Pahang, Malaysia

Introduction

On 26th June 2010, a young man was suspected to have drowned at Lubuk Yu, a natural recreational forest with river and waterfall in Pahang. A rescue team was formed, comprising of 150 members from police officers, army officers, divers, firemen and volunteers from a nearby village. His body was recovered five days later. Following this rescue operation, at least 22 people presented with an acute febrile illness.

Objective

To describe ten patients with melioidotic pneumonia.

Results

Six were culture-confirmed for melioidosis only while four were positive for leptospirosis (based on polymerase chain reaction) and melioidosis. All except one had diabetes mellitus. Among these 10 patients, all had fever and cough, 8 had shortness of breath. Surprisingly, symptoms of myalgia, diarrhoea and vomiting were the presenting complaints in some of these patients. Chest radiograph showed bilateral consolidation in 6 and 7 patients died.

Conclusions

Melioidotic pneumonia in this series was associated with high mortality.

EFFECT OF ALLERGIC RHINITIS AND ITS' TREATMENT ON ASTHMA CONTROL

Chua K T, Liam C K, Pang Y K, Lai N L, Kow K S, Poh M E

Division of Respiratory Medicine, Department of Medicine, University of Malaya, Kuala Lumpur, Malaysia

Objectives

To assess the association of allergic rhinitis (AR) and its treatment with Asthma Control Test (ACT) score and asthma exacerbation (AEBA).

Methodology

Patients attending the Asthma Clinic of University Malaya Medical Centre from 1st January 2011 to 30th June 2011 were recruited. The patients' demographic and clinical features including the presence of AR symptoms and AR treatment, ACT score and history of AEBA over the last year were documented. Asthma control was classified as total control (TC), well controlled (WC) and not well controlled (NWC) according to an ACT score of 25, 20 – 24 and < 19, respectively.

Results

Of 624 patients recruited, 421 (67.5%) had AR. The percentages of patients with TC, WC and NWC asthma were 9.3%, 47.3% and 43.5% in those with AR and 9.9%, 52.2% and 37.9% in those without AR (p = 0.418). Patients with AR had a mean ACT score of 18.90, compared to 19.58 in those who did not (p = 0.100). Of patients with AR, 59 (14.0%) experienced AEBA compared to 28 (13.8%) of those without AR (p = 1.000).

Of the 421 patients with AR, 276 (65.6%) received treatment for AR. Among the AR patients, the percentages with TC, WC and NWC asthma were 8.7%, 47.1% and 44.2% in those on AR treatment and 10.3%, 47.6% and 42.1% in those not on AR treatment (p = 0.768). The mean ACT score was 18.77 for those on AR treatment and 19.16 for those not on AR treatment (p = 0.445). 43 (15.6 %) of AR treated patients had AEBA compared to 16 (11.0%) patients not treated for AR (p = 0.238).

Conclusions

The presence of AR and its treatment did not significantly impact on asthma control and exacerbation.

JEUNE SYNDROME WITH RECURRENT RESPIRATORY DISTRESS – THE ROLE OF CPAP

K H Chuah, R A Awang

Hospital Pulau Pinang, Pulau Pinang, Penang, Malaysia

Jeune syndrome or asphyxiating thoracic dystrophy is a rare autosomal recessive skeletal dysplasia characterised by small, narrow thorax and short-limbed dwarfism. We report a case of a 2-year 4-month-old female patient, who is an ex-premature infant at 34 weeks who initially presented with baseline tachypnoea since birth and recurrent bronchiolitis-like picture. Her brother died at 8 months old with similar presentation. Her clinical features and x-ray were compatible with Jeune's syndrome. HRCT thorax showed narrowed left main bronchus without external compression. We have since then started her on CPAP. The role of CPAP is discussed in this case report.

