



MALAYSIAN THORACIC SOCIETY



LUNG  
FOUNDATION  
OF MALAYSIA

# **MALAYSIAN THORACIC SOCIETY** ANNUAL CONGRESS 2014

*12<sup>th</sup> - 15<sup>th</sup> June 2014*

*Holiday Inn  
Melaka, Malaysia*

SOUVENIR PROGRAMME & ABSTRACT BOOK

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# Malaysian Thoracic Society Office Bearers 2013 – 2015

<i>President</i>	Prof Dr Roslina Abdul Manap
<i>Vice-President</i>	Assoc Prof Dr Pang Yong Kek
<i>Hon Secretary</i>	Dr Hooi Lai Ngoh
<i>Hon Treasurer</i>	Assoc Prof Dr Jessie de Bruyne
<i>Hon Assistant Secretary</i>	Dr Asiah Kassim
<i>Hon Assistant Treasurer</i>	Dr Lalitha Pereirasamy
<i>Committee Members</i>	Prof Dr Liam Chong Kin Dr Fauzi Md Anshar Dr Tengku Saifudin Tengku Ismail Dr Kauthaman Mahendran
<i>Co-opted Committee Member</i>	Dr Wong Jyi Lin

## MTS Annual Congress 2014 Organising Committee

<i>Advisor</i>	Prof Dr Liam Chong Kin
<i>Organising Chairman</i>	Dr Kauthaman Mahendran
<i>Scientific Committee</i>	Prof Dr Roslina Abdul Manap ( <i>Chairman – Adult Programme</i> ) Dr Asiah Kassim ( <i>Chairman – Paediatric Programme</i> ) Dr Lalitha Pereirasamy Dr Wong Jyi Lin Dr Tengku Saifudin Tengku Ismail Dr Fauzi Md Anshar
<i>Secretary / Business Manager</i>	Dr Hooi Lai Ngoh
<i>Treasurer</i>	Assoc Prof Dr Jessie de Bruyne
<i>Publications and Publicity</i>	Assoc Prof Dr Pang Yong Kek
<i>Social Events</i>	Dr Ashok Philip
<i>Audio-Visual Facilities</i>	Dr Ng Khai Lip Dr Adelyn Nisha a/p Nevinhenry Dr Koh Kee Leong
<i>Congress Secretariat</i>	Ms Kong and Team
<i>Local Organising Team</i>	Dr Kauthaman Mahendran Dr Ashok Philip Dr Jalil bin Ishak Dr Punit Bedi Dr Koh Kee Leong Dr Ruhaiza bt Mohamad Dr Ng Khai Lip Dr Adelyn Nisha a/p Nevinhenry Pn Suhadah bt Ahad Dr Noorhaza bt Ma'an Encik Aziz bin Minhat



# Message from the President of the Malaysian Thoracic Society



*Dear Colleagues and Friends*

*Welcome to the Annual Scientific Congress of the Malaysian Thoracic Society 2014, held in the historical city of Malacca. As in previous years, we invite you to participate eagerly in the scientific symposia, grand rounds, meet-the-expert sessions, scientific paper presentations and various workshops that the Organising and Scientific Committees have put together with you in mind.*

*The past year has been a busy one for the Society with workshops, lectures and CME seminars being held throughout the year. One notable effort has been the move to train and certify the performance of spirometry testing by local lung function test providers. In an attempt to standardize the local practice of spirometry to conform to internationally-recognized best practice standards, the Society sent two Members to become Certified Trainers under the European Respiratory Society Spirometry Driving Licence Project. It is intended to enhance high-quality spirometric testing for accurate diagnosis of patients with respiratory disease.*

*Several challenges lie ahead in the landscape for the Society. Recent developments in the pharmaceutical and medical equipment industry will mean that corporate participation in future CME/CPD events will be more regulated and limited in scope and nature. The Society will seek ways to continue to work in partnership with industry in the best interests of the profession. On a brighter note, the field of respiratory medicine in Malaysia continues to grow rapidly, with interventional pulmonology and sleep medicine meetings attracting good attendance under the auspices of the Sleep Disorders Society Malaysia and the newly-formed Malaysian Association of Bronchology and Interventional Pulmonology. The Society also has formed several dedicated interest groups to spearhead education in certain areas. I am also pleased to announce that the Malaysian Thoracic Society has been chosen to host the IASLC Asia Pacific Lung Cancer Conference, 6<sup>th</sup> – 8<sup>th</sup> November 2014 with the Malaysian Oncological Society, and also the Congress of the Asian-Pacific Society of Respiriology, 3<sup>rd</sup> – 6<sup>th</sup> December 2015 in Kuala Lumpur, so do block your dates.*

*Lastly, I wish to extend my deepest appreciation to the members of the Organising and Scientific Committees under the leadership of Dr Kauthaman Mahendran, Organising Chairman, for their tireless efforts in making this Congress a reality. This meeting would also not be possible without the support of our industry partners, the Lung Foundation of Malaysia and the Secretariat to whom I wish to extend my heartfelt thanks.*

*Have a wonderful meeting.*

A handwritten signature in black ink, reading 'Roslina Abdul Manap'.

**Prof Dr Roslina Abdul Manap**

# Message from the Chairman of the Lung Foundation of Malaysia



*Dear Colleagues and Delegates*

*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 2014 which is held in this historical city of Melaka. As in the past, this year's Congress will feature a comprehensive range of topics in lung diseases, covering basic sciences to state-of-the-art technology for caring of patients; from common infection to rare interstitial lung diseases; from preventive care to the most advance curative and palliative therapies. I trust you will find the Congress to be highly educational and interesting. I also hope you will be able to find time to explore the city of Melaka which was among the earliest trade centre and port city in Malaya, where Arab, Indian, Chinese, Portugese, Dutch and English's presence can still be felt.*

*In line with our objective of promoting research in lung diseases, I am pleased to inform that the Foundation had, early this year, approved a research grant worth RM 60,000 for a research entitled "Enhancing public-private partnership in the implementation of TB control programme in Malaysia"; the project had just rolled out. The LFM will again provide awards for winners of oral and poster presentations, at this Congress. It is gratifying to note that over the years, more and more papers with improved quality are presented at the Congress. I trust the quality of research can just be better and better.*

*The Annual Congress is not only a place to learn new knowledge or exchange ideas, but I believe 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.*

A handwritten signature in black ink, appearing to read 'Zainudin bin Md Zin'. The signature is fluid and cursive, with a long horizontal stroke at the end.

**Dato' Dr Zainudin bin Md Zin**

# Message from the Organising Chairman of the MTS Annual Congress 2014



*Make every breath count.*

*Breathing is arguably the most recognised action we perform every day to keep ourselves alive. The heart pumps but we don't feel it. Our kidneys and liver clean our blood, our gut absorbs nutrients and our brain sends and receives signals. But it's still our breathing that we readily identify with every moment.*

*How much care do we give to this wonderful organ called our "lungs"? It appears we may be more concerned with our blood pressure, blood sugar and blood cholesterol. How many of us know our Forced Vital Capacity or our Forced Expiratory Volume in the first second of our Peak Flow rates?*

*Maybe it's time to pay a little more attention. I invite you all to revisit the health and ailments of our lungs at the MTS Annual Congress 2014 in the UNESCO Heritage City of Melaka.*

*We promise something for everyone; workshops on basic lung X-rays and CT-scans, smoking cessation, use of inhalers, thoracic ultrasound, and a Gala Dinner where we want you to don the most "heritage baju" you have. Not to forget the two and a half days of scientific updates on asthma, COPD, TB, pneumonia, sleep medicine and more.*

**Dr Kauthaman Mahendran**

# Programme Summary

<b>Date Time</b>	<b>12<sup>th</sup> June 2014 Thursday</b>		<b>13<sup>th</sup> June 2014 Friday</b>
0700 – 0800			Registration
0800 – 0900	<b>CONGRESS WORKSHOP 1</b> [0800 – 1700] at Melaka Manipal Medical College		Welcome Address
0900 – 1000			<b>Plenary 1</b>
1000 – 1100			<b>Symposium 1</b>
1100 – 1200			Tea
1200 – 1300			<b>Symposium 2</b>
1300 – 1400			<b>Sponsored Symposium 2</b> <i>AstraZeneca</i>
1400 – 1500		<b>CONGRESS WORKSHOPS 2, 3, 4, 5</b> [1400 – 1700] at Holiday Inn Melaka	Lunch and Friday Prayers
1500 – 1600			<b>Symposium 3</b>
1600 – 1700			<b>Sponsored Symposium 3</b> <i>Novartis</i>
1700 – 1800			Tea & <b>MTS Annual General Meeting</b>
1800 – 1900	<b>Sponsored Symposium 1A</b> <i>AFT Orphan Ltd</i>	<b>Sponsored Symposium 1B</b> <i>EP Plus Group Sdn Bhd</i>	
1900 – 2030	Dinner		<b>Sponsored Symposium 4</b> <i>Bayer</i>
			Dinner

# Programme Summary

<b>Date Time</b>	<b>14<sup>th</sup> June 2014 Saturday</b>	<b>15<sup>th</sup> June 2014 Sunday</b>
0700 – 0800	<b>Meet-The-Expert Session</b>	
0800 – 0900	<b>Plenary 2</b>	<b>Plenary 3</b>
0900 – 1000	<b>Symposium 4</b>	<b>Symposium 6</b>
1000 – 1100	Tea	Tea
1100 – 1200	<b>Symposium 5</b>	<b>Sponsored Symposium 8 Pfizer</b>
1200 – 1300	<b>Sponsored Symposium 5 GlaxoSmithKline Pharmaceutical</b>	<b>Debate</b>
1300 – 1400	Lunch	<b>Closing Ceremony</b>
1400 – 1500	<b>Concurrent Grand Rounds</b>	
1500 – 1600	<b>Concurrent Oral and Poster Presentations</b>	
1600 – 1700	<b>Sponsored Symposium 6A Boehringer-Ingelheim</b>	<b>Sponsored Symposium 6B Cipla Malaysia</b>
1700 – 1800	Tea	
1800 – 1900	<b>Meeting of Trainers and Trainees</b>	
1900 – 1940	<b>Sponsored Symposium 7 Merck Sharp &amp; Dohme (Malaysia)</b>	
1940 – 2200	<b>MTS Gala Dinner</b>	



# Congress Workshops

## WORKSHOP 1

### *Emergency Thoracic And Lung Ultrasonography (E-TLUS)*

*Date : 12<sup>th</sup> June 2014 (Thursday)*

*Time : 0830 hrs to 1700 hrs*

*Venue : Melaka Manipal Medical College, Sports Complex Auditorium, Bukit Baru, Melaka*

*Workshop coordinator : Dr Punit Bedi*

#### Programme

0830 – 0900	Registration
0900 – 0915	Inauguration & welcome address <i>Prof Datuk Dr Abdul Razzak</i> <i>Prof Dr Jaspal Singh</i> <i>Dr Kauthaman Mahendran</i>
0915 – 0935	Role of ultrasound in thoracic emergencies – An overview <i>Dr Farina Mohd Salleh</i>
0935 – 0955	Know the machine & knobology <i>Dr Lim Teng Cheow</i>
0955 – 1045	Lung ultrasound <i>Dr Adi Osman</i>
1045 – 1100	Tea / Coffee
1100 – 1130	Approach to basic echocardiography – 1 <i>Dr Punit Bedi</i>
1130 – 1200	Approach to basic echo – 2 & volume assessment <i>Dr Lim Teng Cheow</i>
1200 – 1225	The BLUE protocol <i>Dr Farina Mohd Salleh</i>
1225 – 1245	The RUSH protocol <i>Dr Punit Bedi</i>
1245 – 1320	Clinical approach to E-TLUS in emergency <i>Dr Adi Osman</i>
1320 – 1420	Q & A and distribution into groups A, B & C; followed by Lunch
1420 – 1650	Hands-on workshop
1540 – 1600	Tea / Coffee
1650 – 1700	Valediction and certification

# Congress Workshops

## **WORKSHOP 2** *Respiratory Imaging*

*Date : 12<sup>th</sup> June 2014 (Thursday)*

*Time : 1400 to 1700 hrs*

*Venue : Holiday Inn, Melaka*

*Workshop coordinator : Dr Adelyn Nisha*

### **Programme**

1400 – 1430	The basics and approach to the plain chest X-ray <i>Dr Aminul Khairiah Abdul Majid</i>
1430 – 1500	Quiz on interesting CXR <i>Dr Aminul Khairiah Abdul Majid</i>
1500 – 1530	The basics and approach to the CT Thorax <i>Dr Marlina Tanty Ramli Hamid</i>
1530 – 1600	Quiz on interesting CT Thorax <i>Dr Marlina Tanty Ramli Hamid</i>
1600 – 1615	Tea
1615 – 1700	CT and ultrasound guided thoracic procedures <i>Dr Marlina Tanty Ramli Hamid</i>

# Congress Workshops

## WORKSHOP 3

### *Inhalers: How to Choose, How to Use?*

Date : 12<sup>th</sup> June 2014 (Thursday)

Time : 1400 to 1700 hrs

Venue : Holiday Inn, Melaka

*Workshop coordinators* : Dr Jalil Ishak, Puan Suhadah Ahad

#### Programme

1400 – 1410	Introduction and pre-test <i>Puan Suhadah Ahad</i>
1410 – 1430	Airway anatomy, mechanisms of particle deposition, benefits and risks of inhalation therapy <i>Dr Jalil Ishak</i>
1430 – 1450	Inhaler devices – Metered dose inhaler, dry powder inhaler and spacers <i>Dato' Dr Zainudin Md Zin</i>
1450 – 1510	Nebuliser and inhalation therapy for infants and children and in special situation <i>Dr Norzila Mohamed Zainudin</i>
1510 – 1530	The role of patient's educator in optimising inhalation therapy <i>Puan Suhadah Ahad</i>
1530 – 1550	Q & A
1550 – 1600	Tea
1600 – 1650	Hands-on session
1650 – 1700	Post test and closing <i>Dr Jalil Ishak</i>

# Congress Workshops

## **WORKSHOP 4** *Smoking Cessation*

Date : 12<sup>th</sup> June 2014 (Thursday)

Time : 1400 to 1700 hrs

Venue : Holiday Inn, Melaka

*Workshop coordinator* : Dr Ruhaiza Mohamad

### **Programme**

1400 – 1415	Introduction to workshop and ice breaking <i>Dr Ruhaiza Mohamad</i>
1415 – 1500	Evidence-based treatment for smoking cessation [page 23] <i>Datuk Dr Aziah Ahmad Mahayiddin</i>
1500 – 1550	Behavioural and pharmacological approaches to smoking cessation <i>Assoc Prof Dr Mohamad Haniki Nik Mohamed</i>
1550 – 1600	Tea
1600 – 1700	<b>Forum</b> Tips on how to start your own quit smoking service at your place of work



# Congress Workshops

## **WORKSHOP 5** ***Pulmonary Rehabilitation***

*Date* : 12<sup>th</sup> June 2014 (Thursday)

*Time* : 1400 to 1700 hrs

*Venue* : Holiday Inn, Melaka

*Workshop coordinator* : Dr Ng Khai Lip

### **Programme**

1400 – 1415	Registration
1415 – 1445	Introduction to pulmonary rehabilitation <i>Dr Fauzi Md Anshar</i>
1445 – 1515	Physiotherapist's role in a pulmonary rehabilitation programme <i>Mr Riza Sharom Abdul Razak</i>
1515 – 1545	Case discussion / Q & A
1545 – 1600	Tea
1600 – 1700	Practical sessions <ul style="list-style-type: none"><li>– Breathing exercises</li><li>– Manual techniques</li><li>– Adjunct therapy</li></ul> <i>Mr Riza Sharom Abdul Razak and Facilitators</i>

# Daily Programme

## 12<sup>th</sup> June 2014 | Thursday

1800 – 1900	<b>Sponsored Symposium 1A – AFT Orphan Ltd</b> <i>Chairperson: Dr Wong Jyi Lin</i> Idiopathic pulmonary fibrosis: Overview of a deadly disease [page 23] <b>Dr Felix Chua</b>	>> FUNCTION ROOM 2
1800 – 1900	<b>Sponsored Symposium 1B – EP Plus Group Sdn Bhd</b> <i>Chairperson: Prof Dr Liam Chong Kin</i> High dose of N-acetylcysteine in the prevention of COPD exacerbations (PANTHEON study) <b>Prof Dr Zheng Jin Peng</b>	>> FUNCTION ROOM 1
1900	Dinner	

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# Daily Programme

## 13<sup>th</sup> June 2014 | Friday

0700 – 0800	Registration	
0800 – 0810	Welcome address by <ul style="list-style-type: none"><li>• Prof Dr Roslina Abdul Manap, <i>President, Malaysian Thoracic Society</i></li><li>• Dr Kauthaman Mahendran, <i>Organising Chairman, MTS Annual Congress 2014</i></li></ul>	>> STRAITS EAST BALLROOM
0810 – 0850	<b>PLENARY 1</b> <i>Chairperson: Prof Dr Liam Chong Kin</i> Respiratory medicine in Malaysia: The past, the present and the future [page 24] <b>Dato' Dr Abdul Razak Abdul Muttalif / Dr Norzila Mohamed Zainudin</b>	>> STRAITS EAST BALLROOM
0850 – 1020	<b>SYMPOSIUM 1</b> <b>S1A – Chronic Obstructive Pulmonary Disease</b> <i>Chairpersons: Dr Nurhayati Mohd Marzuki Dr Irfhan Ali Hyder Ali</i> Managing the difficult COPD patient [page 24] <b>Prof Dr David Halpin</b> Systemic effects of COPD – Looking beyond FEV1 [page 25] <b>Dr Sundari Ampikaipakan</b> Non-invasive ventilation in acute exacerbation of COPD [page 25] <b>Dr Norhaya Mohd Razali</b>	>> STRAITS EAST BALLROOM
0850 – 1020	<b>S1B – Infection</b> <i>Chairpersons: Dr Goon Ai Khiang Dr Goh Kee San</i> Pleural space infections [page 26] <b>Dr K Kannan</b> The use of biomarkers in the management of pneumonia and sepsis [page 26] <b>Prof Dr John Abisheganaden</b> Pulmonary aspergillosis [page 27] <b>Dr Sanjay H Chotirmall</b>	>> FUNCTION ROOM 3

# Daily Programme

## 13<sup>th</sup> June 2014 | Friday

0850 – 1020	<p><b>S1C (Paediatric) – Year In Review</b>  <i>Chairpersons: Dato' Dr Azizi bin Hj Omar</i>  <i>Dr Ahmad Fadzil Abdullah</i></p> <p>Management of ARDS [page 28]  <i>Assoc Prof Dr Tang Swee Fong</i></p> <p>Ventilation and IRDS in premature infant [page 28]  <i>Dr Farah Inaz Syed Abdullah</i></p> <p>Paediatric asthma: Year in review [page 29]  <i>Dr Norzila Mohamed Zainudin</i></p>	>> FUNCTION ROOM 2
1020 – 1050	Tea	
1050 – 1150	<p><b>SYMPOSIUM 2</b>  <b>S2A – Pulmonary Hypertension</b>  <i>Chairpersons: Dr Sunita Devi Hukam Gopal Chand</i>  <i>Dr Mat Zuki Mat Jaeb</i></p> <p>Detection and diagnosis of pulmonary arterial hypertension [page 29]  <i>Prof Dr Roslina Abdul Manap</i></p> <p>Treatment option in pulmonary hypertension [page 30]  <i>Dr Ashari Yunus</i></p>	>> STRAITS EAST BALLROOM
1050 – 1150	<p><b>S2B – Tissue Sampling And Pathology</b>  <i>Chairpersons: Dr Hooi Lai Ngoh</i>  <i>Dr Mangayakarasi a/p Ramanathan</i></p> <p>Optimising diagnostic yield in respiratory endoscopic procedures [page 31]  <i>Dr Hilmi Lockman</i></p> <p>Optimising diagnostic yield in respiratory pathological specimens [page 32]  <i>Prof Dr Pathmanathan Rajadurai</i></p>	>> FUNCTION ROOM 3
1050 – 1150	<p><b>S2C (Paediatric) – Respiratory Complications In Cardiac Diseases</b>  <i>Chairpersons: Assoc Prof Dr Jessie de Bruyne</i>  <i>Dr Mariana Daud</i></p> <p>Cardiac failure or “hyperactive airway disease”  <i>Prof Dato' Dr Azizi bin Hj Omar</i></p> <p>Optimising respiratory status prior to cardiac surgery [page 33]  <i>Dr Dayang Zuraini Sahadan</i></p>	>> FUNCTION ROOM 2
1150 – 1230	<p><b>Sponsored Symposium 2 – AstraZeneca</b>  <i>Chairperson: Datuk Dr Zainudin Md Zin</i></p> <p>COPD exacerbations and pneumonia: Can treatment options influence risk  <i>Prof Dr David Halpin</i></p>	>> STRAITS EAST BALLROOM
1230 – 1415	<p>Lunch</p> <p>Friday Prayers</p>	>> ESSENCE KITCHEN
1415 – 1545	<p><b>SYMPOSIUM 3</b>  <b>S3A – Interstitial Lung Disease</b>  <i>Chairpersons: Dr Sundari Ampikaipakan</i>  <i>Dr Razul Md Nazri Md Kassim</i></p> <p>Approach to interstitial lung disease [page 33]  <i>Dr Tengku Saifudin Tengku Ismail</i></p> <p>Idiopathic pulmonary fibrosis: What is effective? [page 34]  <i>Dr Felix Chua</i></p> <p>Lung transplantation – Can we do better in Malaysia?  <i>Prof Datuk Dr Mohamed Ezani Mohd Taib</i></p>	>> STRAITS EAST BALLROOM