EMPYEMA THORACIS IN PENANG HOSPITAL

M Fauzi, Basheer A K, M Hamzah

Department of Cardiothoracic Surgery, Hospital Pulau Pinang, Malaysia

Introduction

Early recognition of empyema is of prime importance. Accurate assessment of stages is crucial in planning management. Empyema is purulent pleural collection and it is a dynamic process. American Thoracic Society classifies empyema thoracis into 3 stages: exudative, fibropurulent and organising. Management ranges from simple antibiotic, chest drain, fibrinolytic to surgery (VATS or thoracotomy and decortication) according to the stage. There is lack of evidence-based criteria for the optimal timing of surgical intervention. We present the experience of our centre as a Northern referral centre for management of adult and paediatric empyema from year 2010 till now.

Method

All the cases identified from operative room registry. Case notes and follow-up clinic files were traced. Data was collected and tabulated using Microsoft Excel.

Result

Total of 92 patients were operated in our centre from year 2010. Patients were referred from all major hospitals and district hospitals in Penang, Kedah and Perak. Patient demographic data showed that there were more male patients than female. The age ranged from 2 months to 70 years old. Patients presented to a medical facility after having symptoms ranging from 1 week to 6 weeks before being referred to the Cardiothoracic team. Aetiology of the empyema thoracis was non tuberculous in more than 95% of cases. The majority of cases had right-sided empyema and organising stage of empyema. There was no mortality in this series of cases in our centre.

Conclusion

Surgical intervention in adult and paediatric empyema thoracis had a high success rate and good outcome. Early referral and intervention may expedite recovery.

MINI OPEN-WINDOW THORACOSTOMY: A VIABLE THERAPEUTIC OPTION IN INDICATED THORACIC EMPYEMA?

M Fauzi, Basheer AK, M Hamzah

Department of Cardiothoracic Surgery, Hospital Pulau Pinang, Malaysia

Introduction

Thoracic empyema continues to be surgically challenging and is associated with high morbidity and mortality. Failure to adequately evacuate the pleural space and presence of persistent signs of infection are indications for aggressive surgical intervention. Open Window Thoracostomy (OWT) is an invasive treatment option that is seldom indicated. It is a valid option only when other means have failed or are contraindicated. OWT involves the resection of 2 to 3 ribs from the dependent portion of the pleural cavity. The skin is advanced and brought down to the parietal pleural (pleurocutaneous fistula) and subsequently the cavity is filled with saline- soaked gauzes. Dressings are changed at least once a day.

Methods

OWT wound are accompanied by prolonged hospital stay and significant patient discomfort over an extended period of time. So we opted for mini OWT, where a smaller window less than 5x3cm is created. We did a retrospective study over a one year period on 4 patients with OWT whereby we looked at total hospital stay after surgery, total recovery period and mortality.

Result

Hospital stay after surgery was significantly reduced to between 5 to 10 days with total recovery between 3 to 7 months and there was no mortality.

Conclusion

OWT seems a worthwhile technique because of its potential for rapid control of severe life-threatening sepsis in desperate cases of pleural empyema with a low operative risk. The main shortcoming of the method, however, is the resulting prolonged granulating defect. Mini OWT can reduce this shortcoming significantly. However, a larger sample size will be needed in order to obtain more conclusive findings.

EIGHT YEARS OF LUNG AND HEART-LUNG TRANSPLANTATIONS IN MALAYSIA: INSTITUTE OF RESPIRATORY MEDICINE AND NATIONAL HEART INSTITUTE INITIAL EXPERIENCE

Dora A[1], Ashari Y[1], Zamzurina A B[1], Zuriyana M[1], Norzira R[1], Sharifah Suraya S T[2], Rais S[2], Mohd Ezani M T[2]

[1]Institute of Respiratory Medicine, Kuala Lumpur, Malaysia
[2]National Heart Institute, Kuala Lumpur, Malaysia

Introduction

Lung transplantation is the gold standard treatment for patients with end-stage lung diseases. It can prolong and dramatically improve the quality of life of these patients. The programme started in 2003 and it was in 2005 when Malaysia had the first lung transplant. It was the latest solid organ transplantation to be performed in Malaysia. To date, there have been a total of 9 lung and heart-lung transplantations performed in Malaysia.

Objective

This retrospective study is to review the initial experience accrued at Institute of Respiratory Medicine and National Heart Institute between 2003 to 2011 in the various forms of lung transplantations; heart-lung, double lung, and single lung.

Methods

The data of all patients who underwent lung and heart-lung transplantation were analysed.

Results

In 6 years, there were 9 lung transplants and heart-lung transplants performed. Most common diseases were idiopathic pulmonary fibrosis (5 cases), followed by idiopathic pulmonary artery hypertension (2 cases) and there was 1 case each of bronchiectasis and ventricular septal defect with Eisenmenger's syndrome. They were oxygen dependent prior to transplantation. Currently, 4 patients are still alive. The first lung recipient is still alive and enjoying his retirement. The last three patients are also still alive and two of them are back to work. The most frequent cause of death was infections (40%).

Conclusion

Our initial results with lung and heart-lung transplantation are quite encouraging. It is comparable with initial experience of other centres. It definitely improves the quality of life and may prolong the life of the patients.

TUBERCULOSIS AMONG FOREIGN BORN PATIENTS TREATED IN IPR – A CROSS SECTIONAL STUDY FROM SEPTEMBER TO DECEMBER 2011

Dora A A, Abdul Razak M

Institute of Respiratory Medicine, Kuala Lumpur, Malaysia

INTRODUCTION

The foreign-born population has been increasing in Malaysia due to rapid economic growth. Besides legal and illegal immigrants, Malaysia also hosts 97,000 registered refugees. These populations are mainly from countries with high tuberculosis (TB) burden.

OBJECTIVES

To study the characteristics of TB in the foreign-born population for TB control in Malaysia.

METHODS

A cross-sectional prospective questionnaire was administered from September to December 2011 during TB Clinic sessions in IPR on all foreign-born patients who had been treated with anti-TB treatment for 2 months' duration. Permanent residents were not included in this study.

RESULTS

170 foreign-born patients were treated in IPR in the 4-months period. Most of them were aged 25 to 44 years old and male. 64% of them were registered Myanmar refugees. 50% of total population had active TB less than 2 years after coming to Malaysia. It took 2 months for most of them to present to IPR from onset of symptoms. Due to this delay, they usually had pulmonary and extrapulmonary involvement. Drug-resistant TB was seen in 4.7% and duration of entry was less than 2 years. Most of them denied history of TB before or contact with PTB patient while 27% who admitted they had TB contact, and were mostly exposed in their country of origin.

CONCLUSIONS

Substantial improvement in TB screening should be done to refugees entering Malaysia by heath authorities. Drug resistant TB in these group are most likely primary transmission which putnative -born at risk of primary transmission of drug resistant TB.

EPIDERMAL GROWTH FACTOR RECEPTOR (EGFR) MUTATIONS ARE THE MAIN ONCOGENIC DRIVER MUTATION IN ADENOCARCINOMA IN NEVER-SMOKERS – FINDINGS FROM THE EMLAN STUDY

Liam C K[1], Leow H R[1], How S H[2], Pang Y K[1], Chua K T[1], Lai N L[1], Kuan Y C[2], Jayalakshimi P[3], Pathmanathan R[4]

[1]Division of Respiratory Medicine, Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[2]Department of Internal Medicine, International Islamic University Malaysia, Kuantan, Pahang, Malaysia
[3]Department of Pathology, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia
[4]Pathology Laboratory, Sime Darby Medical Centre, Subang Jaya, Malaysia

Introduction

Lung cancer, especially adenocarcinoma subtype, in never-smokers is distinct from other subsets of the disease clinically and also at the molecular level. In recent years, up to 90% of adenocarcinomas in East Asian never-smokers have been shown to harbour mutually exclusive oncogenic driver mutations such as EGFR mutations, HER2 mutations, KRAS mutations, ALK fusions and ROS1 fusion.

Objective

The objective of this study was to determine the frequency of EGFR mutations in adenocarcinoma in Malaysian never-smokers.

Methods

EGFR mutations in exons 18, 19, 20 and 21 in formalin-fixed paraffin-embedded tumour tissue from consecutive adenocarcinoma patients who attended the University Malaya Medical Centre (110 patients) and Hospital Tengku Ampuan Afzan, Kuantan (22 patients) from August 2010 to December 2011 were detected by real-time PCR.