# Daily Programme

## 13<sup>th</sup> June 2014 | Friday

1415 – 1545	<b>S3B – Interventional Pulmonology</b> <i>Chairpersons: Dr Liza Ahmad Fisal Dr Tie Siew Teck</i>  COPD moving beyond drugs [page 34] <i>Dr Jamalul Azizi Abdul Rahaman</i>  Lung cancer – What can chest physicians offer other than chemotherapy and surgery [page 35] <i>Assoc Prof Dr Alan Ng</i>  Role of VATS in thoracic diseases <i>Dr Soon Sing Yang</i>	>> FUNCTION ROOM 3
1415 – 1545	<b>S3C (Paediatric) – Respiratory Therapy In Children</b> <i>Chairpersons: Assoc Prof Dr Surendran Thavagnanam Dr Tam Pui Ying</i>  Aerosol therapy: Facts and myths [page 36] <i>Dr Mariana Daud</i>  ICS and LABA, between indication and safety [page 37] <i>Assoc Prof Dr Jessie de Bruyne</i>  Oxygen therapy: Between good and bad [page 37] <i>Assoc Prof Dr Hasniah Abdul Latif</i>	>> FUNCTION ROOM 2
1545 – 1625	<b>Sponsored Symposium 3 – Novartis</b> START EARLY: Bronchodilation in the management of COPD patients for improved symptoms and outcome <i>Prof Dr Liam Chong Kin</i>	>> STRAITS EAST BALLROOM
1625 – 1815	Tea  <b>MTS Annual General Meeting</b>	>> FUNCTION ROOM 2
1845 – 1925	<b>Sponsored Symposium 4 – Bayer</b> <i>Chairperson: Prof Dr Roslina Abdul Manap</i>  The simplified approach to PE treatment – Insights from the EINSTEIN studies <i>Dr Antonie W A Lensing</i>	>> STRAITS EAST BALLROOM
1925 – 2200	Dinner	>> STRAITS EAST BALLROOM



# Daily Programme

## 14<sup>th</sup> June 2014 | Saturday

0700 – 0800	<b>MEET-THE-EXPERT SESSION</b> <i>Chairperson: Dr Lalitha Pereirasamy</i> Air pollution and asthma [page 38] <i>Prof Dr John Abisheganaden</i>	>> FUNCTION ROOM 4
0800 – 0840	<b>PLENARY 2</b> <i>Chairperson: Prof Dr Roslina Abdul Manap</i> Non-smoking COPD <i>Dr Sundeep Salvi</i>	>> STRAITS EAST BALLROOM
0840 – 1010	<b>SYMPOSIUM 4</b> <b>S4A – Lung Cancer</b> <i>Chairpersons: Dr Ong Choo Khoon</i> <i>Assoc Prof Dr How Soon Hin</i> Role of PET-CT scanning in managing lung cancer <i>Dr Dharmendra Harichandra</i> Solitary pulmonary nodules: Approach using navigational bronchoscopy system [page 38] <i>Dr Devanand Anantham</i> Common symptoms in patient with advanced lung cancer [page 39] <i>Dr Hayati Yaakup</i>	>> STRAITS EAST BALLROOM
0840 – 1010	<b>S4B – Non-Invasive Ventilation</b> <i>Chairpersons: Dr Ahmad Izuanuddin Ismail</i> <i>Dr Michael Stephen Joseph</i> Home NIV for restrictive lung disorders and neuromuscular disease [page 39] <i>Prof Dr Anita Simonds</i> Sending patient home on non-invasive ventilation [page 40] <i>Dr Asiah Kassim</i> The dark side of the moon: When, why and where should I not use NIV [page 40] <i>Prof Dr Anita Simonds</i>	>> FUNCTION ROOM 3
0840 – 1010	<b>S4C (Paediatric) – Respiratory Disease In Other Conditions</b> <i>Chairpersons: Assoc Prof Hasniah Abdul Latif</i> <i>Dr Norzila Mohamed Zainudin</i> Respiratory complications in Down's Syndrome <i>Dr Ahmad Fadzil Abdullah</i> Prader Willi Syndrome: The respiratory disease evolves from infant to a child <i>Assoc Prof Dr Anna Marie Nathan</i> Cerebral palsy and pneumonia [page 41] <i>Dr Rus Anida Awang</i>	>> FUNCTION ROOM 2
1010 – 1040	Tea	
1040 – 1210	<b>SYMPOSIUM 5</b> <b>S5A – Sleep Disordered Breathing</b> <i>Chairpersons: Dato' Dr Zainudin Md Zin</i> <i>Dr Fauzi Mohd Anshar</i> Assessing sleep disordered breathing – From questionnaires to portable studies [page 41] <i>Dr Ahmad Izuanuddin Ismail</i> Cardiovascular complications in sleep disordered breathing <i>Assoc Prof Dr Imran Zainal Abidin</i> Neurocognitive effects of obstructive sleep apnoea [page 42] <i>Prof Dr Anita Simonds</i>	>> FUNCTION ROOM 3

# Daily Programme

## 14<sup>th</sup> June 2014 | Saturday

1040 – 1210	<p><b>S5B – Asthma</b></p> <p>Chairpersons: Dr Wan Haniza Wan Mohamad Dr Kauthaman Mahendran</p> <p>Persistent airflow obstruction in asthma [page 42] <b>Prof Dr David Halpin</b></p> <p>Occupational asthma [page 43] <b>Prof Dr Krishna Gopal Rampal</b></p> <p>Overlap syndromes in asthma (Obesity, GERD, COPD) [page 44] <b>Dr Andrea Ban</b></p>	>> STRAITS EAST BALLROOM
1040 – 1210	<p><b>S5C (Paediatric) – Aspiration Pneumonia</b></p> <p>Chairpersons: Assoc Prof Dr Anna Marie Nathan Dr Neoh Siew Hong</p> <p>Risks and complications of aspiration pneumonia [page 44] <b>Dr Asiah Kassim</b></p> <p>Assessment and investigation of aspiration pneumonia [page 45] <b>Dr Dayang Zuraini Sahadan</b></p> <p>Practical management <b>Assoc Prof Dr Surendran Thavagnanam</b></p>	>> FUNCTION ROOM 2
1210 – 1250	<p><b>Sponsored Symposium 5</b> – <b>GlaxoSmithKline Pharmaceutical</b></p> <p>Chairperson: Dato' Dr Abdul Razak Abdul Muttalif</p> <p>The changing landscape of COPD: Optimising diagnosis and management <b>Dr Lorcan McGarvey</b></p>	>> STRAITS EAST BALLROOM
1250 – 1400	Lunch	>> ESSENCE KITCHEN
1400 – 1500	<p><b>CONCURRENT GRAND ROUNDS</b></p> <p><b>1. Clinical</b></p> <p>Chairpersons: Dr Chua Keong Tiong Dr Megat Razeem</p> <p>A breathless young lady <b>Dr Andrea Ban</b></p> <p>Dots and spots in the lung <b>Dr Tan Eng Liang</b></p>	>> STRAITS EAST BALLROOM
1400 – 1500	<p><b>2. Paediatric</b></p> <p><b>Interactive Case Discussion For General Paediatricians</b></p> <p>Chairpersons: Dr Rus Anida Awang Dr Dayang Zuraini Sahadan</p> <p><b>Hospital Melaka, Melaka</b> <b>Hospital Sultan Ismail, Johor Bahru</b> <b>Universiti Malaya Medical Centre, Kuala Lumpur</b></p>	>> FUNCTION ROOM 2
1400 – 1500	<p><b>3. Radiology</b></p> <p>Chairpersons: Dr Saravanan Kannan Dr Kow Ken Siong</p> <p>Transbronchial – Bronchial artery embolisation <b>Assoc Prof Dr Ahmad Sobri Muda</b></p> <p>SVC stent for SVC obstruction <b>Prof Dr Basri Johan Jeet Abdullah</b></p>	>> FUNCTION ROOM 3

# Daily Programme

## 14<sup>th</sup> June 2014 | Saturday

1500 – 1600	<b>ORAL PRESENTATIONS</b> <i>Chairpersons: Dr Tengku Saifudin Tengku Ismail Dr Wong Jyi Lin</i>	>> FUNCTION ROOM 3
	<b>POSTER PRESENTATIONS</b> <i>Facilitators: Dr Termizy Hassan Mashat, Dr Azza Omar, Dr Fauzi Mohd Anshar Assistants: Dr Ng Khai Lip, Dr Koh Kee Leong, Dr Adelyn Nisha a/p Nevinhenry</i>	>> FOYER, LEVEL 2
1600 – 1640	<b>Sponsored Symposium 6A</b> <b>– Boehringer-Ingelheim Spiriva Tea Symposium</b> 2 devices, 1 consistent finding – What can we learn from TIOSPIR and UPLIFT <i>Datuk Dr Aziah binti Ahmad Mahayiddin</i>	>> STRAITS EAST BALLROOM
1600 – 1640	<b>Sponsored Symposium 6B – Cipla Malaysia</b> <i>Chairperson: Prof Dr Roslina Abdul Manap</i> Recent updates on management of COPD <i>Dr Sundeep Salvi</i>	>> FUNCTION ROOM 3
1640 – 1710	Tea	
1710 – 1900	Meeting of Trainers and Trainees	
1900 – 1940	<b>Sponsored Symposium 7</b> <b>– Merck Sharp &amp; Dohme (Malaysia)</b> <i>Chairperson: Prof Dr Roslina Abdul Manap</i> The zen power of air to asthmatic lungs <i>Dr Ronald Grossman</i>	>> STRAITS EAST BALLROOM
1940 – 2200	<b>MTS GALA DINNER</b> <b>Theme: Historical Melaka</b>	>> STRAITS EAST BALLROOM
1940 – 2000	Arrival of Guests	
2000 – 2010	Speech by Professor Dr Roslina Abdul Manap, President, Malaysian Thoracic Society	
2010 – 2020	Launch of Paediatric Asthma Guidelines	
2020 – 2200	Dinner is served Entertainment: <ul style="list-style-type: none"> <li>• Games</li> <li>• Heritage boy and girl contest</li> </ul> Presentation of the Oral Paper and Poster Awards Speech by Datuk Dr Zainudin bin Md Zin, President, Lung Foundation of Malaysia	
2200	Closing	
2200 – 2330	Song and dance for late nighters	

# Daily Programme

## 15<sup>th</sup> June 2014 | Sunday

0800 – 0840	<b>PLENARY 3</b> <i>Chairperson: Dr Norhaya Mohd Razali</i> Non-invasive ventilation: The first few millennia and beyond <i>[page 45]</i> <i>Prof Dr Anita Simonds</i>	>> STRAITS EAST BALLROOM
0840 – 1010	<b>SYMPOSIUM 6</b> <b><i>Tuberculosis</i></b> <i>Chairpersons: Datuk Dr Aziah Ahmad Mahayiddin</i> <i>Dr I Kuppusamy</i> Speeding up detection and treatment in MDR TB <i>Dato' Dr Abdul Razak Abdul Muttalif</i> Programmatic management of drug resistant TB (PMDT) <i>[page 46]</i> <i>Dr Puvaneswari Subramaniam</i> TB screening and surveillance in health-care workers <i>[page 46]</i> <i>Assoc Prof Dr Pang Yong Kek</i>	>> FUNCTION ROOM 3
1010 – 1040	Tea	
1040 – 1120	<b>Sponsored Symposium 8 – Pfizer</b> <i>Chairperson: Dato' Dr Abdul Razak Abdul Muttalif</i> Burden of pneumococcal disease in Malaysia and the need for PCV vaccination in frequent or elderly travelers <i>Dato' Dr Abdul Razak Abdul Muttalif</i> Role/Need of PCV vaccination in adult. A risk based approach and co-morbid conditions <i>Dr Ricardo Zotomayor</i>	>> STRAITS EAST BALLROOM
1120 – 1220	<b>DEBATE</b> <b><i>The National TB Control Programme Should Be A Vertical Programme</i></b> <i>Chairpersons: Dr Mohd Fauzi Abdul Rani</i> <i>Dr Hooi Lai Ngoh</i> <i>For: Dr Lalitha Pereirasamy</i> <i>Against: Dr Jiloris Frederick Dony</i>	>> STRAITS EAST BALLROOM
1220 – 1230	Closing Ceremony	>> STRAITS EAST BALLROOM
1230 – 1400	Lunch	>> ESSENCE KITCHEN



## **Public Forum And Exhibition On Lung Health 15<sup>th</sup> June 2014 | Sunday**

*Time : 0830 to 1230 hrs*

*Venue : In front of Memorial Kemerdekaan Melaka*

### *Objectives:*

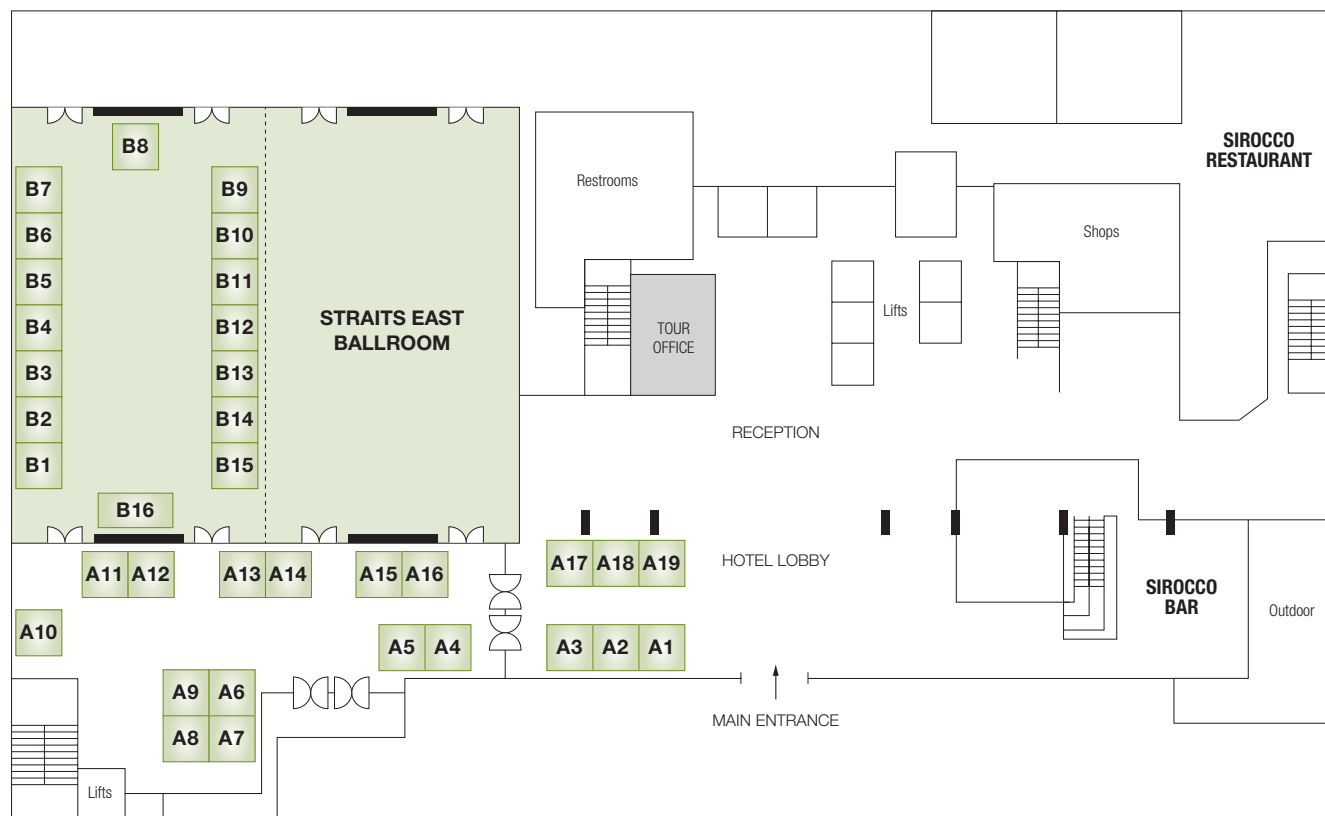
1. To increase public health awareness on lung health
2. To motivate public to make positive health behaviour changes
3. To promote early diagnosis and early treatment for tuberculosis
4. To promote tobacco control and smoke cessation programme

### *Activities:*

1. Health exhibition on tuberculosis by MAPTB (Melaka)
2. Health exhibition on tobacco control and smoke cessation by Klinik Kesihatan Tengker Melaka
3. Talk on tobacco control and smoke cessation by Dr Azman bin Othman, Family Medicine Specialist Klinik Masjid Tanah, Melaka
4. Spirometer test for the public

# Floor Plan And Trade Exhibition

## Lobby Level



Booth No	Company
A1	Philips Respironics – HHS
A2	Eli Lilly (Malaysia) Sdn Bhd
A3	Pfizer (Malaysia) Sdn Bhd
A4, A5, A15 & A16	GlaxoSmithKline Pharmaceutical Sdn Bhd
A6, A7, A8 & A9	Merck Sharp & Dohme (Malaysia) Sdn Bhd
A10 & B16	Boehringer-Ingelheim (Malaysia) Sdn Bhd
A11, A12, A13 & A14	AstraZeneca Sdn Bhd
A17 & A18	Takeda Malaysia Sdn Bhd
A19	Endodynamics (M) Sdn Bhd
B1	Cipla Malaysia Sdn Bhd
B2	Bayer Co (Malaysia) Sdn Bhd
B3	Pahang Pharmacy Sdn Bhd
B4	Pharmaniaga Marketing Sdn Bhd
B5	Insan Bakti Sdn Bhd
B6	Respimedica Sdn Bhd
B7	Biocare Pharmaceutical (M) Sdn Bhd
B8	Somnotec (M) Sdn Bhd
B9	Daya Cergas (M) Sdn Bhd
B10	Compass Medical Sdn Bhd
B11	All Eights (M) Sdn Bhd
B12, B13, B14 & B15	Novartis Corporation (M) Sdn Bhd

# Floor Plan And Trade Exhibition

## Level 2



Booth No	Company
F4	Formedic Technologies Sdn Bhd
F5	DanMedik Sdn Bhd
F6	Orient EuroPharma (M) Sdn Bhd
F7	Edaran Bio-Medik & BKS Medik Sdn Bhd
F8	Lung Foundation of Malaysia
F11	Symbiomed Sdn Bhd
F12	Acucare Systems (M) Sdn Bhd

## **EVIDENCE-BASED TREATMENT FOR SMOKING CESSATION**

**Aziah Ahmad Mahayiddin**

*Columbia Asia Hospital, Setapak, Kuala Lumpur, Malaysia*

Tobacco use is the number one cause of preventable morbidity and mortality worldwide. Smoking cessation is one of the most cost-effective preventive care services but tobacco dependence is an addiction that is very hard to treat as it is a chronic disease that often requires repeated intervention and multiple attempts to quit. Clinically effective evidence-based treatments exist that can significantly increase rates of long-term abstinence. Identification and documentation of smoking status and treatment of all tobacco users seen in healthcare are essential. Three minutes brief intervention is important starting points for counseling patients at any the clinical encounter and had proven to increase abstinence. Individual, group and telephone counseling are effective and their effectiveness increases with treatment intensity. Practical counseling, social support, and motivational enhancement based approaches are primarily effective at increasing future quit attempts in smokers currently unwilling to quit. Proactive telephone quit lines provide patients easy access to support and can effectively augment clinic-based treatment and counseling. Counseling and medications are each effective as monotherapy; however, the combination is more effective than either treatment alone. Several medications are effective for tobacco dependence and should be considered. Hookah or syisya smoking has many of the same health risks as cigarette smoking. Using a hookah to smoke tobacco poses serious health risks to smokers and others exposed to the smoke from the pipe. The charcoal used to heat the tobacco can raise health risks by producing high levels of carbon monoxide, metals, and cancer-causing chemicals even after it has passed through water. Tobacco juices from hookahs irritate the mouth and increase the risk of developing oral cancers. Infections may be passed to other smokers by sharing a hookah as normally hookah is smoked in group and the pipe is passed around. Studies of tobacco-based shisha and “herbal” shisha showed that smoke from both preparations are known to increase the risks for smoking-related cancers, heart disease, and lung disease. Electronic cigarettes are now being widely smoke. Millions have started to use the device as an alternative for traditional cigarettes. This are battery operated nicotine inhalers with rechargeable lithium battery, and a cartridge filled with an e-liquid that contains the chemical propylene glycol along with nicotine, flavoring and other additives. E-cigarettes have not been fully studied especially the potential risks when used as intended. Early data in E-cigarette study raise some safety concerns. Many researchers have expressed the belief that e-cigarettes pose a far lower cancer risk than conventional cigarettes because they do not burn tobacco, however, how little is known about long-term effects of e-cigarette use or the specific effects of ingredients within the devices. Two factors could increase health risks to users: nicotine solvent and battery output voltage. Additionally, it is not known whether e-cigarettes may lead young people to try other tobacco products, including conventional cigarettes, which are known to cause disease and lead to premature death. On the 24th May this year, FDA proposes to extend its tobacco authority to additional tobacco products, including e-cigarettes.

**SPONSORED SYMPOSIUM 1A**  
*(AFT Orphan Ltd)*

## **IDIOPATHIC PULMONARY FIBROSIS: OVERVIEW OF A DEADLY DISEASE**

**Felix Chua**

*St George's Hospital NHS Trust, London, United Kingdom*

This talk will outline the key aspects of the disease including clinical presentation, the fundamental importance of HRCT as a diagnostic tool, predictors of poor prognosis, the value of decline in FVC as a surrogate for mortality and current treatment options. Non-classical phenotypes of the disease will also be discussed including so-called ‘slow progressors’ who are encountered in clinical practice but are typically excluded from drug trials.