Results

EGFR mutations were detected in the adenocarcinomas of 52 (39.3%) of a total of 132 patients. EGFR mutations were detected in the adenocarcinomas from 43 (63.2%) of 68 never-smokers, 8 (21.6%) of 37 ex-smokers and 1 (3.7%) of 27 current smokers ($p < 0.001$). In the 68 never-smokers, exon 19 and exon 21 mutations were detected in the adenocarcinomas from 33 and 10 patients, respectively. EGFR mutations were present in the adenocarcinomas from 21 (67.7%) of 31 female and 4 (57.1%) of 7 male Chinese patients ($p = 0.672$), 11 (61.1%) of 18 female and 2 (40%) of 5 male Malay patients ($p = 0.618$) and 5 (83.3%) of 6 female and none (0%) of 1 male Indian patients ($p = 0.286$).

Conclusion

EGFR mutations are the main oncogenic driver mutation in adenocarcinoma in Malaysian never-smokers, especially in female patients.

CORRELATION BETWEEN FENO WITH CLINICAL AND PHYSIOLOGICAL INDICES OF ASTHMA CONTROL IN A MALAYSIAN POPULATION

W H Wan Mohamad, T Ismail, R Abdul Razak, A N Yusof

Universiti Teknologi MARA, Selayang, Selangor, Malaysia

Introduction

Airway inflammation in asthma is driven mainly by eosinophils and mast cells. It correlates closely with FeNO levels. In Malaysia, there has been limited work on FeNO and asthma, and its role in clinical practice is undefined.

Objectives

This study aimed to assess the correlation of FENO with clinical symptoms and spirometry in asthmatics in Malaysia.

Method

A total of 126 subjects were identified over an 18 month period. Patients were aged between 12 – 75 years old, with an established diagnosis of asthma, recruited from a respiratory clinic. Exclusion criteria were recent (less than six weeks) respiratory tract infection or exacerbation, more than 10 pack year history of smoking, and concomittant diagnosis of allergic rhinitis or other lung conditions. All subjects had a clinical assessment by the attending physician and were required to fill up Asthma Control Test questionnaire. Subsequently, FeNO and spirometry were performed by trained technicians, according to current guidelines. Statistical analysis was done using Pearson correlation. A p value of less than 0.05 was considered significant.

Results

A total of 106 patients were recruited. Majority of the study population were female and of Malay origin. A positive correlation between symptom frequency over a one week period with FeNO was observed ($r = 0.185$, $p < 0.05$). Exclusion of 20 subjects was due to inability to produce an adequate FeNO blow.

Conclusion

FeNO may be a useful complementary tool for asthma management. However, routine use in a developing country must be considered carefully in view of limitation of resources and local published data.

PLEUROSCOPY – CLINCHING THE ELUSIVE DIAGNOSIS

Muventhiran R[1], A R Jamalul Azizi[2]

[1]Institut Perubatan Respiratori,Kuala Lumpur, Malaysia
[2]Hospital Serdang Selangor, Malaysia

Introduction

Pleuroscopy is a minimally invasive procedure that allows access to the pleural space using a combination of viewing and working instruments. It also allows for diagnostic (undiagnosed pleural effusion) and therapeutic procedures (pleurodesis) to be performed safely.

Case Report

A 57-year-old lady was diagnosed with rheumatoid arthritis at a tertiary teaching hospital 10 years previously. She was later diagnosed with lung fibrosis secondary to rheumatoid arthritis based on radiological findings and subsequently had been poorly compliant to follow-up. Nevertheless, the patient continued to take oral prednisolone. She presented twice last year with a left-sided pneumothorax. During her last admission, she was seen by the Cardiothoracic team and was deemed not suitable for surgical intervention in view of poor lung reserve. She was discharged with a fully expanded lung and pleurodesis was not attempted. She presented with a third episode of left-sided pneumothorax to the respiratory team this year. We proceeded with pleuroscopic examination where it was noted that the parietal pleura had whitish nodular lesions and multiple biopsies were taken. The biopsies confirmed tuberculosis (AFB for ZN stain was positive). She was initiated on anti-tuberculosis medication and subsequently improved.

Conclusion

The utility of pleuroscopy is not only limited to the management of pleural effusions but also plays an important role in the management of unexplained pneumothorax.

MANTOUX SCREENING AMONG HEALTH CARE PROFESSIONALS AT PENANG GENERAL HOSPITAL, A PRELIMINARY REPORT

Lalitha Pereirasamy[1], Amer Hayat Khan[2], Irfhan Ali[1]

[1]Department of Respiratory Medicine, Penang General Hospital, Penang, Malaysia
[2]Department of Clinical Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, Malaysia

Background

Healthcare professionals are at greater risk of having tuberculosis (TB) infection and latent TB.

Objectives

This cross-sectional study aims to evaluate the results of Mantoux testing conducted among healthcare professionals at Hospital Pulau Pinang.

Methodology

All healthcare professionals at Hospital Pulau Pinang were eligible to be screened. Screening was conducted for one month from 1/4/2012 – 30/4/2012. Data collection forms were used to collect demographics and clinical symptoms of tuberculosis. The Mantoux reading was documented after 72hours of intra-dermal purified protein derivative injection.

Results

A total of 68 healthcare professionals were screened. Among the studied population, fifty eight (85.3%) had confirmed contact with TB patients. Sixty-three (92.6%) had no medical illness. Sixty-two (91.2%) were Mantoux negative with a reading less than 15mm. Results of the Mantoux test were positive in only 12 (17.64%) of the studied population. No significant association was observed between population demographics, symptoms and result of Mantoux test.

Conclusion

Upon screening a small proportion, 17.6% of healthcare professionals had positive Mantoux test result. Follow-up imaging tests should be taken to detect early evidence of TB infection in this group. A lower Mantoux measurement may be required to avoid under-diagnosis of latent TB amongst health care workers.

IMPROVING DETECTION OF OBSTRUCTIVE SLEEP APNOEA BY OVERNIGHT OXIMETRY IN CHILDREN USING PULSE RATE PARAMETERS

Dg Zuraini Sahadan[1,2], Gillian Nixon[2,3], Margot Davey[2], Rosemary Horne[2,3]

[1]Paediatric Institute, Hospital Kuala Lumpur, Malaysia
[2]Melbourne Children's Sleep Centre, Monash Children's, Southern Health, Melbourne, Victoria, Australia
[3]The Ritchie Centre, Monash Institute of Medical Research, Monash University, Melbourne, Victoria, Australia

Introduction

Oximetry is a simple but insensitive screening tool for obstructive sleep apnoea (OSA) in children. We hypothesised that quantifying aspects of the pulse rate (PR) would improve oximetry as a diagnostic tool.

Methods

Of 144 children who underwent overnight home oximetry for diagnosis of OSA from 1 June 2009 – 31 May 2010, 94 had an inconclusive oximetry result and went on to have polysomnography (PSG). Oximetry (Masimo Radical, 2s averaging time) was analysed using Download 2001 software. PR parameters were selected based on the literature (PR-SD) or on average pulse rate differences between non-REM and REM sleep (PRI-8), difference between wake and sleep (PRI-10) and pulse rise following arousal from sleep (PRI – 15). OSA was defined as an obstructive apnoea-hypopnoea index (OAHI) ≥ 1.0/h. PR parameters were compared between those with and without OSA and with and without a total arousal index (AI) above 10/h using Student's t-tests.

Results

The median age of the children was 4.5y (range 0.8 – 16.5y; 55% Male) and 56/94 had OSA (median OAHI 1.8/h, range 0 – 24/h). PR-SD was not different between the OSA and non-OSA groups ($p = 0.87$). PRI (mean±SD) tended to be higher in those with OSA: PR-8 (OSA: 58.5±29.0 vs non-OSA: 48.6±20.2, $p = 0.07$), PRI-10 (45.1±25.0 vs 36.2±16.7, $p = 0.06$), PRI-15 (24.4±14.5 vs 18.9±9.0, $p = 0.04$). The differences seen for the whole group are more significant if children aged ≤ 5y were analysed separately ($p < 0.05$ for all PRI). Similar results were seen for an AI above 10/h: PRSD (AI ≥10: 9.2±1.8 vs AI <10: 8.7±1.2, $p = 0.35$), PRI-8 (56.4±27.8 vs 45.0±12.9, $p = 0.11$), PRI-10 (43.2±23.7 vs 33.1±10.9, $p = 0.09$), PRI-15 (23.2±13.6 vs 17.4±6.1, $p = 0.09$).