## PAEDIATRIC RESPIRATORY SERVICE IN MALAYSIA

Norzila Mohamed Zainudin

*Respiratory Unit, Paediatric Institute, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia*

The Pediatric Respiratory service started In Universiti Kebangsaan Malaysia in 1985 by Dato Dr Azizi Hj Omar. Following that the service was started in Ministry of Health in Paediatric Institute, Hospital Kuala Lumpur in 1997. After 17 years, the services are available in Hospital Pulau Pinang, Hospital Serdang, Hospital Raja Perempuan Zainab II, Kota Bharu, Hospital Tuanku Ampuan Afzan, Kuantan, and Sultan Ahmad Shah. The services provided are general respiratory paediatrics, Sleep diagnostics, ambulatory respiratory which include home oxygen therapy and chronic ventilation, respiratory diagnostics such as lung function test, flexible bronchoscopy, pH study, 16 hours oxygen monitoring, and six minute walk tests. Currently, there are six paediatric respiratory physicians in the Ministry of Health, two in private and four in the universities. The subspeciality training is a three year programme. With the exception of Paediatric Institute all the centres in the Ministry of Health are gazetted for one year. The numbers of Paediatric Respiratory Physicians projected is 33 by 2020. This is a projection based on 1: 300,000 based on 10 million children age below 18 years old. Areas that need further consolidation are sleep diagnostics, interventional bronchoscopy and paediatric airway to meet the demands of the changing epidemiology of respiratory disease currently and in the future. Consolidation of the ambulatory team with better staffing and budget for delivery of care at home in children who are chronically ventilated or on home oxygen therapy as well as patients who require end of life care. The other area is bridging the care with the adult respiratory medicine for children who have grown to adulthood. There are many challenges which require more concentrated efforts from the team and the management. Efforts to produce the number of specialist as planned are behind time due to few trainees. Management of chronic illness requires a multidisciplinary approach. Better sub-specialized services from other allied health such as nutrition, pulmonary rehabilitation, physiotherapist and psychologist are needed.

### SYMPOSIUM 1

#### *S1A – Chronic Obstructive Pulmonary Disease*

## MANAGING THE DIFFICULT COPD PATIENT

David MG Halpin

*Royal Devon & Exeter Hospital and University of Exeter Medical School, Exeter, United Kingdom*

Patients with difficult COPD can be divided into those with persistent severe symptoms and those who continue to have exacerbations. A number of factors may contribute to the occurrence of frequent exacerbations and some of these are treatable. These include under diagnosis, severe disease, poor coping, poor organisation of care, wrong diagnosis, sub-optimal therapy both pharmacological and non-pharmacological. Risk stratifying patients can help ensure those at greatest risk of exacerbations receive optimal management to reduce that risk.

Newer treatment options may help reduce symptoms in those people with persistent severe symptoms; however, the benefits of improved lung function produced by combination bronchodilators do not appear to fully translate into improvements in patient centered outcomes.

Smoking cessation should also be considered treatment in people with persistent severe symptoms or frequent exacerbations.

## **SYSTEMIC EFFECTS OF COPD – LOOKING BEYOND FEV1**

**Sundari Ampikaipakan**

*Pantai Hospital, Kuala Lumpur, Malaysia*

Chronic obstructive pulmonary disease (COPD) has primarily been known to be a disease of the lungs secondary to cigarette smoking and characterized by airflow obstruction. By 2020, COPD will be the third cause of mortality in the world.

In recent years COPD has been recognized to have extra-pulmonary effects on distal organs. These systemic effects include skeletal muscle dysfunction, muscle wasting, nutritional abnormalities, cachexia, cardiovascular complications, metabolic complications and osteoporosis among others. It remains unclear as to whether they represent consequences of COPD itself or are secondary to chronic systemic inflammation.

In this lecture, we will review the evidence for the systemic effects of COPD and the need to treat these comorbidities in order to reduce the risk of exacerbations and prevent significant morbidity.

## **NON-INVASIVE VENTILATION IN ACUTE EXACERBATION OF COPD**

**Norhaya Mohd Razali**

*Respiratory Physician, Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu, Malaysia*

Hospitalization due to acute exacerbation of chronic obstructive pulmonary disease (COPD) is an indicator of severe disease. Patients with severe disease are prone to respiratory failure. Despite mechanical ventilation, a third of patients admitted with hypercapnic respiratory failure dies. Treatment for stable COPD includes bronchodilators, inhaled corticosteroids pulmonary rehabilitation and regular vaccination. During acute exacerbation, it is imperative that adequate oxygenation is achieved. The traditional method to ensure this is by invasive mechanical ventilation, however the procedure of tracheal intubation and assisted ventilation is associated with high morbidity and it may be difficult to wean these patients from ventilation. Intubation may cause damage to local tissues and during the course of ventilation pneumonia may ensue which will result in prolonged hospital stay. An alternative to intubation is non-invasive positive pressure ventilation (NPPV). Non-invasive positive pressure ventilation provides the patient air or a mixture of air and oxygen from a flow generator through an interface which comes in the form of a full facial or a nasal mask. This results in unloading of fatigued ventilator muscles. Over the last decade, NPPV has been increasingly used as an adjunct treatment in the management of acute exacerbation of COPD. This talk shall discuss the usage of NPPV in acute exacerbation of COPD.

## PLEURAL SPACE INFECTIONS

K Kannan

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

Pleural infections are a common problem encountered by doctors in multiple specialties and not just Respiratory Medicine. This presentation would cover an evidence as well as experience based approach towards managing pleural infections. We will cover historical, patho-physiological, investigative as well as management strategies for this condition.

## THE USE OF BIOMARKERS IN THE MANAGEMENT OF PNEUMONIA AND SEPSIS

John Abisheganaden

*Department of Respiratory & Critical Care Medicine, Tan Tock Seng Hospital, Singapore*

The incidence of sepsis is higher than that for heart failure, breast cancer, colon cancer and AIDS. The surviving sepsis campaign has provided several evidence-based recommendations for management strategies for resuscitation to improve sepsis survival rates, and early identification is the common thread. The use of inflammatory biomarkers to predict the need for intensive care in patients with community-acquired pneumonia was associated with a 10% reduction in absolute mortality rate, and the number needed to treat (NNT) was 10.

In the realm of sepsis, there is a whole array of biomarker candidates, ranging from acute phase proteins, to cytokines & chemokines, cell surface markers, receptor markers and markers of endothelial damage. An ideal sepsis biomarker should have high sensitivity, specificity and changes in accordance with the clinical evolution, adds independent information about the risk or prognosis, is reproducible, is easy to perform and is cheap.

Procalcitonin (PCT) and CRP have been most widely used, but have limited ability to distinguish sepsis from other inflammatory conditions or to consistently predict outcome. Numerous studies have established that lactate is a good marker of global hypoxia in circulatory shock, but has limited role in diagnosis. PCT is more specific than CRP, interleukin-6, and lactate for diagnosis of sepsis. CRP levels may not further increase during more severe stages of sepsis. PCT rises in proportion to the severity of sepsis and reaches its highest levels in septic shock. Newer sepsis markers include soluble CD14 subtype (presepsin), heparin-binding protein, TNF- $\alpha$ , interleukin-6 and others.

In summary, there is yet to be a perfect biomarker for sepsis. Some have been helpful in making the diagnosis of sepsis. They are tests that should be used with clinical correlation and in the context of predictive values. They can be used for early identification in patients when intervention is timely. Many new sepsis markers are currently under investigation.

## PULMONARY ASPERGILLOSIS

Sanjay H Chotirmall

*Respiratory Research Division, Royal College of Surgeons in Ireland, Dublin, Ireland*

*Aspergillus* moulds are ubiquitous and spores are inhaled in large numbers daily. Removed by intact anatomical barriers and an effective immune response, disease occurrence is dictated by the state of the host immune system and the virulence of the infecting fungal strain. Clinical consequences range from acute invasive disease in the immunocompromised to chronic cavitary manifestations in those immunocompetent. An excessive immune response occurs in allergic manifestations such as ABPA following *Aspergillus* exposure (1). This talk will introduce the spectrum of disease observed in relation to *Aspergillus* illustrated by clinical cases and radiology. Appropriate diagnostic and treatment strategies will be discussed. Interactions between *Aspergillus* species and the host immune system are bi-directional. The fungus elicits an immune response resulting in clearance while concurrently producing immunoevasive virulence factors. *Aspergillus* virulence is multifactorial and under polygenetic control. Strategies used are multi-faceted including fungal structure, capacity for growth, adaptation to stressful conditions, the ability to damage host cells and evade immune-recognition. Emerging research from our group will be presented including the role of gliotoxin, a potent immune-evasive mycotoxin in *Aspergillus*-associated disease. Immunosuppressive roles of gliotoxin include the inhibition of phagocytosis, T-cell proliferation, mast cell activation and cytotoxicity. Additionally, it inhibits superoxide production and reduces epithelial ciliary movement leading to dysfunction. In the context of *Aspergillus* colonization in cystic fibrosis, our group has performed a significant body of work (1-4). We have shown that the Vitamin D receptor (VDR), a key component of an immune-modulating pathway is down-regulated by gliotoxin. Treatment with itraconazole decreases bronchoalveolar lavage (BAL) gliotoxin concentrations, restoring VDR expression, diminishing systemic Th2 cytokines IL-5 and IL-13 with concomitant improvement in clinical and radiological patient outcomes (5). Understanding *Aspergillus*-associated disease is critical to early diagnosis and subsequent initiation of therapy in instances of pulmonary aspergillosis where to date the morbidity and mortality burden remains high.

### References

1. Chotirmall SH, Al-Alawi M, Mirkovic B, Lavelle G, Logan PM, Greene CM, et al. *Aspergillus*-associated airway disease, inflammation, and the innate immune response. *Biomed Res Int*. 2013;2013:723129. PubMed PMID: 23971044. Pubmed Central PMCID: 3736487.
2. Chotirmall SH, McElvaney NG. Fungi in the cystic fibrosis lung: Bystanders or pathogens? *The international journal of biochemistry & cell biology*. 2014 Mar 10. PubMed PMID: 24625547.
3. McMahon MA, Chotirmall SH, McCullagh B, Branagan P, McElvaney NG, Logan PM. Radiological abnormalities associated with *Aspergillus* colonization in a cystic fibrosis population. *Eur J Radiol*. 2012 Mar;81(3):e197-202. PubMed PMID: 21349668.
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5. Coughlan CA, Chotirmall SH, Renwick J, Hassan T, Low TB, Bergsson G, et al. The Effect of *Aspergillus fumigatus* Infection on Vitamin D Receptor Expression in Cystic Fibrosis. *Am J Respir Crit Care Med*. 2012 Nov 15;186(10):999-1007. PubMed PMID: 22904183. Epub 2012/08/21. eng.

## MANAGEMENT OF ARDS

**Tang Swee Fong**

*University Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia*

Acute respiratory distress syndrome (ARDS) remains a significant cause of morbidity and mortality in critically ill children. Since it was first described almost 50 years ago, there has been intense research activity with large numbers of studies addressing its pathogenesis and therapies. Despite this, there are only few effective therapies for ARDS other than the use of lung protective strategies and fluid conservative protocols. The lack of effective therapies is related to the complex pathogenesis of this syndrome as well as the lack of sensitive and specific diagnostic criteria. This presentation will summarise the key features in the new definition of ARDS and provide an overview of the evidence for the current therapeutic options. The key features of the new definition of ARDS include: removal of the term acute lung injury with ARDS now classified as mild, moderate and severe, according to the PaO<sub>2</sub>/FiO<sub>2</sub> ratio; defining the timing of onset as exposure to a known risk factor or worsening of the respiratory symptoms within one week, bilateral opacities involving at least 3 quadrants in the chest radiograph; and objectively evaluating cardiac function with echocardiography to exclude a cardiogenic origin of oedema. The use of protective mechanical ventilation remains the mainstay of ventilator therapy that has been shown to have a mortality benefit. The PROSEVA trial published in 2013 adds to the bulk of data that prone positioning in severe ARDS offers an absolute survival advantage. In 2013, two large trials in adult patients with moderate to severe ARDS failed to show any improvement in survival when used as first line therapy. As there is no specific treatment, research is now focusing on prevention and early recognition of ARDS. Furthermore, there are ongoing trials on promising future pharmacological therapies to improve the survival in this condition.

## VENTILATION AND IRDS IN PREMATURE INFANT

**Farah Inaz Syed Abdullah**

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

Respiratory distress syndrome (RDS), is a major cause of respiratory failure in preterm infants. RDS is due to surfactant deficiency and the incidence of RDS increases with decreasing gestational age especially in infants < 30 weeks. Interventions such as antenatal steroids with intubation, exogenous surfactant and extubation to continuous positive airway pressure (INSurE) are currently the mainstay of management for RDS. Endotracheal surfactant has been the widely accepted method of surfactant administration but trials are currently evaluating other noninvasive methods. However currently many trials are also showing data that the early use of nasal continuous positive airway pressure (CPAP) is as effective in the treatment of RDS in premature infants as intubation and surfactant therapy. Optimization of the premature infant's general wellbeing and reducing other risk factors also help to improve outcome as well as reducing complications such as bronchopulmonary dysplasia (BPD) and mortality.



## PAEDIATRIC ASTHMA: YEAR IN REVIEW

Norzila Mohamed Zainudin

*Respiratory Unit, Paediatric Institute, Hospital Kuala Lumpur, Kuala Lumpur, Malaysia*

Asthma is a childhood disease, which occurs through out life. Epidemiological studies had identified different phenotypes associated with variable disease. Should treatment be tailored according to phenotypes is debatable. Asthma Birth cohort has been published to identify, asthma persistence into adulthood, risks factors, inflammatory markers and lung function in adulthood. The Melbourne cohort studies evaluated at 50 years old, showed that asthmatics, children with severe asthma were at risks; than non asthmatic children to develop COPD . There were growing evidences of literature regarding the association of vitamin D and respiratory diseases. Many cross sectional studies were conducted in different populations examining levels of vitamin D in asthmatic children although the results are inconsistent. Results showed that low levels of vitamin D were found among the African- American adolescents with persistent asthma. The Spanish study showed that low levels of vitamin D were associated with reduced asthma control and one multi centre study concluded that vitamin D supplementation in children appears to prevent asthma exacerbations triggered by acute respiratory infection. Although at present there is no evidence to support screening of vitamin D for the purpose of asthma management. Increase in body mass index during the first 2 years of life has shown to increase the risk of asthma up to 6 years old. Possible mechanisms to explain the underlying relationship between the asthma obesity–link are inflammatory mediators, reduction in the lung volume, gastro-oesophageal reflux and Sleep disordered breathing were postulated. Inhaled corticosteroids reported to have minimal side effects compared to systemic steroids. Patients with well-controlled asthma who stop regular use of low-dose ICSs have an increased risk of an asthma exacerbation compared with those who continue ICSs. However, study findings showed that children with asthma receiving budesonide and beclometasone dipropionate have decreased linear growth and children who receive long-term inhaled corticosteroid therapy for asthma have height deficits 1—2 years after treatment initiation that persist into adulthood. Long-term therapy with inhaled corticosteroid therapy at is its lowest dose to achieve control is safer than frequent bursts of oral corticosteroids. The effects of corticosteroids on bone mineral density can be prevented by adequate nutrition and sufficient intake of calcium and vitamin D. Finally treatment of patients with severe asthma remains a challenge. There is now evidence that it is a heterogeneous groups with different sub phenotypes of which treatments should be targeted to specific pathogenic mechanisms

SYMPOSIUM 2  
S2A – Pulmonary Hypertension

## DETECTION AND DIAGNOSIS OF PULMONARY ARTERIAL HYPERTENSION

Roslina A Manap

*Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia*

The timely diagnosis of pulmonary arterial hypertension (PAH) is challenging. Initially, the symptoms of PAH are usually very mild. As the disease progresses, non-specific symptoms such as breathlessness or fatigue develop. Other conditions such as asthma, chronic heart failure, or even lack of fitness or depression are often considered before PAH. Increasing attention is also being paid to making a diagnosis of pulmonary hypertension, related to the fact that there are now therapies available. Screening tools currently available include Doppler echocardiography, assessment of dyspnoea, pulmonary function tests (PFTs) and serum biomarkers such as N-terminal pro-brain natriuretic peptide (NT-proBNP). Recent evidence suggests that WHO functional class I or II patients have significantly better long-term survival rates than patients in higher functional classes, thus providing a rationale for earlier diagnosis and treatment of PAH. A newer classification of clinical pulmonary hypertension has designated 5 categories that are distinctive because they differ in their clinical presentation, diagnostic findings, and response to treatment. As we now know, a treatment that is effective for one cause of pulmonary hypertension can worsen the prognosis for pulmonary hypertension due to a different cause. Approved treatments for pulmonary arterial hypertension have serious side effects, are exceedingly expensive, and have not been shown to be effective in patients with other forms of pulmonary hypertension. Despite advances in treatment options that have been made in the past few decades, the long-term prognosis for patients with pulmonary arterial hypertension remains poor.



## TREATMENT OPTION IN PULMONARY HYPERTENSION

Ashari Yunus

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

Pulmonary hypertension (PH) has no cure. However, treatment may help relieve symptoms and slow the progress of the disease. PH can be treated with drugs and medical and surgical procedures. Treatment will depend on what type of PH and its severity.

The 5th World Symposium Pulmonary Hypertension (5th WSPH) held in Nice, France in 2013 was classified PH into 5 categories and PAH (Pulmonary Arterial Hypertension) is a subset of PH. PAH is a group of diseases characterised by a progressive increase of pulmonary vascular resistance (PVR) leading to right ventricular failure and premature death.

The initial approach after diagnosis of PAH is the adoption of the general measures, the initiation of the supportive therapy and referral to an expert centre for the right heart catheterization and vasoreactivity test. General measures include recommendations on physical activity, pregnancy and birth control, air travel, psychological support, infection prevention and elective surgery. Supportive therapies include diuretics, oral anticoagulant treatment, oxygen therapy, digoxin and other inotropic drugs. Despite any available supportive treatment the median survival rate for PAH is poor after diagnosis and with the use of modern drug therapy as treatment leads to a significant improvement in PAH patients' symptomatic status and a slower rate of clinical deterioration.

Therapy with the modern drugs (Specific Drugs Therapy) for PAH needs to be initiated in patients who are not vasoreactive or are vasoreactive but not responding appropriately to calcium channel blockers. The specific drugs therapy will be targeted on 3 pathways include the endothelin pathway using endothelin receptor blocking agents, the NO pathway using PDE-5Is and the prostacyclin pathway using prostanoids. For the initial therapy, drugs are classified according to the grade of recommendation and the level of evidence on the basis of published RCTs. In addition, initial drug therapies are also stratified according to WHO-FC. After initial therapy the PAH patients will be reassessed based on clinical response and if the clinical response is considered not adequate, combination therapy is an option.

The long-term outcomes of medically treated patients remain uncertain even on combination therapy and for those who fail on medical therapy and remain in WHO-FC III or IV the next option is an interventional procedure such as atrial septostomy and lung transplantation.

## OPTIMISING DIAGNOSTIC YIELD IN RESPIRATORY ENDOSCOPIC PROCEDURES

Hilmi Lockman

*Hospital Ampang, Ampang, Selangor, Malaysia*

Patient with respiratory disease occasionally requires further more invasive investigations in order to better manage their conditions and this might include bronchoscopy (right/ flexible), endobronchial ultrasound(EBUS)/ endoscopic ultrasound(EUS) or pleuroscopy. The diagnostic yield from such procedures can vary depending from the techniques used to obtain sampling, the experience of the operator and the pathologist. The types of sampling methods include endobronchial/ pleural biopsy, transbronchial needle aspiration, endobronchial brushing, bronchial washings, transbronchial biopsies and bronchoalveolar lavage.

A CT scan of the chest is recommended to plan what procedure if best to obtain a pathological diagnosis and anticipating possible complications. For visible endoluminal tumours, 4 endobronchial biopsies using standard biopsy forceps should give a yield of 70-90%. However to obtain a more detailed molecular diagnosis the number of biopsies could be increased to 6. In lateral wall tumours sampling using a spiked biopsy forceps may help to anchor and obtain a better yield. Bronchial washings should be done after bronchial brushings and biopsies<sup>1</sup>.

Transbronchial needle aspiration (TBNA) could be used to sample either tumours or lymph nodes based on the CT scan findings. The diagnostic yield is around 40%. This however is slowly being superseded by EBUS and EUS where direct visualization during sampling leads to better diagnostic rates as high as 90%.

Transbronchial biopsy is used for diagnosing parenchymal lung disease with the added risk of pneumothorax.

In patients undergoing medical thoracoscopy/ pleuroscopy, pleural fluid sampling is essential and pleural biopsy could be performed at the same time. In patients with significant calcified pleural thickening, biopsies provides a challenge. This could be done by identifying the area to be biopsied with the scope and using an Abraham's biopsy needle to obtain the sample.

Autofluorescence bronchoscopy uses blue light can identify areas of dysplasia/ carcinoma in situ/ invasive microcarcinoma which may appear normal using white light bronchoscopy.

Other sampling method worthy of mention is cryobiopsy. This have been shown to be better than conventional endobronchial biopsy in preserving the molecular structure especially in cases of necrotic tumour.

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## OPTIMISING DIAGNOSTIC YIELD IN RESPIRATORY PATHOLOGICAL SPECIMENS

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With the advent of advanced and minimally invasive advanced diagnostic techniques, there are few sites in the body which cannot be sampled, especially with the assistance of sophisticated imaging modalities. This has posed new challenges to the diagnostic pathologist - samples are becoming smaller but more and more information is expected to be gleaned. While it is always preferable for as much biopsy tissue as possible to be obtained, this may not always be successful. It behoves the pathologist therefore to be judicious in the utilisation of whatever precious resource and confer with the clinician beforehand to decide on how the tissue should be utilised. If infection is suspected, appropriate samples should be secured for culture and molecular testing, before placing the tissue in formalin fixative. For neoplastic lung diseases, fresh tissue is vital if karyotyping or enzyme studies are to be undertaken. In the era of targeted therapy for non-small cell lung cancer, it is especially important to preserve tissue for molecular analysis. To this end, cytology samples, brushings, washings and effusions can be used to good measure for determination of mutational status or for FISH studies. Current detection technologies using real-time PCR have a sensitivity of 1 % and sensitivities of 0.1 % seem feasible soon. NGS (next generation sequencing) technologies promise simultaneous determination of multiple genetic aberrations, identifying ever more targets for personalised therapy. Analysis of circulating tumour cells is slowly becoming a reality, conceivably ushering in a time when invasive sampling procedures may be minimised considerably.