Discussion

PR indices, especially PRI-15, show promise as an indicator of OSA in children without significant desaturation especially in those aged less than 5y. PRI may be helpful in conjunction with other clinical measures in predicting OSA without PSG, which is the focus of further studies.

SEVERE OBSTRUCTIVE SLEEP APNOEA: PREDISPOSING FACTORS, MANAGEMENT AND OUTCOME AT OUR CENTRE

S C Su, A Rus Anida

Department of Paediatrics, Hospital Pulau Pinang, Penang, Malaysia

Introduction

Obstructive sleep apnoea (OSA) in children is predisposed by anatomical (adenotonsillar hypertrophy, craniofacial anomalies, nasal obstruction) and functional factors (neuromuscular diseases). Identifying the predisposing factors is important in determining the management and outcome.

Objectives

To determine the number of patients with severe OSA at our centre and their predisposing factors, management and outcome.

Methodology

A retrospective analysis of patients with polysomnography (PSG) done at our centre from 1st January 2011 to 31st December 2011.

Results

A total of 63 PSG was done for 56 patients. Out of these 63 PSG results, 61.9% showed OSA (11.1% mild, 20.6% moderate, 30.2% severe). Thirty five (62.5%) out of 56 patients who underwent PSG were diagnosed with OSA; 6 (10.7%) mild, 11 (19.6%) moderate, and 18 (32.1%) severe. Among the 18 patients with severe OSA, 77.8% were male and 22.2% were female. Predisposing factors identified were adenotonsillar hypertrophy (61%), obesity (50%), neuromuscular disease (28%), overweight (11%), adenoid hypertrophy (6%), and midfacial hypoplasia (6%). Out of 9 patients who underwent adenotonsillectomy, 3 were started on continuous positive airway pressure (CPAP). Post-operatively, they were all weaned off CPAP. Five patients with neuromuscular diseases were planned for bilevel positive airway pressure (BiPAP). Two patients were started on CPAP (1 refused surgery, 1 is awaiting adenotonsillectomy). One patient who refused surgery claimed to have improvement in symptoms and is planned for repeat PSG. One patient who was planned for surgery defaulted follow-up.

Conclusions

Patients whose predisposing factors were adenotonsillar hypertrophy showed improvement in symptoms and AHI post surgery. BiPAP is the mainstay of treatment for patients with severe OSA and neuromuscular disease.

AETIOLOGY OF PNEUMONIA IN CHILDREN AND USEFULNESS OF C-REACTIVE PROTEIN IN THE MANAGEMENT OF CHILDHOOD PNEUMONIA

Fairuz Rani[1], Rachel Jiun[1], Anna Nathan[1], Caroline Westerhout[2], I-Ching Sam[3], Jessie de Bruyne[1]

[1]Department of Paediatrics, [2]Department of Radiology, [3]Department of Microbiology, University of Malaya, Kuala Lumpur, Malaysia

Aim

To determine i) the aetiology ii) the sensitivity patterns of bacteria isolated and iii) the usefulness of the CRP in differentiating between viral and bacterial causes of lower respiratory tract infections in children.

Methods

This was a retrospective study where case-notes of all children, aged less than 18 years, admitted from 1st November 2010 till 31st October 2011, were reviewed. Children diagnosed with asthma or multiple trigger wheeze were excluded. A significant bacterial pathogen was defined as the presence of a single organism isolated with pus to epithelial ratio > 10:1 or if there were no epithelial cells and a single organism was cultured with significant fever and high neutrophil count. This was based on a modification of the Bacterial Pneumonia Score (BPS) by Moreno et al. Direct immuno-fluorescence assays on viral antigens or viral PCR was done to detect common viruses in nasopharyngeal aspirates.