## OPTIMISING RESPIRATORY STATUS PRIOR TO CARDIAC SURGERY

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In the presence of congenital heart disease, the relationship between the functions of the cardiovascular and respiratory systems will be disrupted. Direct pulmonary complications of congenital heart disease are either by structural impact on the airways, abnormal pathophysiological mechanisms leading to wet lung and/or significant pulmonary disease. They are at greater risk of respiratory tract infections, which can cause prolonged hospitalization and delay of definitive cardiac repair. A careful history and physical examination are the most important parts of preoperative pulmonary risk assessment. If significant pulmonary disease is suspected by history or physical examination, determination of functional capacity, response to bronchodilators and/or evaluation for the presence of carbon dioxide retention through arterial blood gas analysis may be justified. Imaging like chest x-ray will give us additional information on the pulmonary status of the patient. In certain circumstances further imaging like HRCT/CT angiogram as well as bronchoscopy examination might be needed. The role for preoperative pulmonary function testing remains uncertain. Spirometry may be useful when there is uncertainty about the presence of lung impairment if patients able to do it. Optimizing patient respiratory status preoperatively, will be depends on the patient's pulmonary disease. Generally, patient with frequent airway collapse and malacic airway due to structural impact on the airways, will benefit from regular chest physiotherapy and CPAP or BIPAP application while awaiting for the surgery date. Patient with cardiac asthma should have been optimized their anti failures. For patients with asthma and hyperactive airways, they should be under control. It is also prudent to diagnose OSA preoperatively so special treatments can be applied appropriately as they are prone to postoperative hypoxemia quickly after emergence from general anaesthesia.

SYMPOSIUM 3  
*S3A – Interstitial Lung Disease*

## APPROACH TO INTERSTITIAL LUNG DISEASE

**Tengku Saifudin Tengku Ismail**

*KPJ Tawakkal Specialist Hospital, Kuala Lumpur, Malaysia*

The diagnosis of Interstitial Lung Disease (ILD) requires a multidisciplinary approach between clinicians, radiologists and pathologists. A meticulous history including occupational and environmental exposures, documenting drug exposures, eliciting signs and symptoms of collagen vascular disease or other primary diseases may provide a clue towards the diagnosis. 40% of patients presenting with ILD will have no identifiable cause of ILD after careful clinical evaluation. These patients are considered to have idiopathic interstitial pneumonias. Abnormalities on the chest radiographs are usually the first clue to the presence of ILD. Parenchymal infiltrates or nodules are typical finding on chest radiographs. HRCT are superior to chest radiographs and the pattern on HRCT can narrow the differential diagnosis and in some cases the HRCT is pathognomonic, obviating the need for lung biopsy. Pulmonary function test should be performed routinely in suspected ILD to assess the extent of lung impairment. The pulmonary function test will show a restrictive pattern but will not establish a specific etiological diagnosis. Serological studies are rarely diagnostic but are indicated if connective tissue disease or hypersensitivity pneumonitis is suspected. Bronchoalveolar lavage (BAL) or transbronchial lung biopsy (TBLB) may be helpful to diagnose specific infections and may narrow the differential diagnosis. Surgical lung biopsy using the video assisted thoracoscopic surgical (VATS) technique should be performed in patients with ILD when radiological imaging, BAL or TBLB are not definitive. This will establish a definite diagnosis to guide the clinician to treat and manage the patient with ILD.

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## **IDIOPATHIC PULMONARY FIBROSIS: WHAT IS EFFECTIVE?**

**Felix Chua**

*St George's Hospital NHS Trust, London, United Kingdom*

This talk will cover promising as well as failed treatment options for IPF. The latest phase III trial data for drugs with anti-fibrotic properties will be discussed. Important differences in trial design, patient characteristics and outcome will be explored.

## **COPD MOVING BEYOND DRUGS**

**Jamalul Azizi Abdul Rahaman**

*Respiratory Unit, Department of Medicine, Serdang Hospital, Selangor, Malaysia*

Emphysema is common, chronic, progressively disabling and eventually fatal. The disease is caused by cigarette smoking in 90% of the cases. The pathological process destroys the alveoli and causes hyperinflation, reduces lung elastic recoil and impairs gas exchange. The pathophysiology is compounded by compromised ventilation as the hyperinflated lungs are entrapped in a nonpliable chest cage and cannot expand adequately during inspiration. The most debilitating clinical manifestations of emphysema are dyspnea and reduced exercise tolerance. In the advanced phases, the patient is breathless during ordinary activities and eventually at rest. Pharmacological treatment offers modest symptomatic relief but does not halt disease progression. Many of these patients are out of options. Overall, the NETT trial showed that lung volume reduction surgery (LVRS) increases the chance of improved exercise capacity but does not confer a survival advantage over medical therapy. LVRS does yield a survival advantage for patients with both predominantly upper lobe emphysema and low exercise capacity. However, LVRS is associated with 5.5% mortality and 50% morbidity. Furthermore, only a minority of patients with emphysema would be suitable for surgery. Options for lung transplant for end-stage emphysema in Malaysia are limited due to donor shortage. Therefore, the emergence of minimally invasive interventional bronchoscopic strategies represents a significant advance in treatment options for patients with advanced emphysema. Bronchoscopic lung volume reduction (BLVR) is now available in Malaysia. BLVR strategies include one-way valve, lung volume reduction coil and bronchoscopic thermal vapour ablation therapy. To my knowledge, only one-way valve technique is available in Malaysia. BLVR using one-way valve should preferably be performed under general anaesthesia for patient comfort and safety. Rigid bronchoscopy is important when handling valve complications.

## **LUNG CANCER – WHAT CAN CHEST PHYSICIANS OFFER OTHER THAN CHEMOTHERAPY AND SURGERY**

**Alan Ng W K**

*Department of Respiratory & Critical Care Medicine, Tan Tock Seng Hospital, Singapore*

Patients with lung cancer may present with central airway obstruction posing a major challenge to clinical management. Symptoms can be dramatic with stridor, respiratory distress and hemoptysis. Because of advanced disease, surgical resection is often precluded; neither will chemotherapy or radiation therapy result in rapid resolution of symptoms. Left alone, progression of the obstruction inevitably results in respiratory failure and asphyxiation.

Bronchoscopic intervention has been shown to be an effective modality in achieving rapid relief of obstruction and symptoms. Intraluminal tumours can be resected simply by mechanical debulking, or using thermal ablation techniques such as endobronchial Nd:YAG laser therapy, or bronchoscopic electrocautery. When the obstruction is caused by extraluminal compression of the airway, the placement of a variety of stents can help to splint the airway open.

For best results, patients should be carefully selected to fulfil indications and minimise risks. One should also be aware that although these procedures are capable of delivering rapid and effective symptom relief, they are essentially palliative in nature, the main benefit being preventing death from respiratory failure, improving quality of life and also providing the opportunity to receive other treatment modalities (chemotherapy/radiotherapy) when stabilised.

Physicians should consider the possibility of central airway obstruction when attending to a lung cancer patient with breathlessness, so that evaluation and appropriate intervention can be carried out without delay.



## **AEROSOL THERAPY: FACTS AND MYTHS**

**Mariana Daud**

*Respiratory Unit, Department of Paediatrics, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan, Malaysia*

Inhaled therapies have been used since ancient times and may have had their origins with the smoking of datura preparations in India 4,000 years ago. Atomizers and nebulizers were developed in the mid-1800s in France and around the 20th century, combustible powders and cigarettes containing stramonium were popular for asthma and other lung diseases. The marketing of the first pressurized metered-dose inhaler for epinephrine and isoproterenol, by Riker Laboratories in 1956, was a milestone in the development of inhaled drugs. There have been remarkable advances in the technology of devices and formulations for inhaled drugs in the past 50 years.

Aerosol therapy is considered to be one of the cornerstones of respiratory medicine of 21st century. Aerosol is defined as a suspension of liquid and solid particles produced by an aerosol generator such as the small-volume nebulizer (SVN), the pressurized metered-dose inhaler (pMDI), or the dry-powder inhaler (DPI). Metered dose inhalers (MDIs) and dry powder inhalers (DPIs) are popular drug delivery devices used in the treatment of respiratory diseases such as asthma and chronic obstructive pulmonary disease (COPD). The measured deposition efficiencies of MDI and DPI aerosols were different, therefore they have important implications to inhalation therapy protocols.

There have been great scientific developments in theoretical modeling and indirect measures of lung deposition, particle sizing techniques and in vitro deposition studies, scintigraphic deposition studies, pharmacokinetics and pharmacodynamics. Aerosol particles generated by inhalers for respiratory drug delivery acquire electrostatic charge during the dispersion process. The electrostatic charge distribution of the particles can affect the efficiency of drug delivery by influencing both the transport and deposition of inhaled particles in the human lung.

The combination of the right medication and the most optimal delivery device with the patient's cognitive and physical abilities is critical. For aerosol therapy to be effective, the appropriate delivery system for the medication must be matched to the patient's ability to use it correctly. This lecture will highlighted the factors affecting aerosol deposition in the lower airways by different types of respiratory gadgets as well as their advantages and disadvantages.

Lastly, the rapid technologic progress in inhaled drug delivery and applications of aerosol science has led the use of the aerosolized route for drugs for systemic therapy, use of aerosolized antimicrobials and immunosuppressants, and use for gene replacement therapy.

## **ICS AND LABA, BETWEEN INDICATION AND SAFETY**

**Jessie A de Bruyne**

*Department of Paediatrics, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia*

Inhaled corticosteroids (ICS) have developed into a cornerstone in the treatment of children with asthma since the inflammatory nature of the disease was recognized. Its enhanced safety profile compared to oral corticosteroids made it an attractive option. However there are still concerns regarding their effects on the child in particular on growth and the hypothalamic-pituitary –adrenal axis.

The advent of long acting bronchodilators (LABAs) opened up a whole new treatment area in asthma and although they did not have anti-inflammatory effects studies suggested that the dose of inhaled corticosteroids could be reduced without worsening asthma control.

Unfortunately, in some cases, these LABAs were associated with increased mortality especially in certain ethnic groups. Warnings This led to a reassessment of their role in asthma control and it is now recommended that LABAs should not be used in isolation but together with ICS. A black box warning was initiated. However, as the combination was very beneficial in asthma control, the safety and efficacy of ICS/LABA combinations is now the subject of a multicenter trial under the unprecedented collaboration of 4 separate companies .

The quest for a magic bullet for asthma remains a distant dream, not least because of the heterogeneity of the disease.

## **OXYGEN THERAPY: BETWEEN GOOD AND BAD**

**Hasniah Abdul Latif**

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

Oxygen therapy is widely utilized in pulmonary and non-pulmonary conditions such as in acute and chronic hypoxaemia or hypoxia, respiratory failure, peri and post cardiac and respiratory arrest, low cardiac output and shock. It is used to decrease work of breathing by increasing alveolar oxygen tension.

Long term oxygen therapy (LTOT) is recommended for patients with chronic hypoxaemia, principally aims to improve symptoms and prevent effect from chronic hypoxaemia e.g. pulmonary hypertension. Other benefits include decrease in hospitalizations, optimization of physical growth and neurological development, improvement of exercise tolerance and quality of sleep. Patient groups potentially affected by chronic hypoxaemia include 1) chronic neonatal lung disease 2) congenital heart disease with pulmonary hypertension, 3)pulmonary hypertension secondary to respiratory disease, 4) interstitial lung disease, 5) obliterative bronchiolitis, 6) cystic fibrosis and other causes of severe bronchiectasis, 7)obstructive sleep apnoea and other sleep related disorders and 8) palliative care for symptom relief.

Oxygen therapy must be documented, monitored and managed appropriately. Several precautions and complications warrant consideration include 1) oxygen toxicity, 2) depression of ventilation in patient with chronic respiratory insufficiency 3) retinopathy of prematurity 4) patient with reduced minute ventilation, where supplemental oxygen may mask signs and symptoms of hypercapnea and 5) fire hazards.

Strategies to achieve optimal oxygen therapy will be discussed.

**AIR POLLUTION AND ASTHMA****John Abisheganaden***Department of Respiratory & Critical Care Medicine, Tan Tock Seng Hospital, Singapore*

Epidemiological studies have found consistent and coherent associations between air pollution and various health outcomes. These include respiratory symptoms, reduced lung function, flare of cardio-respiratory illness, hospital admissions, and mortality. Asthma is a chronic inflammatory disease of the airways. It is well understood that air pollutants often act as a trigger for asthma symptoms. There are two key air pollutants that can affect asthma. One is ozone (found in smog) and the other is particle pollution (found in haze, smoke and dust). The question of whether air pollution causes asthma is still open for debate.

It is unlikely that exposure to outdoor air pollutants causes asthma in the general population. However, it is possible that in a small group of asthmatics, who also live near busy roads, exposure to traffic-related air pollutants may have played a small part in causing their disease. The development of asthma may occur by a number of processes or interacting pathways. Air pollution is thought to cause oxidative stress in the lungs, leading to tissue damage and inflammation. Chronic inflammation might lead to lungs with an abnormal structure, and alterations to the structure of the airways could increase their sensitivity, leading to bronchial hyper-responsiveness. Once an individual suffers from asthma, there is good evidence that exposure to air pollution can increase the frequency and severity of asthma attacks. As such, people with asthma are advised to check their national air pollution warnings, as they are at risk from the effects of short-term exposure to air pollution.

**SYMPOSIUM 4***S4A – Lung Cancer***SOLITARY PULMONARY NODULES: APPROACH USING NAVIGATIONAL BRONCHOSCOPY SYSTEM****Devanand Anantham***Singapore General Hospital, Singapore, and Duke-NUS Graduate Medical School, Singapore*

The pre-test probability of malignancy of a solitary pulmonary nodule detected on radiology is dependent on: (1) Patient's clinical risk factors (2) CT characteristics and (3) Radiological stability. The nodules that have a risk probability between the radiological surveillance and the surgical resection thresholds are targeted for tissue biopsy. Other indications include discordance between the clinical probability and imaging findings, benign diagnoses that require specific treatment and patient choice.

Conventional bronchoscopic lung biopsy has a limited diagnostic yield (<60%) and is dependent on lesion size. Although, trans-thoracic needle aspiration has a diagnostic yield (>90%), the limitation is the pneumothorax complication rate that can exceed 20%. Considerable expertise is also needed to perform these needle aspirations depending on the size and location of the lesions. Improvements in bronchoscopic diagnosis have targeted every step of the biopsy process: (1) Pre-procedure planning, (2) Endoscopic navigation, (3) Real-time localization and (4) Rapid On-site Evaluation for adequacy of specimens. Navigational Bronchoscopy is not a single technological advance, but refers to heterogeneous group of procedures such as Virtual Bronchoscopy Navigation, Electromagnetic Navigation, Guide-sheath techniques, Ultrathin Bronchoscopy and Radial Endobronchial Ultrasound. These procedures have been proven to increase the diagnostic yield to > 70%. Further advances in yield using the currently available technology are likely to involve combining procedures. Examples of such combinations include Virtual Bronchoscopy Navigation with Endobronchial Ultrasound; or Electromagnetic Navigation with Endobronchial Ultrasound.

## COMMON SYMPTOMS IN PATIENT WITH ADVANCED LUNG CANCER

Hayati Yaakup

*Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia*

In this lecture the speaker will talk on:

1. Epidemiology of common symptoms among patients with advanced cancer
2. Discussion on two common symptoms and their pathophysiology, presentation and management.
  - a. Breathlessness:
  - b. Cough
  - c. Excessive secretion at terminal phase
3. Brief Case discussion and Conclusion

## HOME NIV FOR RESTRICTIVE LUNG DISORDERS AND NEUROMUSCULAR DISEASE

Anita K Simonds

*Royal Brompton Hospital, London, and National Heart & Lung Institute, Imperial College London, United Kingdom*

Long term non-invasive ventilation in neuromuscular disorders dates back many decades. Negative pressure ventilation was originally used to support patients with respiratory muscles weakness secondary to poliomyelitis, and in the 1960s positive pressure ventilation via mask was pioneered in Duchenne muscular dystrophy patients. In those with stable neuromuscular disorders NIV is associated with extended survival, and in those with progressive conditions NIV can considerably lengthen survival. Even in rapidly progressive diseases such as motor neurone disease (ALS), NIV in those with moderate or mild bulbar involvement can increase survival and is associated with improved quality of life, especially if symptoms are sleep-related. NIV can also produce good outcomes in those with chest wall disorders eg scoliosis, thoracoplasty. The combination of NIV with cough assist devices may be very helpful in avoiding the need for intubation. Growing data suggests that children with neuromuscular diseases previously thought to be lethal in childhood, may be able to transition to adulthood with the help of strategic ventilatory support and appropriate multidisciplinary care. These advances will be discussed.

## SENDING PATIENT HOME ON NON-INVASIVE VENTILATION

Asiah Kassim

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

There are many indications for patients to go home on Non-invasive ventilation (NIV). In children, the commonest indication for NIV used at home is airway obstruction. Airway obstruction in children is due to upper airway disease e.g. obstructive sleep apnea, severe laryngomalacia and Pierre Robin Sequence. Common condition causing lower airway obstruction is tracheomalacia or bronchomalacia. Other indications vary from restrictive lung disease, neuromuscular diseases, cardiac failure etc.

The preparation for patient to go home with NIV depends on medical diagnosis, home background, social and financial circumstances. Some patients went home to continue NIV for palliative care to relief their symptoms and some are send home with NIV while waiting for surgery like cardiac surgery. Type of house also varies in Malaysia as it affects the electrical supply and distance to the nearest health facilities. One of the major problem is financial issues which need to be address from the beginning.

Patient will be send home once they are stable to continue nursing care at home, parents and caregivers are well trained and prepared, all relevant medical equipments are available and they have appropriate house to go to. Most often medical equipments are funded by Malaysian government via Tabung Bantuan Perubatan Kesihatan Malaysia. Parents training include handling emergency situation at home. In summary, preparation of patient to go home on NIV involves whole patient approach including their family members and social circumstances.

## THE DARK SIDE OF THE MOON: WHEN, WHY AND WHERE SHOULD I NOT USE NIV

Anita K Simonds

*Royal Brompton Hospital, London, and National Heart & Lung Institute, Imperial College London, United Kingdom*

While NIV has revolutionised the care of acute hypercapnic exacerbations of COPD and altered the natural history of long term neuromuscular and restrictive chest wall disorders, it is not a universal panacea. There are some situations where NIV will either fail or be unlikely to succeed. The sensible clinician should be able to recognise these scenarios in order to apply NIV intelligently and optimally in caring for patients.

I will Identify 4 situations where NIV can be used but may fail, and how to manage that failure:

- a. Acute exacerbations of COPD. Here NIV may be successful in up to 80% of cases, but how do you identify the cases where it is failing and take avoidance measures?
- b. NIV in acute pandemic influenza, CoV infections: here NIV may be used in some subgroups of patients but in those with rapidly progressive acute lung injury (as in hypoxaemic respiratory failure of any cause) it has a low chance of success and should not delay intubation and invasive ventilation. Furthermore infection control precautions are vital and will be discussed.
- c. NIV in chronic fibrotic lung disease: here NIV cannot address the underlying pathophysiology, and may not control symptoms
- d. NIV as a palliative strategy in malignant disease. In fact NIV can reduce breathlessness in some endstage solid tumour patients, but is not successful in all. The evidence underlying these conclusions will be shown.



## **CEREBRAL PALSY AND PNEUMONIA**

**Rus Anida Awang**

*Paediatric Department, Hospital Pulau Pinang, Penang, Malaysia*

Cerebral palsy is characterised by motor impairment and can present with global physical and mental dysfunction. It is a static neurologic condition resulting from brain injury that occurs before cerebral development is complete. Complications of cerebral palsy include spasticity and contractures; feeding difficulties; drooling; communication difficulties; osteopenia; osteoporosis; fractures; pain; and functional gastrointestinal abnormalities contributing to bowel obstruction, vomiting, and constipation.

Children with cerebral palsy are susceptible to varying degrees of morbidity and mortality from respiratory complications. Pneumonia is the commonest reason for hospital admission for cerebral palsy. Among severely disabled children in three US institutions 77% of deaths were a result of pneumonia.

Predisposing factors for the development of pneumonia are inability to breath properly, inability to cough correctly, deconditioning of breathing muscles, feeding or swallowing difficulties (pseudobulbar palsy) leading to aspiration of saliva or food/fluid, aspiration from reflux, structural deformity (e.g, curvature of the spine, muscle tone, gravity), malnourish/under-nourish, muscle atrophy/weakness which predispose to reduce lung function and pneumonia.

Management of the underlying predisposing factors and pneumonia are being discussed.

SYMPOSIUM 5  
*S5A – Sleep Disordered Breathing*

## **ASSESSING SLEEP DISORDERED BREATHING – FROM QUESTIONNAIRES TO PORTABLE STUDIES**

**Ahmad Izuanuddin Ismail**

*Faculty of Medicine, Universiti Teknologi Mara, Selayang Campus, Batu Caves, Selangor, Malaysia*

Obstructive Sleep Apnoea Syndrome (OSAS) is a highly prevalent condition but significantly under-diagnosed. Clinical details obtained from the patients often susceptible to reporter and observer bias and may not produce objective and reproducible findings. Accurate risk assessment and triage of sleep referrals is highly desirable due to limited availabilities of diagnostic laboratories, not just in Malaysia but all over the world. Consequently, efforts have been made to standardize clinical history using questionnaires potentially allowing both for the identification of subjects with high likelihood of SDB, and for triage according to their symptomatology. Those with a high pre-test probability of OSAS subsequently can be subjected to portable monitoring to shift the workload from lab Polysomnogram. This review will focus on all the questionnaires available and recommendations pertaining to portable studies in diagnosing SDB.