Results

Four hundred and sixty-three case-notes were reviewed. The median age was 8 months (IQR 4-14 months). A bacterial aetiology was suspected in 8.9% of cases, a viral cause in 47.5% and mixed (virus + bacteria) in 4.1%. In 39% of children, no definite aetiology could be found. The commonest virus isolated was respiratory syncytial virus (20.7%) followed by parainfluenza 3 (1.9%) and adenovirus 1.7% (8 cases). The commonest bacteria isolated were *haemophilus influenzae* (9.7%), *staphylococcus aureus* (8.0%) and *streptococcus pneumoniae* (4.3%). Only 6.9% of *haemophilus influenzae* (2 out of 29) were resistant to ampicillin. CRP was significantly higher in children presumed to have a bacterial infection ($p = 0.002$).

Conclusion

Viruses are still a common cause of lower respiratory tract infections in children. Most bacteria isolated in our study could be treated with first-line antibiotics. CRP may be useful in the management of childhood LRTIs.

COMPLICATIONS OF FLEXIBLE BRONCHOSCOPY IN CHILDREN

Mohd Aizat Bin Mohd Basari, Norzila Mohamed Zainudin, Asiah Kassim

Institut Pediatrik, Hospital Kuala Lumpur, Malaysia

Introduction

Flexible bronchoscopy has been used in children for diagnostic and therapeutic purposes. Each centre has their own policy and protocol for this procedure e.g. type of sedation, anaesthesia and site of procedure.

Objective

The main objective was to identify complications of flexible bronchoscopy in children done in Institut Pediatrik, Hospital Kuala Lumpur.

Methodology

Subjects were selected from among paediatric patients aged 1 month - 12 years who had undergone flexible bronchoscopy in Institut Pediatrik, Hospital Kuala Lumpur in 2011 for various indications. Data collected included demographic factors, indications, types of anaesthesia, technique for maintaining airway patency and complications during and after procedure.

Result

A total of 50 patients was selected. The patients were mainly Malay (80%) and male (70%). The commonest indication for flexible bronchoscopy was stridor (19) followed by ventilator dependence (7), persistent radiological changes (6), persistent lung collapse (5), persistent wheeze and stridor (1),ventilator dependence with persistent chest x-ray changes (1) and stridor occurring with persistent lung collapse (1). They were all given general anaesthesia during both emergency and elective procedures. The airway patency was maintained via endotracheal intubation (15), laryngeal mask airway (19), nasopharyngeal tube (3), nasopharyngeal and laryngeal mask (5), laryngeal mask and endotracheal intubation (5), nasopharyngeal and endotracheal intubation (1), and tracheostomy tube (2). Complications encountered were moderate and transient episodes of desaturation (11), hypoxia (9), epistaxis (1) and transient laryngospasm (1).

Conclusion

In general, choosing the right indications for flexible bronchoscopy and good preparation of patients for general anaesthesia are among important factors to minimise complications following the procedure.

PEAK EXPIRATORY FLOW TECHNIQUE AMONG CHILDREN AGED 7 – 12 YEARS

Azizah Musa, , Faridah Derani, Norzila Mohamed Zainudin, Asiah Kassim

Institut Pediatrik, Hospital Kuala Lumpur, Malaysia

Introduction

Peak expiratory flow (PEF) is one of the tools used in managing asthma in children. PEF measurement in asthmatic patients has a role in diagnosis, monitoring and management plan. In general, there is much literature documenting that children above six years old should have the PEF done as part of asthma monitoring. However, during daily clinical practice in our centre, we observed that not all children above 6 years old could perform this test correctly.

Objectives

The main objective was to assess PEF technique among children 6 – 12 years.

Methodology

This was a prospective study involving children who visited our centre either as a patient or accompanying person. Consent from parents or guardian was taken. The PEF technique was assessed by two trained nurses.

Result

Total of 87 subjects was assessed. There were 82.8% Malays and 50.6% were female. About 36.8% of subjects had performed PEF prior to assessment. The age of subjects was 7 years old in 11.5%, 8 years old in 11.5%, 9 years old in 9.2%, 10 years old in 10.3%, 11 years old in 33.3% and 12 years old in 24.1%. Only 49.4% of subjects performed PEF correctly.