## NEUROCOGNITIVE EFFECTS OF OBSTRUCTIVE SLEEP APNOEA

Anita K Simonds

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OSA is known to affect neurocognitive function including impacts on executive function, reasoning, learning, verbal memory, vigilance and attention. Interpretation of the relationship between these impacts and the degree of hypoaxemia and sleep fragmentation are confounded age, lack of knowledge of duration of OSA, educational experience, co-morbidity and wide inter person performance in test assessments. Neuro-imaging techniques have shown loss of hippocampal volume and grey matter changes in the cerebellum, parietal and frontal lobes in OSA cohorts. The interplay of these factors and the extent to which CPAP can reverse cognitive changes will be explored.

## SYMPOSIUM 5 S5B – Asthma

## PERSISTENT AIRFLOW OBSTRUCTION IN ASTHMA

David MG Halpin

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Approximately 10-15% of people with asthma have a degree of fixed airflow obstruction. The phenotype of asthma with associated with apparent airflow limitation is defined by FEV1/FVC ratio below the lower limit of normal for age and FEV1 < 90% predicted in a patient taking corticosteroids, after acute administration of a rapid onset bronchodilator. It is important to ensure that are complaint with therapy before diagnosing persistent airflow obstruction (PAO). It is also important to exclude other diagnoses such as vocal cord dysfunction, obliterative bronchiolitis and COPD.

PAO is more common in people with late onset asthma, those with a longer duration of asthma, in men and current smokers. Despite similar fixed airflow obstruction, subjects patients with PAO have distinct characteristics compared with subjects with COPD. PAO is associated with a more rapid decline in FEV1 over time.

There is little evidence about the most effective add-on treatment for people with PAO but tiotropium has been shown to improve lung function, decrease reliever use and reduce exacerbation rates when added to LABA/ICS in people with PAO.

## OCCUPATIONAL ASTHMA

Krishna Gopal Rampal

*Perdana University Graduate School of Medicine, Perdana University, Serdang, Selangor, Malaysia*

Work related asthma is the commonest occupational lung disease in most developed countries. The population attributable risk for adult asthma due to occupational exposures is 10% to 25%. Its diagnosis is however often overlooked. Work related asthma can either occur as a result of an aggravation of pre-existing asthma or occupational asthma. Aggravation of pre-existing asthma occurs due to exposures to potential irritants e.g. cold, dry air, dusts, smoke and fumes in the workplace and is more common in patients with moderate or severe asthma not receiving optimal treatment. Occupational asthma occurs due to causes that are attributable to a particular occupational environment among those with no previous history of asthma. Occupational asthma is either sensitizer-induced or irritant-induced. Sensitizer-induced occupational asthma is responsible for more than 90% of the cases. It is due to exposure to high-molecular-weight sensitizers (such as animal proteins, flour or natural rubber latex) and low-molecular-weight chemicals (such as diisocyanates, colophony [a pine resin product] or epoxy compounds). Irritant-induced occupational asthma is also known as reactive airways dysfunction. Occupational groups at high risk of developing occupational asthma include health care workers, wood workers, automotive workers, electronic workers and animal handlers. Diagnosis of occupational asthma is made based on a history of chest tightness, wheezing and shortness of breath, exposure to sensitizers or irritants, pulmonary function tests including serial peak expiratory flow readings, non-specific bronchial challenge (methacholine and histamine inhalation tests) and specific inhalation provocation tests, skin prick tests and blood tests for IgE to assess allergy to various occupational allergens. Impairment assessment for asthma is usually based on a total asthma score derived from scores given for airflow limitation (post-bronchodilator FEV<sub>1</sub>% predicted), reversibility of FEV<sub>1</sub> or degree of airway hyper-responsiveness and minimum medication needed.

## OVERLAP SYNDROMES IN ASTHMA (OBESITY, GERD, COPD)

Andrea Ban

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Asthma is a common disease encountered in our daily clinical practice. The diagnosis using the current practice guidelines enables us to form treatment plans for our patients. There is however a subset of asthma patients who do not respond well to treatment. This group is often overlooked and excluded from clinical trials, which make evidence on treatment limited. We tend to fall back on experience rather than evidence-base for this group.

Cluster analysis has proven that asthma is a heterogenous disease. Typically asthma patients have intermittent airway obstruction with reversible airways but in about 10-20% of patients, there is an overlap of features of both asthma and chronic obstructive airway disease. This is seen more commonly in the elderly asthmatics. Airway inflammation and obstruction still occur but the predominant cell type is may no longer be CD4 cells and the airway may not longer be reversible.

Obesity is a risk factor for developing asthma and it may worsen preexisting asthma. This group of obese-asthmatics have been shown to have a more difficult to control asthma. It may be due to the mechanics of breathing which is affected. They tend to have less eosinophilic type of inflammation and less response to conventional asthma treatment.

GERD occurs in more than 75% of asthmatics. It is associated with a more difficult to control asthma. The exact link is not well understood. Postulations include; heightened reactivity, microaspiration and an immune system modulation.

The interventions for each of the overlap syndrome may vary, but the common goal better if not total symptoms control and to prevent further exacerbations.

## SYMPOSIUM 5 S5C (Paediatric) – Aspiration Pneumonia

## RISKS AND COMPLICATIONS OF ASPIRATION PNEUMONIA

Asiah Kassim

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Aspiration pneumonia is an inflammation in the lung and airways following inhalation of any food or stomach or oropharyngeal content either fluid, semi-solid or solid. It may also known as “anaerobic pneumonia”. It is commonly found in subjects who are unconscious, semi-conscious, mechanically ventilated, during and post anaesthesia or neurologically deficit subjects. However, it can happen in a lucid subject following several medical conditions. They are swallowing incoordination, dysphagia, severe gastro-esophageal reflux disease, severe tachypnea, severe upper airway obstruction and any causes for recurrent vomiting. Mechanism for aspiration pneumonia varies according to material aspirated. Subject's reaction following aspirations are depending on type of aspirating materials, amount aspirated and subject response to the materials. Chemical aspiration and aspiration pneumonia may describe two different mechanisms i.e. non-infective and infective respectively. Following acute aspiration, a subject may develop acute respiratory distress but after recurrent aspirations it may lead to lung collapse, recurrent pneumonia and bronchiectasis.

## ASSESSMENT AND INVESTIGATION OF ASPIRATION PNEUMONIA

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Aspiration pneumonia should be suspected when a patient presents with risk factors and radiographic evidence of an infiltrate suggestive of aspiration pneumonia. Chronic pulmonary aspiration represents the repeated passage of food material, gastric refluxate, and/or saliva into the subglottic airways in a manner sufficient to cause chronic or recurrent respiratory symptoms. It may occur in sporadic and intermittent or coincidentally with other stressors, such as an upper respiratory tract infection.

The assessment include history and clinical examination. Children may present with chronic cough, wheeze, recurrent pneumonia, failure to thrive, choking on feeds or secretions, and radiological signs of chronic lung injury. It often occurs in children with complicated underlying medical conditions and syndromes that produce similar respiratory symptoms. Anatomic abnormalities like tracheo-oesophageal fistulas are often apparent at birth while h-type fistulas or laryngo-oesophageal clefts may be more difficult to detect. Other craniofacial abnormalities may also disrupt the coordination between swallowing and respiration, and predispose to aspiration.

The laboratory studies obtained should be guided by the patient's clinical assessment. Chest radiograph is inexpensive, widely available and able to assess accumulation of lung injury over time. While HRCT is more sensitive in detecting the consequences of chronic aspiration. In evidence of lobar collapse or major atelectasis, a therapeutic bronchoscopy may be helpful. Furthermore, the quantitative bacteriology may be obtained from the BAL samples. There are various tests which can be done in determining the cause of chronic aspiration like 24H oesophageal pH study, barium study, videofluoroscopic swallow study and fibreoptic-endoscopic evaluation of swallowing.

### PLENARY 3

## NON-INVASIVE VENTILATION: THE FIRST FEW MILLENNIA AND BEYOND

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The history of non-invasive ventilation is long and eventful, and moves in fits and starts. The story from early versions of negative and positive pressure attempts to support ventilation through to current autotitrating ventilators and the management of cardiac failure as well as respiratory failure patients will be recounted.

## **PROGRAMMATIC MANAGEMENT OF DRUG RESISTANT TB (PMDT)**

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In 2012 it was estimated that the global incidence of Tuberculosis(TB) was 125 cases per 100,000 population. Out of the 12 million (10-13 mil.) prevalent TB cases, around 630,000 were estimated to be multidrug-resistant(MDR). Drug resistance emerged with each new drug used and less drug resistance was observed when drugs were used in combination. Resistant strains from patients retained their ability to be transmitted to others. Even if most TB patients in the world are not drug-resistant (5% of total TB burden), the burden of MDR-TB in the world poses a formidable challenge to the prospect of controlling TB. Globally in 2012, about 3.6% of newly diagnosed TB cases and 20% of those previously treated for TB had MDR-TB. Swaziland, the country with the highest TB incidence rate in the world, has the highest level of primary MDR ever reported in Africa (7.7%).

Funding needs for TB are expected to continue to increase, with the largest relative increases being for the treatment of MDR-TB and for diagnostics & laboratory strengthening. In 2015, it is estimated that about 20% of the USD 8 billion that low- and middle-income countries require for TB care and control will be needed for the treatment of MDR-TB. In the year 2000 – the Green Light Committee(GLC) was established to support the 1st DOTS-Plus project for MDRTB. In 2002 the Global Fund decides that all proposals for MDR-TB treatment must be approved by the GLC. In 2012, the new MDR-TB support framework established the formation of Western Pacific Region- rGLC.

For 10 years (2000-2009), there were an estimated 5 million MDRTB cases of which only 0.5% were treated under GLC approved program and 1.5 million people died. This then lead to a transition from controlling to a supportive mode by country capacity building, rational ambitious scale-up plans, removing barriers, replicating success models and no GLC approval required for ordering drugs.

## **TB SCREENING AND SURVEILLANCE IN HEALTH-CARE WORKERS**

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The risk of healthcare workers (HCWs) contracting tuberculosis (TB) in the healthcare settings has been shown to be higher than those in the general community. However, many of those who contracted the disease remain asymptomatic (latent TB) but are at risk of developing TB reactivation in future. When the latter occurs, it will not only endanger the HCWs but also posts a risk of spreading the infection to the patients under their care, their family members and other colleagues. Hence, screening and surveillance of latent TB infection (LTBI) has become a standard practice at centres in developed countries which are taking care of significant number of TB patients. Notwithstanding, screening of HCWs for LTBI entails challenging issues, which include allocating adequate resources, selection of appropriate tests and interpretation of test results. For screening tests, there are basically 2 different types of tests available: the tuberculin skin test and the interferon-gamma release assays. Comparisons will be made on the cost-effectiveness, sensitivities and specificities of these 2 tests. And finally, discussions will be focused on whether LTBI screening or surveillance should be practiced at healthcare settings in TB endemic countries.

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<sup>5</sup>Faculty of Medicine, Universiti Teknologi MARA (UiTM), Selangor, Malaysia
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# ANXIETY AND DEPRESSION AMONG OLDER PATIENTS HOSPITALISED FOR ACUTE EXACERBATIONS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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## Introduction

Chronic obstructive pulmonary disease (COPD) is associated with exacerbation which is the main cause of hospitalisations especially among the elderly. Anxiety and depression are common co-morbidities, which are often under-diagnosed, and are associated with poor prognosis.

## Objectives

To evaluate the characteristics and occurrence of probable anxiety and depression among older patients hospitalised for acute exacerbation of COPD (AECOPD).

## Methodology

Prospective longitudinal study was conducted in four major hospitals in Malaysia. Older ( $\geq 60$  years) patients hospitalised with the primary diagnosis of AECOPD were included. Demographic data, co-morbidities, severity of dyspnoea and COPD were recorded. The occurrence of probable anxiety and depression were assessed using Depression Scale (GDS-15) and Generalised Anxiety Disorder-7 (GAD-7).

## Results

Eighty five patients were recruited during the one year study period. The median age was 72.1 (Inter Quartile Range (IQR) 66.4-78.3) years and 96.5% were male. Ethnicity distribution: Chinese (43.5%), Malay (42.4%) and Indian (10.6%). Almost a quarter (23.5%) was current smokers. Previous hospital admission due to COPD in the previous year was common (61.1%), of which, 41.2% with more than one admission. The most common co-morbidities were hypertension (49.4%), pneumonia (24.7%), and diabetes (24.7%). Majority of the patients had moderate to severe COPD based on the standardised GOLD criteria. The median score for dyspnoea severity among patients was 3 (IQR = 2-4). Probable depression was identified in 36.6% of patients. Anxiety symptoms were detected in 34.6% of the patients. Approximately quarter (25.9%) of the patients were detected to have both anxiety and depression. None of patients included in the study were taking anti-depressive or anxiolytic agents.

## Conclusions

Anxiety and depression were found to be relatively common among older patients hospitalised with AECOPD. Regular screening for the detection of the symptoms and initiation of appropriate treatment should be encouraged.

## EFFICACY OF AZITHROMYCIN IN THE TREATMENT OF BRONCHIECTASIS

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### **Background**

We evaluated the efficacy of 12 weeks treatment with azithromycin in adult patients with pulmonary bronchiectasis.

### **Methods**

A total of 78 patients with bronchiectasis confirmed by High Resolution Computed Tomography (HRCT) thorax were included in this study. Subjects received oral azithromycin or placebo in a randomised manner for 12 weeks followed by placebo for another 12 weeks to evaluate 'carryover' effect. 24 hour sputum volume, St. George's Respiratory Questionnaire (SGRQ) score and spirometry were recorded at baseline, 12 weeks and 24 weeks respectively. Endpoint measurements were compared from baseline to the end of each study phase.

### **Results**

68 subjects were included in the analysis. Mean 24-hour sputum volume significantly decreased ( $p < 0.01$ ) during the active treatment phase, and remained decreased during the control phase ( $p < 0.01$ ). The mean SGRQ total score with azithromycin decreased (i.e. improved health status) from baseline by more than the four-point minimum clinically important difference at the end of 12 and 24 weeks. Lung function remained stable during oral azithromycin therapy and throughout the subsequent control phase.

### **Conclusion**

12 weeks administration of azithromycin in bronchiectasis produces significant reductions in mean sputum volume, health status and stabilization of lung function values. The beneficial effects of oral azithromycin in reducing sputum volume and improving quality of life was sustained for another 12 weeks after cessation of azithromycin.

### **References**

Anwar GA 2008, Cymbala AA 2005, Davies G 2004.

### **Abbreviations**

High Resolution Computed Tomography, HRCT; St. George's Respiratory Questionnaire, SGRQ.

# SQUAMOUS CELL CARCINOMA OF THE LUNG IN SMOKERS AND NEVER SMOKERS: CLINICAL CHARACTERISTICS AND EPIDERMAL GROWTH FACTOR RECEPTOR MUTATIONS

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## Objectives

To define demographic and clinical characteristics of patients with squamous cell carcinoma (SCC) of the lung according to location of tumour and patients' smoking status and also to determine frequency and clinical predictors of EGFR mutation in SCC.

## Methods

Demographic, clinical and CT scan images of patients with SCC treated at Universiti Malaya Medical Centre from 2009 to 2013 were studied. Somatic EGFR mutations in diagnostic biopsy specimens were detected by allele-specific polymerase chain reaction.

## Results

Of 118 patients with SCC, central- SCC was more frequently (73.1%) located in right lung while 65% of peripheral- SCC were located in left lung [OR, 5.04; 95% CI, 2.22 - 11.45;  $p < 0.001$ ]. Among ever smokers, central SCC was significantly more common among heavy smokers (71.0%) than non-heavy smokers (29.0%) ( $p = 0.04$ ).

97 patients underwent EGFR mutation testing. 12 patients (12.4%) were positive for EGFR mutations. Significantly more female [6 of 24 (25.0%)] than male patients [6 of 73 (8.2%)] (OR, 3.04; 95% CI, 1.08 – 8.55;  $p = 0.04$ ) and significantly more never smokers [7 of 27 (25.9%)] than ever smokers [5 of 70 (7.1%)] (OR, 3.63; 95% CI, 1.26 – 10.26;  $p = 0.03$ ) had EGFR mutation-positive tumours. Multivariate analysis with gender and smoking history (never versus ever smoker) as covariates showed that only never smokers were independent predictor of EGFR mutations (adjusted OR, 4.55; 95% CI, 1.30 – 15.92;  $p = 0.018$ ).

## Conclusions

SCC in 12.4% of our patients was positive for EGFR mutations. EGFR mutations should be tested in SCC of Asian patients, particularly in never smokers.

# RETROSPECTIVE REVIEW OF PATIENTS DIAGNOSED WITH OBSTRUCTIVE SLEEP APNOEA IN RESPIRATORY CLINIC, PENANG GENERAL HOSPITAL IN 2012-2013

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## Introduction

Obstructive sleep apnea (OSA) is a disease of increasing prevalence and demonstrates heterogeneity in its manifestation.

## Objective

We aimed to characterise the various features of OSA in patients diagnosed in our clinic.

## Method

We retrospectively reviewed our OSA population by tracing their Outpatient Chest Clinic records using our CPAP Therapy Prescription book list. Upon acquiring the records, data will be captured using a prepared data form. Patients with incomplete data were excluded from the study. SPSS version 20 was used for statistical analysis.

## Results

A total of 78 patients were included with a mean age of 44.73 years (SD  $\pm$  13.66). 34 (43%) were Malays, 31 (39.2%) were Chinese, 7 (8.9%) were Indians and 6 (7.6%) patients belonged to other ethnicity. 98.7% (n=77) had history of snoring. 52.6% (n=41) had at least one cardiovascular comorbidity. In order of frequency, the comorbidities were hypertension (n=38, 48.7%), followed by diabetes (n=23, 29.5%), dyslipidemia (n=11, 14.1%), heart failure (n=7, 9%) and stroke (n=2, 2.6%). 27 (34.6%) had asymptomatic OSA. Only 51.3% (n=40) exhibited compliance to CPAP. Average duration of symptom onset-to-diagnosis was 31.3 months. The apnoea-hypopnea index (AHI) range was wide; 7.3 - 108.4 (mean: 43.5). Documentation on anatomical features was inadequate for analysis. Correlation between Body Mass Index (BMI) and AHI was weak but statistically significant ( $r=0.27$ ,  $p=0.01$ ). No significant correlation were found for BMI and Epworth Sleepiness Scale (ESS) ( $r=0.11$ ,  $p=0.30$ ), and AHI and ESS ( $r=0.03$ ,  $p=0.79$ ).

## Conclusion

In our patients, the prevalence of snoring history and cardiovascular comorbidities are consistent with known figures<sup>1,2</sup>. CPAP compliance of 51.3% is also comparable to some studies<sup>3</sup>. Our asymptomatic OSA prevalence is slightly higher than reported figures<sup>4</sup>. There is significant albeit weak correlation between BMI and AHI as previously reported<sup>5</sup>. However, we could not establish significant correlation between ESS and BMI or AHI unlike previous reports<sup>6,7</sup>. This could be due to our higher prevalence of patients with asymptomatic OSA, difficulty relating to an English-based questionnaire or underestimation of symptom severity. In summary, the characteristics of our patients largely correspond to those reported in published data.

1. Terry Young 2002
2. Ohayun MM 1997
3. McArdle N 1999
4. Duran J 2001
5. Santiago-Recuerda 2007
6. Lee SJ 2012
7. Geetha Kandasamy 2013

# **SURVIVAL AND PROGNOSTIC FACTORS OF ADULT TUBERCULOUS MENINGITIS IN PENINSULAR MALAYSIA**

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## **Introduction**

Tuberculous meningitis causes substantial mortality despite its low incidence. Identification of prognostic factors is crucial for better clinical management.

## **Objective**

This study was performed to determine the survival and prognostic factors of adult tuberculous meningitis patients in peninsular Malaysia.

## **Methods**

The medical records of 217 adult tuberculous meningitis patients treated or follow up in Hospital .Kuala Lumpur (HKL), Hospital Pulau Pinang (HPP), Hospital Sultanah Aminah Johor Bahru (HSAJB) and Hospital Universiti Sains Malaysia (HUSM) from 1<sup>st</sup> January 2006 to 31<sup>st</sup> December 2012 were reviewed retrospectively. Data collected included socio-demographic, clinical and treatment characteristics of the patients. Survival status and duration were determined with one year follow up period until 31<sup>st</sup> December 2013. Data entry and analysis were accomplished using Stata SE version 11.0. The Kaplan-Meier method was used to perform survival estimates while the log-rank test and the Cox proportional hazards regression model were employed to perform univariable and multivariable analysis.

## **Results**

Overall survival probability of adult tuberculous meningitis was 36.8%, median survival time 244 days. Significant prognostic factors were Malaysia citizen (aHR 0.33, 95%CI 0.20, 0.54; p<0.001), GCS score (aHR 0.73, 95% CI 0.67, 0.78; p<0.001), HIV status (aHR 2.56, 95% CI 1.56, 4.22; p<0.001), diabetes mellitus (aHR 2.98, 95%CI 1.63, 5.42; p<0.001), meningeal enhancement (aHR 0.46, 95% CI 0.30, 0.73; p=0.001), headache (aHR 0.62, 95% CI 0.40, 0.97; p=0.036) and LOC (aHR1.66, 95%CI 1.02, 2.69; p=0.041).

## **Conclusion**

Survival of adult tuberculous meningitis was relative low. Early diagnosis and prompt treatment is vital to reduce mortality.

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<sup>2</sup>Chest Clinic, Hospital Pekan, Pahang, Malaysia

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# **VIRUSES DETECTED IN CHILDREN PRESENTING TO THE ACCIDENT AND EMERGENCY DEPARTMENT IN UNIVERSITY MALAYA MEDICAL CENTRE, KUALA LUMPUR: A PROSPECTIVE STUDY**

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## ***Introduction***

Lower respiratory tract infections (LRTIs) are a significant cause of morbidity in children and viruses are often implicated as their aetiology.

## ***Objective***

To determine (a) types of viruses in children and (b) factors associated with need for admission in children presenting to the Accident and Emergency (A&E) department with LRTIs.

## ***Methods***

This was a prospective study from 1<sup>st</sup> September 2010 to 6<sup>th</sup> March 2012, at the Paediatrics A&E Department, UMMC, Kuala Lumpur. Children less than 3 years old presenting with respiratory symptoms had nasopharyngeal aspirates taken and tested for common respiratory viruses (rhinovirus, respiratory syncytial virus, parainfluenza virus 1-3, bocavirus, human metapneumovirus, and influenza A and B) by polymerase chain reaction. Demographic, environmental and host factors were obtained. Clinical assessment and management were recorded by the attending physician. Children with asthma were excluded.

## ***Results***

One hundred and eighty-one children with a median (IQR) age of 8(4, 12) months were recruited. Nasopharyngeal aspirates were positive in 55.2% (n=100) of patients. The three commonest viruses detected were RSV alone (25.4 %), rhinovirus alone (16.0 %) and parainfluenza virus alone (6.1 %). Five (2.8 %) patients had 2 detectable viruses. More than two-thirds of children (67.4) were admitted. In multivariate analysis, symptoms of fever and breathlessness were independent factors associated with admission for LRTI while being breastfed was protective against admission. Neither type of virus detected nor being positive for a virus was associated with admission for LRTI.

## ***Conclusion***

Viruses were detected in more than half of the patients seen in A&E with RSV and rhinovirus being the commonest. Children who were breastfed were more likely to be discharged from A&E while those with fever and shortness of breath were more likely to be admitted.

## **DOES POLYSOMNOGRAPHY PREDICT POST-OPERATIVE RESPIRATORY COMPLICATIONS AFTER ADENO-TONSILLECTOMY?**

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### ***Introduction***

Obstructive sleep apnoea (OSA) is common in children and polysomnography (PSG) is the gold standard for the diagnosis. Adeno-tonsillectomy is the surgical procedure of choice with high curative rate and relatively low morbidity. However, PSGs are expensive, time consuming with a long waiting time. The focus has been, traditionally, to anticipate post-operative airway and respiratory complications in this group of children. The aim of this study is to determine if PSGs can predict post-operative respiratory complications following adeno-tonsillectomy in OSA children.

### ***Methodology***

We performed a retrospective review between 1<sup>st</sup> January 2010 and 31<sup>st</sup> December 2013 at Universiti Malaya Medical Centre of 107 children aged three to eighteen years with clinical suspicion of OSA and who had an overnight PSG. Most (n=80) of these children had documented tonsillar size between 3+ and 4+. We looked at body mass index (BMI), apnoea hypopnea index (AHI) as per American Academy of Sleep Medicine guidelines and outcomes of patients who had adeno-tonsillectomy.

### ***Results***

The mean BMI in this group was 25.8 (SD=7.2). The median AHI was 4 (0 to 164) events/ hour. The mean stay in hospital was 2 days (SD=1) post-operatively and only five patients were admitted to the paediatric intensive care unit (PICU) for observation. They did not have any respiratory complications nor required any further intervention. Some patients had their adeno-tonsillectomy cancelled due to lack of available PICU beds. All the children recovered well post-operatively and needed no further support upon discharge.

### ***Conclusion***

In view of our low complication rates and low post-operative morbidity the need for mandatory overnight PSG pre-operatively should be reviewed.

## FOLLOW UP OF CHILDREN WITH CONGENITAL DIAPHRAGMATIC HERNIA AND NEED FOR A MULTIDISCIPLINARY CARE PROGRAM

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### Introduction

There is wide variation in follow up practices after initial hospitalisation and surgical repair of congenital diaphragmatic hernia (CDH) patients. We reviewed morbidities and follow up practices in our survivor cohort and propose a new comprehensive CDH follow up program.

### Method

This is a retrospective review of all CDH (n=65) admitted to paediatric intensive care unit (PICU) from 2003 till 2012. Controls without CDH were age matched and recruited for comparison of pulmonary function.

### Results

Of the 42 patients who survived, most were male (62%) and non-Malays (66.7%). Most were diagnosed postnatally. Mean gestational age was  $38.5 \pm 1.7$  weeks with a birth weight of  $2987 \pm 431$  gm. We noted a significant decrease in mean FEV<sub>1</sub> [ $68\text{mL} \pm 17\%$  v  $98 \pm 8\%$ ,  $p < 0.001$ ], FVC [ $71\text{mL} \pm 17\%$  v  $90 \pm 7\%$ ,  $p = 0.01$ ] and MEF<sub>25-75</sub> [ $62\text{mL/s} \pm 30\%$  v  $118 \pm 28\%$ ,  $p < 0.001$ ] compared to the controls. The length of stay in PICU was a risk factor for subsequent chronic lung disease (CLD) and asthma. Five (12%) patients were discharged on non-invasive ventilation, which was subsequently weaned off. One patient (2.4%) with pulmonary hypertension remains on oxygen therapy at home. Postnatal diagnosis of CDH and use of conventional ventilation were associated with CLD. More than half of our CDH survivors had failure to thrive (FTT) and musculoskeletal abnormalities. The duration of ventilation and of stay in PICU correlated with FTT. Recurrence of hernia was seen in 2 patients. Lack of medical follow up led to delayed detection of specific complications such as asthma (n=9), CLD (n=6), failure to thrive (n=14), musculoskeletal abnormalities (n=17) and hearing impairment with speech delay (n=1).

### Conclusion

A systematic long-term multidisciplinary follow up is needed in the standard care of CDH patients to detect and minimize further co-morbidities.



## **PARENTS' KNOWLEDGE REGARDING HEALTHY SLEEP IN YOUNG CHILDREN**

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### ***Introduction***

Insufficient and poor quality sleep is a growing health issue among children and has been associated with a number of consequences.

### ***Aim***

To examine sleep health knowledge, beliefs and their relationship to sleep practices among parents of young children in Hospital Serdang.

### ***Methodology***

57 patients without chronic illness who were admitted to the paediatric ward in March 2014 were enrolled. They were between 1 year to 12 years of age. Questionnaire forms on child sleep habits and parental basic sleep knowledge and beliefs and attitudes regarding sleep were given to parents on admission.

### ***Results***

50% of children did not have a consistent bedtime, 53% had a bedtime later than 10 pm on weekdays and 81% on weekends. 47% had at least one electronic device in the bedroom and 68% frequently fell asleep with an adult present. 72% of children did not have any bedtime routine. Both positive and negative sleep habits tended to cluster. 46% of parents did not consider sleep after 9pm to be late. 64% of parents thought that they needed to change their children's sleeping habits. And 74% of parents did not think seeking medical advice was needed.

### ***Conclusion***

The results of this survey suggest that there are clear parental knowledge gaps regarding healthy sleep in young children. Sleep health education needs to be emphasised.

## **RISK FACTORS ASSOCIATED WITH EXACERBATIONS OF COPD AMONG MALAYSIAN POPULATION AGED 40 YEARS AND ABOVE**

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### ***Introduction***

COPD is expected to be the 3rd leading cause of death by 2020. The prevalence and mortality rate unfortunately continues to rise despite the reduction in mortality of other chronic diseases such as coronary heart disease. There is a high prevalence of smokers in Malaysia and based on model projections, the prevalence of moderate to severe COPD in Malaysia is 4.7% which translates to 448,000 cases.

### ***Objective***

The aim of this study is to investigate the risk factors associated with exacerbations of COPD among Malaysian population aged 40 years and above.

### ***Methodology***

This is a prospective observational study across 8 general hospitals in Malaysia. Patients > 40 years old admitted with a diagnosis of acute exacerbation of COPD requiring hospital admission were enrolled in this study. Prior hospitalisation, demographic data, comorbidities and potential risk factors of COPD exacerbations were ascertained from patients and healthcare registries.

### ***Results***

A total of 222 subjects with mean age of 66 years old were enrolled. In this study, several predictive risk factors: smoking status (non smoker - 1.3%, current smoker - 16.2% and ex smoker - 73.9%), previous COPD exacerbations prior to hospital admission (no exacerbations - 31.6%, 1 exacerbation - 12.4%, 2 or more exacerbations - 47%), previous hospital admission for other causes (5.6%) and poor inhaler technique (12.4%) were all found to be significant risk factors of COPD exacerbations among Malaysian population.

### ***Conclusion***

Identifying significant risk factors of COPD exacerbation could potentially reduce the health care expenditure and improve the patient's quality of life and survival.

### ***Acknowledgement***

This study was supported by the Malaysian Thoracic Society Research Grant.

## COMORBIDITIES IN COPD PATIENTS ADMITTED WITH ACUTE EXACERBATION REQUIRING HOSPITALISATION IN MALAYSIA

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### Introduction

Comorbidities such as hypertension, diabetes mellitus and cardiac disease are common in patients with COPD. However the relationship between COPD, comorbidities and mortality are not fully understood.

### Objective

The aim of this study is to determine the prevalence of comorbidities in patients admitted to hospital with acute exacerbation of COPD.

### Methodology

8 centers participated in this study. Patients > 40 years old admitted to hospital with a diagnosis of clinical AECOPD were included. Prior hospitalisation, demographic data and comorbidities were ascertained from patients and healthcare registries.

### Results

A total of 222 subjects with mean age of 66 years old were enrolled. The prevalence of comorbidities was as follows: hypertension (32.9%), diabetes (19.4%), asthma (10.4%), previous pulmonary TB (9.9%), congestive heart failure (9.5%), bronchiectasis (5.9%) and myocardial infarction (2.7%). During 1-year follow up, 13 patients died. Among the 13 patients, five subjects had one comorbidity, three subjects had two comorbidities and two subjects had five comorbidities.

### Conclusion

Comorbidities are common in patients admitted with acute exacerbations of COPD. Comorbidities may contribute to a higher risk of mortality.

### Acknowledgement

This study was supported by the Malaysian Thoracic Society Research Grant.

## **GUIDELINE ADHERENCE AND TREATMENT OUTCOMES AMONG ASTHMA PATIENTS**

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### ***Objective***

To evaluate doctor's adherence to asthma clinical practice guideline (GINA 2011) on management and treatment of asthma in respiratory clinic at Hospital Pulau Pinang, Malaysia, and to evaluate treatment outcome of guideline adhered and non-adhered pharmacotherapy.

### ***Method***

This was a cross sectional study conducted at respiratory clinic of Hospital Pulau Pinang, Malaysia. Prescriptions written by 6 doctors for 180 established asthma patients, a total of 30 prescriptions per doctor were noted on 1<sup>st</sup> visit along with patient demographic and clinical data. Prescriptions written were categorised as "adhered" or "non-adhered" to CPG (GINA 2011). Treatment outcome of enrolled patients was calculated based on lung functions values (FEV1) that was noted during the patients' 2<sup>nd</sup> visit. SPSS 20 was used for data analysis.

### ***Results***

One hundred and forty three patients (79%) received guideline (GINA 2011) adhered pharmacotherapy. One hundred and thirty three (73.9%) patients had asthma control that was categorised as "partially controlled". Patient gender had a significantly positive moderate association with asthma control ( $p=0.015$ ,  $\phi=0.21$ ). Treatment outcome was successful in one hundred and fifty eight patients (87.7%) patients whereas treatment outcome was unsuccessful in 22 patients (12.3%). Of the 158 (87.7%) successfully treated asthma patients, 124 (78.4%) patients received guideline adhered pharmacotherapy whereas 34 (12.7%) patients did not received guideline adhered pharmacotherapy. Of the 22 (12.3%) patients unsuccessfully treated, 19 (86.3%) patients received guideline therapy and 3 (12.7%) patients did not receive guideline adhered pharmacotherapy.

### ***Conclusion***

Majority of patients received guideline adhered pharmacotherapy. However, doctors may deviate from guidelines based on their experience and patient clinical condition to optimize therapeutic outcomes.

## EGFR STATUS AMONG PATIENTS SUFFERING FROM ADENOCARCINOMA OF THE LUNG IN KUCHING – AN UPDATE FROM SLCSIG

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### ***Introduction***

Adenocarcinoma is now the commonest form of lung malignancy diagnosed in Kuching and Malaysia. EGFR receptor mutation is one of the targets for therapy and the incidence of its mutation in different exon varies according to gender, race and smoking status. The aim of our study is to describe the characteristic of patients with EGFR mutation.

### ***Methods***

This is a retrospective study. All patients seen in respiratory unit during the study period from November 2011 to February 2014 suffering from adenocarcinoma with EGFR status tested were included. Their characteristics were obtained from their clinic cards.

### ***Results***

188 patients had a diagnosis of lung malignancy during this period. 64.9% (n=122) were adenocarcinomas. Out of the 122, EGFR status was known in 98 patients. EGFR mutation was detected in 55.1% (n=54) of the cases. Deletion in Exon 19 was the most common mutation detected (n=26). This was followed by point mutation L858R in exon 21 (n=17). 2 patients had exon 20 insertion while 4 patients had more than 1 exon mutation. Female sex, non smokers and Chinese race had higher odds ratio for EGFR mutation in our population.

### ***Conclusion***

Our analysis showed that non-smokers and females were more common in the group of patients with EGFR mutation. Chinese ethnicity was also more common in these patients. Deletion in Exon 19 was the most common mutation detected.

## **PULMONARY ARTERIAL HYPERTENSION – 10 YEAR EXPERIENCE IN IPR**

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### ***Introduction***

Pulmonary arterial hypertension (PAH) is a progressive disease characterised by increased pulmonary vascular resistance, leading to chronic elevation in pulmonary arterial pressure resulting from restricted flow through the pulmonary artery circulation which typically will lead to right sided heart failure and premature death.

### ***Objectives***

The objectives are to determine the demographic characteristics and the outcome of pulmonary hypertension patients in our centre.

### ***Methodology***

A retrospective observational study of PAH cases managed from January 2004 to April 2014 in IPR and data collection was from individual patient's notes.

### ***Results***

Total number of PAH cases was 26. The median age was 34.5, range from 27 to 79 years old. Majority of cases were female (89%). Distribution between the races was as follows: Malay 65.4%, Chinese 26.9% and Indian 7.7%. Near half of the patients were in the category of PAH class I (idiopathic) followed by class II (left heart disease) (34.6%), class III (lung disease) (7.7%), class IV (chronic thromboembolism) (3.8%) and class V (others) (7.7%). With regards to PAH therapy, 30.8% of patients were on mono-therapy, 26.9% on dual therapy, 19.2% on triple therapy and 23.1 % were not on treatment. With respect to outcome of this study cohort, 65.4% patients were still on medical therapy, 19.2% had defaulted and 15.4% had died. However there was no correlation between functional class pre- and post-treatment, result of 6 minute walking test and treatment with the outcome ( $P=0.202$ ,  $P=0.273$ ,  $P=0.767$  and  $P=0.765$  respectively).

### ***Conclusion***

Our results demonstrate that majority of PAH patients had idiopathic disease and the second largest group had left heart disease as the aetiology. Majority of our patients were on PAH treatment. There were no statistically significant correlation between functional class pre- and post-treatment, 6 minute walking test and treatment with the patients' outcome.



## **CHARACTERISTICS OF PATIENTS SUFFERING FROM DIFFUSE PARENCHYMAL LUNG DISEASES (DPLD) IN RESPIRATORY CLINIC, KUCHING, SARAWAK – A CASE SERIES**

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### ***Introduction***

DPLD or interstitial lung diseases (ILDs) are heterogeneous group of disorders classified together because of similar clinical, radiographic, physiologic, and pathologic manifestations. Diagnosis and management are challenging. There is minimal information on the type of DPLD or characteristics of patients suffering from DPLD in Sarawak.

### ***Objectives***

To report the characteristics of patients suffering from DPLD.

### ***Methodology***

Patients suffering DPLD were identified by going through all the case notes of patients in respiratory clinic. Patient data was included if DPLD was considered a possible diagnosis. Patients suffering from tuberculosis were excluded from the analysis.

### ***Results***

A total of 27 patients were found to be suffering from DPLD during the period of July 2011 to Feb 2014. Out of that, 7 had connective tissue disease related ILD (CTD-ILD) and 8 were classified as idiopathic pulmonary fibrosis (IPF). Mean age was 56 years old. Mean age for those suffering from CTD-ILD is 49.6 compared to 67.8 years old for those suffering from IPF. Male and female distribution was equal. Majority of the patients suffering from DPLD were Chinese 70.4% (n=19), followed by Malays (n=3) and Iban (n=3). Only 30% of the patients were smokers. Most of the diagnoses were made from radiological findings and clinical history and tissue diagnosis was obtained in only 3 patients. All the patients diagnosed as CTD-ILD received systemic immunosuppressant, whereas only 2 out of the 8 IPF patients are given a trial of oral steroids.

### ***Conclusions***

DPLD is not a common disease referred in the respiratory clinic, Hospital Umum Sarawak. Diagnosis is usually made radiologically and clinically. Treatment was heterogeneous, with CTD-ILD patients usually receiving systemic immunosuppressant.

## AN OPTIMISING STUDY FOR THE WEANING MODELING OF CLINICAL MECHANICAL VENTILATOR

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The purpose of this study is using data analysis technology to analyse the clinical data from a respiratory care (RC) in Taiwan. The eligible criteria of samples must be the respiratory failure more than 24 hours and their age over 18 years old. Data collection period was from September to December, 2012. With the met criteria there were 359 samples, male and female was 241 (67.1%) and 118 (32.9%), respectively. The average age was  $66.5 \pm 16.98$  years old; there were 195 cases in Surgery and 164 cases in internal medicine. There was diversity of disease severity, with average APACH II score of  $22.10 \pm 7.17$ . Successful weaning was achieved in 235 cases (65.5%) and there was failure in 124 (34.5%). The independent variables screened daily included the solving result of respiratory failure, the use of sedatives, the use of vasopressors, the Positive End Expiratory Pressure (PEEP), the coughing ability, the Fraction of inspired oxygen (FiO<sub>2</sub>) and the rapid shallow breathing index (RSBI). These variables were significantly correlated with the success of weaning. The fitting (Hosmer-Lemeshow test) of daily screening parameters model tested was 4.084 ( $P = .770 > .05$ ). The data showed the regression models had a goodness of fit, and reached the clinical used quality. In particular, the total score, the ability to cough, the PEEP and the RSBI were significant. For the accuracy analysis, the weaning score, the sensitivity, specificity, positive predictive value, negative predictive value, accuracy rate, positive likelihood ratio and negative likelihood ratio were 94.89%, 74.19%, 87.5%, 88.5%, 87.7%, 3.68, and 0.07, respectively.

In conclusion, our study showed that the weaning score, the ability of cough, RSI and PEEP had significant correlation with the success of weaning. These four variables can be used as the rapid screening index for judging the weaning process.

### **Keywords**

Respiratory Failure, APACH II, Daily Screening, Weaning Score

## **TUBERCULOSIS MORTALITY 2011 TO 2013: IPR EXPERIENCE**

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### ***Introduction***

Tuberculosis (TB) is still a worldwide deadly threat despite global and national control programs. Understanding factors leading to death following diagnosis of TB is important to predict prognosis in TB patients.

### ***Objectives***

To determine the demographic characteristics and to identify the risk factors causing death among TB patients in our centre.

### ***Methodology***

A retrospective study analysed the TB mortality cases in IPR from January 2011 to December 2013. Data collection was based on individual patient's notes.

### ***Results***

Total number of mortality cases among TB patients was 47. More than half were classified as TB death (61.7%). The mean age was 50 years old. Male to female ratio was 9:1. The majority were Malaysians (91.5%). Malay ethnic group accounted for the highest proportion (55.3%) of patients followed by Indian (21.3%) then Chinese (14.9%). 53.2% of the patients were drug users and 14.9% had HIV co-infection. 11 patients had concomitant extra-pulmonary TB. Most cases were sensitive to first line anti-TB therapy (89.4%). Majority of patients had advanced radiological findings (89.4%). 22 out of 47 cases ended up with lung complications and sepsis. We found significant correlation between severity of radiological findings and TB death ( $P < 0.05$ ). History of drug use, HIV co-infection and drug resistant pattern showed a trend as risk factors for the TB death ( $P = 0.122$ ,  $P = 0.157$  and  $P = 0.176$  respectively). However there was no correlation between duration of symptoms and complications with TB death ( $P = 0.248$  and  $P = 0.507$ ).

### ***Conclusion***

Our result demonstrated more than half of TB mortality cases were classified as TB deaths. Majority of patients were Malaysian and fifty percent had history of drug abuse. Advanced radiological changes were significantly correlated with TB death.

## CHEST XRAY FEATURES IN SMEAR NEGATIVE PULMONARY TUBERCULOSIS IN SABAH

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### **Introduction**

Pulmonary Tuberculosis (PTB) remains a big public health problem in Malaysia with Sabah state contributes one third of the total cases in the country. Smear negative pulmonary Tuberculosis (SNPTB) is a special entity which is difficult to diagnose and often small in number. We reviewed if CXR features in Sabah conformed to published scoring predictors for SNPTB.

### **Method**

Case notes and CXR are reviewed from TB Clinic, Queen Elizabeth Hospital (QEH), Kota Kinabalu from 2010 until November 2012. All SNPTB were defined by WHO guideline 4<sup>th</sup> edition. Patients' demographic data and CXR features were recorded. Exclusion and inclusion criteria were used. CXR were reported in a standardised format by a radiologist.

### **Findings**

13 patients satisfied the inclusion and exclusion criteria, 4 males (30%) and 9 (70%) females. Mean age was 43 years. All CXR were abnormal. The predominant feature was air space opacities. Apical and upper segment involvement and bilateral lesions were predominantly seen.

### **Discussion**

Clinicians face uncertainties when faced with SNPTB. In a highly endemic area like Sabah, differentiating PTB from other lung infection or disease is often difficult. Our findings are in contrast with the published literature<sup>1</sup>. All of our cases presented with abnormal CXR. This may be due to cultural differences in health seeking behavior and their perception of TB in their community<sup>2</sup>.