Conclusion

Less than half of children aged 7 – 12 years performed PEF with the right technique. It is important to teach and train them prior to PEF measurement.

RELATIONSHIP BETWEEN DIABETES MELLITUS AND SPUTUM CONVERSION IN SMEAR-POSITIVE PULMONARY TUBERCULOSIS PATIENTS IN HUSM

Mazlina H[1], Shaharudin A[2], Alwi B[1], Zahirudin W[1], Najib C P[1]

[1]Pusat Pengajian Sains Perubatan, Hospital University Sains Malaysia, Kubang Kerian, Malaysia
[2]Faculty of Medicine and Health Science,Universiti Sultan Zainal Abidin, Kuala Terengganu, Malaysia

Background

People with diabetes mellitus have a risk for developing active TB that is 2 to 4-fold greater than people without diabetes. This risk is likely to be greater among insulin-dependant or poorly-controlled diabetics (Jeon and Murray, 2008). There is evidence that TB patients with diabetes may have higher bacillary loads than TB patients without diabetes (Bacakoglu *et al*., 2001). At this moment, there is little information on the effect of diabetes mellitus on the treatment outcome of tuberculosis.

Methodology

This was a retrospective study, and included 256 patients with smear-positive pulmonary tuberculosis diagnosed in Hospital Universiti Sains Malaysia. The objectives were to determine the prevalence of diabetes, to study the association of diabetes and sputum conversion and to determine other factors associated with sputum conversion among smear-positive PTB patients. Univariate analysis for categorical data was done with Chi-square and numerical data was analysed with simple logistic regression. Multivariate analysis was done with multiple logistic regression analysis.

Results

Diabetes mellitus was diagnosed in 118 (46.1%) of patients with tuberculosis and was associated with older age. 132 out of 256 patients with smear-positive PTB achieved sputum conversion after 2 months intensive phase (51.6%). After 2 months of intensive phase, results of sputum smear examination were found to be more often positive in diabetic patients (63.6% vs 35.5%). In addition, raised ESR and low albumin level were found to have negative effect for sputum conversion among pulmonary tuberculosis patients.

Conclusion

Diabetes mellitus seems to have negative effect on sputum smear conversion among tuberculosis patients. Screening for diabetes mellitus and strict glycaemic control may improve the outcome of tuberculosis treatment.

IMPROVED QUALITY OF LIFE: THE FIRST LUNG TRANSPLANT IN MALAYSIA

Ahmad Adib M N, Zuriyana M, Ashari Y, Dora A A, Zamzurina A, Norzira A R

Department: .....

Background

Lung transplantation has been accepted worldwide as the mainstay therapy for carefully chosen patients suffering from end-stage lung disease refractory to conventional therapies. Combined with the emergence of powerful post-transplant therapy, the procedure has improved the outcomes and quality of life (QoL) of these patients tremendously, with greater than 50% of patients surviving for more than 5 years post-transplant.

Clinical Case

A 55-year-old gentleman presented to our clinic in early 2005 with complaints of worsening dyspnoea. He was subjected to extensive investigations and was diagnosed to have idiopathic pulmonary fibrosis based on CT Thorax imaging. His case was brought forward to the Institute of Respiratory Medicine (IPR) – National Heart Institute (IJN) Heart-Lung Transplantation meeting and was accepted as a recipient for lung transplantation in March 2005. Subsequently, he underwent single lung transplantation in National Heart Institute (IJN) on 16 December 2005.

As of today, he is approaching 6 years 5 months post single-lung transplant and is currently leading a peaceful harmonious life with his family as a retired policeman. His current post-transplant regime includes cyclosporin, mycophenolate mofetil and prednisolone. In 2009, he successfully completed the Hajj.

Discussion

Patients post-transplant do at time feel restricted as they need extra precautions with their environment and need to adhere to strict immunosuppressive regimes lifelong but their quality of life improves dramatically allowing them to lead a satisfying, better and productive life.