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## PREVALENCE OF POSITIVE MANTOUX TEST AND IGRA AMONG HEALTH CARE WORKERS IN HOSPITAL PEKAN

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### **Introduction**

Healthcare workers' (HCW) increased risk of contracting tuberculosis (TB) is well documented in various studies. Mantoux test is widely available for screening tuberculosis but it has several weaknesses. Interferon Gamma Release Assay (IGRA) is a new promising tool to overcome the weakness but its use in HCW screening remains to be clarified.

### **Objectives**

To estimate the prevalence of positive Mantoux test (> 15 mm) and IGRA in healthcare workers (HCW) with positive Mantoux test in Hospital Pekan.

### **Methodology**

All staff working in Hospital Pekan were offered voluntary Mantoux testing since 2012 and were required to answer a standardised questionnaire. HCW with positive Mantoux were offered an IGRA test (Quantiferon Gold In-Tube-QFT) which was done at Makmal Kesihatan Awam Kebangsaan (MKAK) Sungai Buloh. A total of 243 HCWs in the hospital were screened from April 2012 to December 2012. Chi square test was used to analysed the association of positive Mantoux test.

### **Results**

The prevalence of positive Mantoux test among HCWs was 21.4% (n=52). Only 21 (40.4%) of the positive Mantoux HCW agreed for an IGRA test. Out of 21 HCW, 7 were IGRA positive (33.3%) and 14 were IGRA negative (66.7%). Factors significantly associated with positive Mantoux test were duration of service of more than 10 years ( $p=0.021$ ), history of tuberculosis ( $p=0.006$ ) and history of type 2 diabetes mellitus ( $p < 0.001$ ).

### **Conclusions**

Positive Mantoux test among healthcare workers in Hospital Pekan was associated with duration of service, history of tuberculosis and underlying type 2 diabetes. HCW with positive Mantoux and IGRA should be encouraged to take treatment for latent tuberculosis.

## **RESULT OF MANTOUX TEST SCREENING AMONG HEALTH CARE WORKERS IN HOSPITAL UMUM SARAWAK**

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### ***Introduction***

Health care workers (HCWs) are at increased risk of nosocomial TB infection. Mantoux test screening in asymptomatic high risk HCWs is one of the administrative controls advocated by the Occupational Health Unit, Disease Control Division of Ministry of Health Malaysia to help in early identification of HCWs suffering from Latent TB.

### ***Objectives***

To report the results of Mantoux testing among the staffs in Hospital Umum Sarawak (HUS)

### ***Methodology***

All staff working in HUS were offered voluntary Mantoux testing since 2012. Those positive (> 15mm) were worked up for active TB and a questionnaire was given to the staff to identified potential source of infection. Results of all the staff who underwent screening in 2012 and 2013 are recorded and analysed.

### ***Results***

A total of 2292 Mantoux readings were done at 84 clinics and wards from HUS in 2012 and 2013. 16 % (n=374) of staff tested had a positive Mantoux test. Out of that 17.9 % (n=67) were professional and management category staff while the rest (n= 307) were allied health and support staff. 5 staff are found to have active TB while 8 staff had past history of TB disease. Mantoux test positive rate are higher for staff working in non-TB wards compared to staffs working in Medical Isolation (TB wards)

### ***Conclusions***

Mantoux testing is a labour intensive exercise. While it may detect active tuberculosis in some cases, its routine use remains controversial. It is unknown if positive Mantoux test indicates latent TB infection in HCWs but it is important to highlight the importance of vigilance in even in non-TB wards.



# CLINICAL CHARACTERISTICS OF PATIENTS WITH SPINAL TUBERCULOSIS AT A MALAYSIAN TEACHING HOSPITAL

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## **Introduction**

Spinal tuberculosis is one of the most dangerous forms of skeletal TB affected in spine and accounts for 50% of all cases of skeletal TB.

## **Objectives**

To analyse the characteristics of patients with spinal tuberculosis reported at Orthopaedic Department, Hospital Universiti Sains Malaysia.

## **Methodology**

A retrospective record review of 45 patients with spinal tuberculosis was conducted at Hospital Universiti Sains Malaysia by assessing the medical records and radiographic finding from 2005 to 2014. Kyphosis angle was measured in each patient by an orthopaedic surgeon. The kyphosis was then categorised into kyphosis  $\leq 30^\circ$  and kyphosis  $> 30^\circ$ . Simple linear regression and Fisher's Exact Test was applied by using IBM SPSS 20.

## **Results**

The mean (SD) age of the patient at the time of diagnosis was 53.47 (17.20) years. Majority of the patients were male (57.8%) and Malay (97.8%). The mean (SD) of kyphosis angle was  $13.64^\circ$  (12.84). The majority of the lesions involved the lumbar spine (42.2%) followed by thoracic spine (37.8%). Abscess was seen in 64.4% of the patients. A total of 68.9% of the patients had duration of illness more than one year. The mean (SD) of number of vertebral bodies involved was 2.16 (0.77). The most common presenting complaints included back pain (77.8%), pain elsewhere (53.3%), fever (44.4%), night sweat (26.7%) and cough (33.3%). Increase in one year of age of the patients at the time of diagnosis would reduce 0.32 degrees the angle of kyphosis (95% CI -0.53,-0.11,  $=0.03$ ). There was significant association between kyphosis severity and duration of illness ( $=0.023$ ).

## **Conclusions**

Younger patients were more likely to develop greater kyphosis angle. Severity of kyphotic deformity was associated with duration of illness. Classifying the characteristics of patients are needed to identify patients at higher risk of disease.

## FACTORS ASSOCIATED WITH SEVERITY OF KYPHOTIC DEFORMITY AMONG SPINAL TUBERCULOSIS PATIENTS

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### **Introduction**

Spinal tuberculosis is a form of skeletal disease and represents the most common form of skeletal tuberculosis. The complication such as kyphotic deformity affects the quality and span of life.

### **Objective**

To determine the proportions and factors associated with kyphotic deformity among Spinal Tuberculosis patients.

### **Methods**

A retrospective record review of 85 patients with spinal tuberculosis was conducted at Hospital Universiti Sains Malaysia and Hospital Raja Perempuan Zainab II from 2005 to 2014 and 2008 to 2014 respectively by assessing the medical records and radiographic findings (MRI and X-ray). Kyphosis angle was measured in each patient by two orthopaedic surgeons from both hospitals and had been categorized into kyphosis  $\leq 30^\circ$  and kyphosis  $> 30^\circ$ . Socio-Demographic Characteristics, Clinical Presentations, Imaging Study Findings and Disease Characteristics were reviewed from the medical records. Proportions of kyphosis were determined by using IBM SPSS 20. Multiple logistic regression was applied by using IBM SPSS 20 and Stata (SE) 11 to identify the factors associated with kyphotic deformity.

### **Results**

Proportion of kyphotic deformity in kyphosis  $\leq 30^\circ$  was 90.6% (95% CI 0.84, 0.97) and kyphosis  $> 30^\circ$  was 9.4% (95% CI 0.03, 0.16). Four significant adjusted associated factors that affected kyphotic deformity were age of the patient at the time of diagnosis (Adjusted OR=0.84, 95% CI 0.73, 0.98), number of vertebral bodies involved (Adjusted OR=10.15, 95% CI 1.12, 92.11), type of vertebrae affected; eighth thoracic (T8) (Adjusted OR=18.39, 95% CI 0.89, 384.97) and eleventh thoracic (T11) (Adjusted OR=56.66, 95% CI 2.70, 1202.85).

### **Conclusion**

Younger patients were at risk to develop greater kyphotic deformity compared to adults. Increasing in vertebral involvement particularly in thoracic region may have developed severe kyphotic deformity as well. Kyphotic deformity should be prevented with early detection and effective treatment.

# TIME SERIES ANALYSIS AND FORECASTING OF RATE OF TUBERCULOSIS TREATMENT SUCCESS AMONG TB/HIV CO-INFECTION IN KELANTAN

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## Background

Human immunodeficiency virus (HIV) is the greatest single risk factor for developing TB (Lazarus, 2008). Many studies had reported the increasing in trend of TB/HIV co-infection cases (Jatan, 2010). This study was designed to study the pattern and the best time series model for forecasting the tuberculosis treatment success among TB/HIV co-infection in Kelantan.

## Methods

A cross-sectional of population-based study among TB/HIV co-infection patients from year 2005 to 2012 were conducted in Kelantan by reviewing tuberculosis records in all hospitals and health clinics. Patients with outcome of cure and treatment completed were classified as having tuberculosis treatment success. Three types of exponential smoothing models and four types of Box-Jenkin's model were fitted to the model. Mean Square Error (MSE) and Mean Absolute Percentage Error (MAPE) were two error measures used for comparing the models.

## Results

Out of 1562 all of TB/HIV co-infection patients throughout the years, only 420 of them achieved treatment success. Slightly increasing trend pattern and irregularities of outlier were two components found in the data series. The best Exponential Smoothing model that fit the data series was Single Exponential Smoothing model (SES) while ARMA (2,2) was found to be the best Box-Jenkin's model. However, between the two models, SES was found to have smaller error compared to ARMA (2,2).

## Conclusion

The slightly increasing trend obtained indicates that the approach that has been implemented by the Ministry of Health (MOH) was effective. However, the overall estimated rate has not improved much. Thus, the strategy should be improved by emphasising potential factors that may affect the tuberculosis treatment success rate among TB/HIV co-infection.

# RETROSPECTIVE REVIEW ON CLINICAL CHARACTERISTICS AND OUTCOME OF TUBERCULOSIS IN PATIENTS WITH RETROVIRAL POSITIVE DISEASE IN HOSPITAL MELAKA, MALAYSIA IN 2012-2013

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## **Introduction**

The incidence and characteristics of tuberculosis (TB) among HIV infected individuals in Malaysia are largely unknown. There is no local data on the impact of retroviral disease (RVD) in response to TB treatment and mortality among TB patients.

## **Objective**

To understand the clinical characteristics and outcome of TB in RVD patients in Hospital Melaka.

## **Methodology**

All adult RVD patients diagnosed with TB infections during January 2012 to December 2013 in Hospital Melaka, Malaysia were retrospectively reviewed.

## **Results**

A total of fifty-seven RVD patients (male: 52, female: 5) with TB infections were identified during that period. However, only fifty patients had complete data for analysis. The mean age of the RVD patients with TB was 37 years (range, 19-63 year). Most patients were in the advanced stages of RVD when TB was first diagnosed. Their mean CD4 cell count was 100 cells /mm<sup>3</sup> (IQR, 5-422 cells /mm<sup>3</sup>). Clinical symptoms were nonspecific, and the chest physical examination was not helpful in the diagnosis of pulmonary tuberculosis. Atypical patterns (diffuse interstitial infiltrates mimicking *Pneumocystis carinii* pneumonia or other patterns) and normal chest radiographs were noted in nearly one-third of the patients with pulmonary TB. Acid-fast bacilli (AFB) were detected in sputum smears from thirty-two patients (64%). Ten patients (20%) had extra-pulmonary TB with the most common site being the lymph nodes. None were diagnosed with drug-resistant *Mycobacterium tuberculosis* (MDRTB). Six patients (12%) died due to late presentation and late diagnosis. Majority had good response to anti-tuberculosis drugs and a favourable outcome. All of them were commenced on antiretroviral therapy (ARV) before completion of their TB treatment.

## **Conclusion**

Early identification of TB in HIV-infected patients and timely ARV initiation especially in patients with advanced stages of RVD is vital to improve their outcome.

# PREDICTORS FOR SURVIVAL OF HIV POSITIVE ADULT TUBERCULOUS MENINGITIS PATIENTS IN PENINSULAR MALAYSIA

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## Introduction

HIV positivity in adult tuberculous meningitis patients causes low survival time.

## Objective

This study was performed to determine the survival and prognostic factors in HIV positive adult tuberculous meningitis patients in Peninsular Malaysia.

## Methods

The medical records of 54 HIV positive adult tuberculous meningitis patients treated or follow up in Hospital Kuala Lumpur (HKL), Hospital Pulau Pinang (HPP), Hospital Sultanah Aminah Johor Bahru (HSAJB) and Hospital Universiti Sains Malaysia (HUSM) from 1<sup>st</sup> January 2006 to 31<sup>st</sup> December 2012 were reviewed retrospectively. Data collected included socio-demographic, clinical and treatment characteristics of the patients. Survival time was determined with one year follow up period until 31<sup>st</sup> December 2013. Data entry and analysis were accomplished using Stata SE version 11.0. The Kaplan-Meier method was used to perform survival estimates while the log-rank test and the Cox proportional hazards regression model were employed to perform univariable and multivariable analysis.

## Results

Overall survival probability of HIV positive adult tuberculous meningitis was 27.7%, with median survival time 153 days. Significant predictive factors were GCS score (aHR 0.75, 95% CI 0.65, 0.86;  $p < 0.001$ ) and headache (aHR 0.33, 95% CI 0.13, 0.84;  $p = 0.021$ ). Use of steroids ( $p = 0.976$ ) and HAART treatment ( $p = 0.359$ ) were found not altered the survival among HIV positive adult tuberculous meningitis patients.

## Conclusion

Survival of HIV positive adult tuberculous meningitis in Peninsular Malaysia was lower than that for the normal population. Clinical suspicion of tuberculous meningitis among HIV positive patients is crucial to ensure early treatment and prevent mortality.

## TREATMENT OUTCOME OF PATIENTS WITH SMEAR-NEGATIVE PULMONARY TUBERCULOSIS IN HOSPITAL KULIM

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### ***Introduction***

Diagnosing sputum smear-negative pulmonary tuberculosis (PTB) remains a challenge to clinicians. The decision to treat as smear-negative PTB is subjective based on experience and confidence of treating clinicians. A vastly different treatment outcome can be observed. Induced sputum and bronchoscopic broncho-alveolar lavage (BAL) are shown to improve diagnostic yield in sputum smear-negative patients (McWilliams T 2003). A study of smear-negative PTB treatment outcome was done with hope to improve future service in Hospital Kulim.

### ***Objective***

This study aimed to determine treatment outcome of patients with smear-negative PTB. The secondary objectives were to determine the clinical characteristics of patients with smear-negative PTB, to identify the basis of diagnosis, and to assess the treatment and follow up of patients.

### ***Method***

This was a retrospective study involving 44 sputum smear-negative patients from Hospital Kulim from year 2011 to year 2013. Data collection was done by reviewing the patients' folders.

### ***Results***

All smear-negative PTB diagnosis was based on symptoms and chest radiograph findings. 20.4% had additional positive Mantoux test. Only one patient had bronchoscopy done. None of the patients had documented induced sputum performed. Of 44 patients, 68.1% completed treatment, 6.8% stopped treatment due to change of diagnosis, 9.1% defaulted, 13.6% died, and one patient was transferred to other centre. Of 6 patients who died, 4 were in high risk group with multiple co-morbidities. Of these, 3 patients were diabetic.

### ***Conclusion***

Hospital Kulim still has rooms for improvement in its diagnosis and care of patients with smear-negative PTB. Induced sputum and BAL are useful investigative ways to be considered.



## **A CROSS-SECTIONAL STUDY ON ENDOBRONCHIAL TB PATIENTS IN UMMC**

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### ***Objective***

Endobronchial tuberculosis (EBTB) is defined as a tuberculous infection of the tracheobronchial tree. In this cross-sectional study from 2005 to 2014, clinical, radiological, bronchoscopic findings and the outcome of patients diagnosed to have EBTB were evaluated.

### ***Methods***

30 patients diagnosed to have EBTB were included in our study. Age, sex, symptoms, signs, microbiological examination results, radiological and bronchoscopic findings as well as treatment outcomes were recorded.

### ***Results***

EBTB was found to be more common amongst females (24/30). The mean age of affected patients was  $33.8 \pm 13.3$  years old. Common presenting symptoms included cough (30/30), sputum production (19/30), fever (11/30), weight loss (11/30), wheezing (10/30) and dyspnea (9/30). Physical examination findings included reduced breath sounds (12/30), rhonchi (10/30), crepitations (7/30), body temperature  $> 37.5^{\circ}\text{C}$  (6/30) and stridor (4/30). Radiological findings included pulmonary infiltrates (12/30), lung collapse (10/30), consolidation (8/30) and cavitation (7/30). Sputum smear for acid-fast-bacilli was positive in 19 patients. Majority of the patients had a single endobronchial stenosis (21/30). The common sites involved were the left main bronchus (12/30), trachea (9/30), and right main bronchus (8/30). The duration of symptoms prior to presentation significantly correlated with multiple endobronchial stenosis ( $p=0.005$ ). 14 patients required dilatation of the stenosed area with six patients requiring diathermy to cut the surrounding strictures. Two patients required dilatation up to eight times. The success rate of treatment is lower if the stenosis is at the left main bronchus compared to other sites ( $p=0.009$ ). We found no correlation between the usage of steroids in predicting the outcome of treated patients ( $p=1.00$ ).

### ***Conclusions***

Stenosis at areas apart from the left main bronchus predicts a better outcome in treatment. Steroid usage may not be useful in the treatment of EBTB.

## **OCULAR TUBERCULOSIS: EXPERIENCE IN RESPIRATORY DEPARTMENT, HOSPITAL SULTANAH BAHIIYAH, ALOR SETAR, KEDAH**

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### ***Introduction***

Ocular tuberculosis can involve any part of the eye; typically it occurs after haematogenous spread from a primary focus. The diagnosis is challenging thus, presumptive clinical diagnosis is usually made.

### ***Methodology***

This is a case series of ocular tuberculosis treated in Chest department Hospital Sultanah Bahiyah. All patients diagnosed to have ocular tuberculosis by ophthalmologist and in whom a decision was made to start anti-tuberculosis treatment between January 2009 until December 2010 were analysed. The baseline data collection was done retrospectively and included data on the outcome of treatment for each of the patients. Data on clinical outcome of ocular tuberculosis patients was taken from information recorded on the last date they attended for follow up. Thus, limited data on long term follow up was retrieved since patients were unable to attend for long term follow-up for various reasons.

### ***Summary of Data***

13 patients were recruited through the course of 12 months, 6 are female and 7 are male. 92% of patients had blurring of vision. More patients were treated based on clinical judgment than NAAT testing (62% and 38% respectively, difference was statically was significant with p value of 0.001). In terms of treatment outcome there was no difference between the two groups as the p value was 0.83. In both groups, 77% of patient responded to treatment and 23% had static disease at the end of their treatment regimen. Majority of patients tolerated treatment well, less than 0.08% patients complained of rashes and hepatitis with p value of 0.982.

### ***Conclusion***

In conclusion diagnosis of ocular tuberculosis remains a challenge; high clinical index of suspicion is needed to diagnose ocular tuberculosis.

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# **THE ROLE OF PLEUROSCOPY IN UNDIAGNOSED EXUDATIVE PLEURAL EFFUSION: A MALAYSIAN TERTIARY HOSPITAL'S EXPERIENCE**

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## ***Introduction***

Pleuroscopy is a minimally invasive procedure to inspect the pleura and perform a biopsy of the pleural space as well as to perform therapeutic interventions.

## ***Objective***

The aim of this study was to determine the diagnostic yield of pleuroscopic findings and biopsies and to look at the association between pleuroscopic findings and their diagnoses, in a Malaysian Tertiary Hospital setting.

## ***Methodology***

Clinical data from Hundred and Forty Three patients who had undiagnosed exudative pleural effusion recruited for pleuroscopy in Hospital Selayang from January 2011 to December 2013 were reviewed.

## ***Results***

A total of 143 patients (98 males and 45 females, mean age 75 years) underwent pleuroscopy. Malignancy was diagnosed in 56 patients, tuberculosis was found in 69 patients, 10 patients had empyema, 3 patients had normal pleura, 2 patients had parapneumonic effusion and procedure was abandoned in 3 patients. The diagnostic yield was 39.2% for malignancy and 48.2% for Tuberculosis. The pleuroscopic findings were mainly described as multi-loculated effusion with adhesion in 27 patients, 'sago'-seed appearance in 21 patients, pleural mass in 4 patients, multiple pleural nodules in 59 patients, and diseased pleura in 12 patients. In patients with pleuroscopic findings of 'sago'-seed appearance, 85.7% patients were found to have smear/culture/biopsy positive of PTB. With multiloculated effusion and adhesion findings, 40.7% had culture/biopsy/smear positive PTB, 44.4% of patients had culture/biopsy/smear negative PTB with lymphocytes predominance in cytology, and 3.7% had malignancy.

## ***Conclusion***

Pleuroscopy is a minimally invasive and valuable tool in the diagnosis of undiagnosed exudative pleural effusion. Multi loculated effusions with adhesion and 'sago'-seed appearance on pleuroscopy is highly suggestive of Tuberculosis.

## PLEUROSCOPY: PENANG GENERAL HOSPITAL'S EXPERIENCE YEAR 2011 TO 2014

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### ***Introduction***

Pleuroscopy service was first started in Penang General Hospital (PGH) in May 2006. Flex-rigid pleuroscope is used during the procedure. It is an effective evaluation of pleural and pulmonary diseases in cases of moderate to massive pleural effusions. In exudative effusions of unclear aetiology, it replaces second-attempt thoracentesis and closed needle biopsy.

### ***Objective***

This study aimed to determine clinical characteristics of patients who underwent pleuroscopy in PGH. This study also looked into final diagnosis of the patients post pleuroscopy and assessed complications post pleuroscopy, including duration of chest tube after procedure.

### ***Method***

This was a retrospective study involving 142 patients from PGH year 2011 to March 2014. Data collection was done by reviewing the pleuroscopy record book, the pleuroscopy reports and the patients' folders.

### ***Results***

The median age of the patients was 59.5 years old, with the youngest 15 years old and the oldest 91 years old. 60.6% (86 patients) were male, 39.4% (56 patients) were female. Of 142 patients who underwent pleuroscopy, 97 patients' data were retrievable for outcome analysis. Of these, 45.3% had malignancy, 30.9% had pleural tuberculosis, 5.2% had empyema, 3.1% had parapneumonic effusion. 3 patients had surgical emphysema as immediate complication. 3 patients had infection post pleuroscopy. The median duration of chest tube was 3 days.

### ***Conclusion***

Pleuroscopy is generally a safe procedure in trained hands. It offers physicians the ability to intervene diagnostically and therapeutically in a minimally invasive way. To minimise complications, proper training in techniques and instrumentation is required.

## ULTRASONOGRAPHIC FEATURES OF EXUDATIVE PLEURAL EFFUSION IN SABAH

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### **Introduction**

Malignant and tuberculous pleural effusion remains the 2 most common differential diagnoses in Malaysia and specifically in Sabah. Ultrasound of thorax has an acceptable sensitivity and good specificity in predicting malignant and tuberculous effusion

### **Study Aim**

To assess the sensitivity and specificity of ultrasound in predicting malignant & tuberculous pleural effusion.

### **Method**

Retrospective data were collected for all Ultrasonographic (USG) features of patients aged more than 12 years old with chest radiograph and thoracocentesis evidence of exudative effusion prior to Abrams pleural biopsy or pleuroscopic biopsy were collected and were compared to subsequent histological diagnosis (n=42). Specific ultrasonographic features such as simple effusion, echogenicity, septations, loculations, fibrin, diaphragmatic & pleural nodules, parietal & visceral pleural thickening, diaphragmatic thickening, presence of hepatic metastasis, pleural mass or lung mass were done by Radiologist.

### **Results**

Histological diagnosis were malignant pleural effusion (n=9), tuberculous pleural effusion (n=15) and chronic inflammation/pleuritis due to parapneumonic effusion or non specific pleuritis (n=18). Statistical analysis were done to assess sensitivity, specificity and association of each USG features: Parietal pleura thickness and nodularity and diaphragm nodularity were specific but not sensitive for TB and malignancy. Ultrasound managed to avoid 13 planned thoracocentesis of suspected effusion on CXR.

### **Conclusion**

Sensitivity of Ultrasound thorax parameters for above diagnosis was poor despite good specificity of some of its features. Possible causes are small sample size and operator dependent nature of Ultrasonography of Thorax. Ultrasound Thorax is recommended prior to any pleural procedures or intervention.

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## **THORACIC LYMPHANGIOMATOSIS AS A RARE CAUSE OF PLEURAL EFFUSION: CASE SERIES OF THREE CHILDREN**

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Lymphangiomatosis is a proliferative disorder of the lymphatic system of unknown aetiology. There are limited pathological, radiological and clinical studies on this disease due to its rarity and the definitive diagnosis is often delayed. We report 3 children with thoracic lymphangiomatosis to illustrate the complexity, varied presentation and morbidity of this disease.

The first patient was a 6 year old boy with persistent haemorrhagic effusion who required mechanical ventilation and was initially treated for tuberculosis. The diagnosis of lymphangiomatosis was made histologically 2 weeks after presentation. He was treated with subcutaneous interferon alpha and vincristine but did not respond and succumbed to his illness.

The second patient was an 18 month old girl who presented with recurrent pleural effusion and was initially treated for a complicated empyema. Diagnosis was made histologically and right pleurectomy was done. She was given interferon gamma but the parents were not compliant to treatment. Nonetheless her disease has remained dormant for the past 3 years.

The third patient, a 5 year old boy, was initially diagnosed as a T-cell lymphoblastic lymphoma based on the pleural fluid immunophenotyping. As he did not respond to treatment, a video assisted thoracoscopic pleurectomy was done. He was treated with propranolol and sirolimus. Although he has persistent respiratory distress due to loss of right lung volume his disease is under control and there is no reaccumulation of the effusion. All 3 patients presented with respiratory distress due to massive and persistent chylous pleural effusion requiring prolonged chest drainage. Recognition and management of lymphangiomatosis are challenging and treatment options are limited.

## INTERSTITIAL LUNG DISEASE IN COW'S MILK PROTEIN ALLERGY

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Around 2 % - 4 % of children develop some kind of cow's milk protein allergy (CMA). Respiratory system involvement is uncommon and direct involvement of the lung parenchyma is a rare occurrence.

MZ, a 1 year 7 months old boy presented with multiple hospital admissions for severe respiratory problems and diarrheal illness since the age of 4 months. He developed a few episodes of severe respiratory distress, and recurrent episodes of severe dehydration due to excessive gastrointestinal loss. He had been introduced to cow based formula milk since 1 month old and had had mild eczematous rash ever since. He was failing to thrive with frequent episode of vomiting, diarrhoea and wheezing. He became oxygen dependent and started to have persistent alveolar infiltrate. His HRCT showed generalised ground glass appearances. Initial screening for inborn errors of metabolism, primary and acquired immunodeficiency revealed normal studies except for elevated IgE level (53.2 kU/L at 7 months old).

His milk was changed to soy based formula at the age of 7 months after which he showed some improvement but his symptoms did not resolve completely. He was then started on hydrolysed formula milk at 9 months old and made a marked recovery thereafter. His recurrent gastroenteritis ceased, hyperactive airway condition was controlled and weight began to catch up on the centile chart. The follow-up x-ray showed the persistent lung infiltrate has resolved.

He is recovering steadily at the moment with regular clinic follow up.

## A RARE CAUSE OF SECONDARY STRIDOR IN CHILDREN

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Relapsing polychondritis (RP) is a multisystemic rheumatic disease of unknown aetiology and it is characterised by inflammation of the cartilage. The inflammation usually involves the cartilage of the ears, nose, trachea, larynx, ribs, joints and Eustachian tubes. Relapsing polychondritis is rare in children and most of the reported cases are in Caucasian group of patients.

We report one Malaysian child who was diagnosed with RP at 4 years old when he presented with recurrent arthralgia and severe stridor. The child had severe respiratory distress that required intubation. Flexible bronchoscopy showed severe generalised tracheobronchomalacia. Biopsy of pinna showed necrosis of cartilage tissue consistent with chondritis. The patient required prolonged ventilation and was extubated with endotracheal tube in situ for a year. He was treated with prednisolone, azathioprine and subcutaneous methotrexate. The child slowly recovered and was discharged with CPAP during sleep.

In conclusion RP is a rare disease with multi-system presentation. Airway involvement of RP can be life threatening. Treatment with steroid and other cytotoxic drug gives a good result and can save the life of patient.

## **PROLONGED SECONDARY SPONTANEOUS PNEUMOTHORAX IN PAEDIATRIC PATIENTS: ARE THERE THERAPEUTIC ALTERNATIVES?**

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Secondary spontaneous pneumothorax occurs as a rare complication from an underlying pulmonary parenchymal disease in children. The condition typically warranted long periods of chest tube and a long stay in hospital with financial implications. This often results in management dilemma. Here we present a case series of patients with pneumothorax.

The first patient was a 4-year-old girl with necrotising pneumococcal pneumonia and empyema. She had fever for three weeks associated with cough and dyspnea. She developed worsening respiratory distress due to a spontaneous pneumothorax following 6 days of appropriate intravenous antibiotics. A chest tube was inserted and remained in-situ for 61 days due to a persistent bronchopleural fistula.

Our second patient was a 2-year-old boy with necrotising pneumonia and empyema. He was pyrexial for two weeks followed by cough for a week. Despite a week of oral antibiotics, he developed worsening respiratory distress due to a large right sided hydropneumothorax. A chest tube was inserted and remained for 21 days due to a persistent air leak.

Our third patient was a 9-year-old girl with smear positive pulmonary tuberculosis. Despite 4 months of anti-tuberculous treatment and good compliance, a surveillance chest radiograph showed a right apical pneumothorax. Interestingly she was asymptomatic and was initially managed conservatively. Subsequent chest radiograph showed a significant increase in the size of the pneumothorax and now she had mild respiratory distress. In view of the clinical changes, a chest tube was inserted. She too had a persistent air leak which resolved at day 22 with chest drainage.

We would like to highlight in our case series that all of these patients required a prolonged chest tube and hospitalisation due to persistent bronchopleural fistula. Surgical intervention such as video assisted thoracoscopy, may be considered as an alternative therapeutic intervention in paediatric patients with spontaneous pneumothorax (E.O'Lone, 2008).



# **PULMONARY MELIOIDOSIS IN KAPIT HOSPITAL, SARAWAK: A REPORT OF 5 CASES & REVIEW**

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## ***Introduction***

Melioidosis is a potentially fatal infection, caused by *Burkholderia Pseudomallei*. It is a disease that is predominantly seen in Thailand, Malaysia, Northern Australia and India. Pulmonary melioidosis eg., pneumonia is the most common clinical manifestation of melioidosis. Kapit district of Sarawak is an endemic hot spot for melioidosis.

## ***Objective***

The aim of this review is to describe the spectrum, in terms of presentation, severity and outcome of culture proven pulmonary melioidosis treated in Kapit District Hospital.

## ***Methodology***

Case notes of five cases of culture positive pulmonary melioidosis treated in Hospital were reviewed. The patient profile, potential risk factors, clinical features, investigation findings as well as eventual outcome were discussed in the form of case presentation.

## ***Results/Discussion***

All patients presented with symptoms such as fever, chills and rigors associated with productive cough for at least one week prior to seeking treatment. One particular patient presented with one week history of right knee joint effusion which was subsequently tapped and grew *B.Pseudomallei*. All the patients' CXR had patchy consolidative changes with varying pattern of infiltrates. All the patients' blood cultures grew *B.Pseudomallei*; two patients' sputum grew *B.Pseudomallei*. They presented with a spectrum of severity, ranging from respiratory distress needing intubation (n=3), septic shock requiring at least one inotrope (n=4), severe metabolic acidosis (n=2) and acute kidney injury needing dialysis (n=1). Three patients died despite escalation of treatment from ceftazidime to carbapenem and transfer to tertiary center with proper ICU care. Two patients completed standard treatment and were discharged well.

## ***Conclusion***

Pulmonary melioidosis can present with varying spectrum of severity. Poor prognostic factors includes respiratory failure, renal failure and metabolic acidosis. High suspicion in endemic area such as Kapit district is crucial in ensuring early treatment and preventing mortality.

## ***Reference***

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## **CASE SERIES OF MULTIDRUG-RESISTANT TUBERCULOSIS IN PERLIS FROM 2008 TO 2013**

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### ***Background***

Multidrug-resistant Tuberculosis (MDR-TB) and extensively drug-resistant (XDR-TB) increasingly occur worldwide and threatens global tuberculosis control efforts. Limited information about multidrug-resistant tuberculosis is available in Perlis.

### ***Objectives***

This case series was reported to evaluate the trend, types of drug resistance, side effects of the treatment and outcomes of patients with multidrug-resistant tuberculosis.

### ***Design***

Data was collected from registries of MDR-TB patients at the Chest Clinic Hospital Tuanku Fauziah from 2008 to 2013. Patients' files were analysed for epidemiology data, co-morbidities, side effects of treatment and the outcome towards treatment.

### ***Result***

Total reported MDR-TB cases from 2008 to 2013 were 3 males. Diabetes was the most common co-morbidity of MDR-TB cases. Resistance to Isoniazid and Rifampicin was present in all the patients. Joint pain and gastritis were the side effects of antiTB drugs. Outcome of treatment was 33.3 percent cured and 66.6 percent still undergoing treatment.

### ***Conclusions***

There is a rising trend of MDR-TB from 2008 to 2013. Diabetes are the most common co-morbidity in the patients with MDR-TB. Intervention to reduce default from MDR-TB treatment should centre on patient education and support and improving provider-patient relationships.

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## MILIARY BUT NOT TUBERCULOSIS (TB)

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### **Case 1**

A 47 year-old man presented with loss of weight and reduced effort tolerance. His chest radiograph showed lower zone reticulonodular infiltrates and CT thorax was reported as changes consistent with military PTB. Trial of anti-tuberculosis treatment was given for a month but there was no improvement of symptoms. A transbronchial lung biopsy revealed adenocarcinoma.

### **Case 2**

A 35 year-old man complained of non-productive cough for 2 months with constitutional symptoms. Conventional pleural biopsy showed non-caseating granulomatous inflammation. Anti-tuberculosis treatment was commenced but he deteriorated generally. His CT Thorax showed diffuse bilateral lung nodules. A transbronchial lung biopsy showed adenocarcinoma.

### **Case 3**

A 34 years old female presented with cough and constitutional symptoms for one month. Her chest radiograph showed miliary like pattern. She was started on anti-tuberculosis treatment for two months; however, she deteriorated. CT scan thorax showed diffuse reticulonodular opacities. The diagnostic bronchoalveolar lavage revealed non-small cell carcinoma.

### **Discussion**

Miliary TB may present as cryptic or overt disease<sup>1</sup>. It is a disease of children and has now changed to affect the elderly. Chest radiograph may identify up to 69% of miliary TB with high specificity. The characteristic CXR finding consists of diffuse and scattered nodular opacities 1 – 3 mm in diameter in both lungs<sup>2</sup>. If chest radiograph is not conclusive or normal, CT thorax plays a role to determine the disease activity and complications. A trial of antiTB treatment for a couple of weeks is one of the diagnostic tools for this disease.

### **Conclusion**

An early revision of diagnosis is required if anti-TB treatment failed to improve well-being of patients. Invasive imaging and bronchoscopic procedures are necessary to exclude other diagnoses.

### **References**

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## A TALE OF TWO PNET

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### **Introduction**

Primitive Neuroectodermal Tumor (PNET) is a malignant (cancerous) neural crest tumour. It arises from cells of neuroectodermal origin that affect soft tissue and bone. Classifying PNET is not only challenging but controversial.

### **Objective**

This retrospective study is meant to show the disease at presentation and its natural history, bearing in mind its known aggressiveness. We have had 2 cases in the first quarter of 2014, which displayed a great contrast.

### **Methodology**

Two cases were studied. The first patient, a 68 years old lady, presented with shortness of breath and growth at her anterior chest for two months, associated with constitutional symptoms. Contrast enhanced CT Thorax showed a large anterior chest wall tumour likely carcinoma with mediastinal involvement and extensive bony involvement. Trucut biopsy revealed PNET. She passed away before initiation of treatment due to late presentation with advanced stage of her disease.

The second patient was a 42 years old gentleman, with superior vena cava (SVC) obstruction. He had initially presented with diffuse neck swelling, cough, hoarseness of voice, dysphagia, facial puffiness, dyspnoea and constitutional symptoms. Contrast enhanced CT neck and thorax showed a mediastinal mass with superior vena cava obstruction and mediastinal lymphadenopathy; with impression of anterior mediastinal tumour causing SVC obstruction and tracheal narrowing. CT guided biopsy revealed PNET. He had a central venogram done, showing total occlusion of distal right subclavian, bilateral brachiocephalic vein and SVC with multiple collaterals. SVC stenting was not performed because the patient was unable to lie supine and because of inavailability of the stent. Patient is tolerating chemotherapy with vincristine, adriamycin and ifosfamide.

### **Conclusion**

Radiation and chemotherapy play an important role in treating PNET. Chemotherapy provided a better outcome for one of our patients. General condition remains a stumbling block prior to initiation of treatment. The first patient was not fit at presentation for treatment. Radiation has its drawbacks and Kuttesch et al reported that 20% of patient receiving radiation more than 60 Gy developed secondary malignancies, compared to 5% in those who received 48-60Gy. A case by case approach is vital in treating PNET.

## PRIMARY REPAIR OF LEFT MAIN BRONCHUS A CASE REPORT

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Main bronchus injury rarely needs to be repaired. We report a case of 17-year-old girl, involved in a motor vehicle accident who sustained cerebral concussion, chest injury and fracture of several transverse processes of vertebrae. A series of investigations revealed left pneumothorax with left main bronchus injury. Due to persistent left lung collapse, we proceeded with semi-emergency primary repair of left main bronchus via left thoracotomy.

## PULMONARY ACTINOMYCOSIS, A RARE PRESENTATION OF MILIARY PATTERN

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Pulmonary actinomycosis is a rare and difficult disease to diagnose. Pulmonary infection caused by actinomycosis is uncommon and it usually presents with craniofacial infection. The clinical manifestations and chest radiograph findings are usually non specific which frequently leads to misdiagnosis of pulmonary tuberculosis and malignancy.

We present a gentleman with chronic cough and constitutional symptoms. Chest radiograph showed multiples widespread small discrete lung parenchymal nodules in both lungs which appeared similar to those in miliary tuberculosis. Subsequently, patient was treated for miliary tuberculosis and started empirically on anti- tuberculosis drugs.

However, patient did not respond to anti-tuberculosis drugs and further investigations were carried out. Biopsy was taken from the lung and histopathological examination proved the diagnosis of pulmonary actinomycosis.

Patient was then treated with intravenous penicillin for two weeks and is currently on prolonged course of oral penicillin. On this treatment, the patient improved clinically and radiologically.

Diagnosis of pulmonary actinomycosis remains a challenge to medical professionals. Thus, differential diagnosis of pulmonary actinomycosis has to be considered miliary pattern is seen radiologically. If culture results are negative, lung biopsy is a valuable tool for making the diagnosis of pulmonary actinomycosis.

### Reference

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## **CASE REPORT: TUBERCULOSIS OF CERVIX: A SEXUALLY TRANSMITTED DISEASE?**

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Tuberculosis of cervix is a rare condition in Malaysia. The statistics of this condition is virtually unknown in this country.

This is a case of a 42 year old lady who presented with persistent intermenstrual bleeding and symptoms caused by anaemia. There were neither respiratory nor constitutional symptoms suggestive of active tuberculosis. However, from further history, patient had contact with tuberculosis patient as her husband had renal tuberculosis. Vaginal examination revealed per vaginal bleeding and colposcopy showed to polypoid endocervical tissue growth.

Punch biopsy was performed and histopathological examination revealed foci of epithelioid cell aggregations with Langhan's giant cells and caseous necrosis.

From the histopathology results, diagnosis of tuberculosis of cervix was made and patient was started on anti-tuberculosis drugs (two months of isoniazid, rifampicin, ethambutol and pyrazinamide followed by seven months of isoniazid and rifampicin). Patient responded well and the intermenstrual bleeding stopped after 3 weeks of treatment.

In this case the possibility of sexual transmitted disease is highly likely since patient had history of sexual intercourse with husband who had been treated with renal tuberculosis. There are a few papers in which described a possible mode of transmission when sputum is used as lubricant to facilitate sexual activity.

In summary, the diagnosis of tuberculosis of cervix is difficult as clinical symptoms and physical examination are not diagnostic and the condition is rare. The definitive diagnosis must be made from the histopathological examination and culture results.

### ***References***

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## POLYSEROSITIS DUE TO LEPTOSPIROSIS – A RARE CASE REPORT

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### **Background**

Leptospirosis is a common public health problem. It has various clinical manifestations, thus may be underdiagnosed. Our case is a very unusual case of a patient with rare manifestation.

### **Case**

We report a case of a 24 year old Malay male who presented with 2 weeks' duration of productive cough, pleuritic chest pain, and fever. He later developed septic shock, acute kidney injury, confusion, respiratory distress, and required intubation and mechanical ventilation. He had transaminitis, CXR showed bilateral pleural effusion, echocardiogram showed massive pericardial effusion which accounted for his pericardial tamponade. CT scan thorax showed presence of pericardial fluid, pleural effusion and ascites. Pleural fluid and pericardial fluid analysis was consistent with exudative effusion. All cultures yielded no growth. Atypical pneumonia screening, TB work-up, connective tissue disease screening, viral screening, and thyroid function tests were negative or normal. Leptospirosis Ig M and microscopic agglutination test (MAT) were strongly positive, with titre 1:800. He was initially treated with intravenous tazocin, intravenous meropenam, then de-escalated to penicillin V once MAT result came back positive. He showed marked improvement thereafter.

### **Conclusion**

This patient had an uncommon manifestation of leptospirosis, ie polyserositis. There is only 1 case of leptospirosis with polyserositis reported in Turkey. Early diagnosis has to be made. In this case, prompt and adequate antibiotic therapy and other supportive therapy (pericardial drainage and mechanical ventilation) were lifesaving.

## PULMONARY INFECTION WITH MICROSPORIDIA IN IMMUNOCOMPETENT PATIENT

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### **Introduction**

Microsporidiosis is considered as an opportunistic infection and infection in immunocompetent patients is rare. We report a case of pulmonary microsporidial infection in an immunocompetent patient.

### **Case Summary**

A 57 year-old Malay man with no past medical illness presented with history of chronic cough, loss of appetite and loss of weight for 3 months with increasing shortness of breath. He was treated as pneumonia and given a course of antibiotic but he developed type 1 respiratory failure with worsening opacities on the CXR. CT scan thorax was reported as showing bilateral perihilar consolidations with multiple small patchy consolidation and bilateral pleural effusion. Results of pleural biopsy and tap were inconclusive and bronchoscopy findings were normal but bronchial washing for culture came back as microsporidium species and he was started on T. Albendazole 400mg bd. Upon review in clinic after 1 month of treatment he was clinically and radiologically improved with no more cough and had gained 5kg.

### **Conclusion**

Microsporidiosis has becoming increasingly common in immunocompetent patients. It is commonly found in the gastrointestinal tract but few reports have identified the organism in respiratory samples.

### **Reference**

Sak B, Brady D, Pelikánová M, Květoňová, et al. Unapparent microsporidial infection among immunocompetent humans in Czech Republic. *J Clin Microbiol.* 2011;49:1064-70.

## MATURE TERATOMA WITH PULMONARY INVASION PRESENTING WITH TRICHOPTYSIS: A CASE REPORT

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Mature teratoma is the most common primary germ cell tumor in the mediastinum. Invasion of pulmonary structure by benign tumor is rarely seen. We report a case of a 27-year-old Malay gentleman, with an anterior mediastinal teratoma who presented with trichoptysis. This teratoma was located superior to the aorta and right ventricle, and was compressing the pulmonary artery. The tumour infiltrated the upper lobe of the left lung which created a fistula to the left upper lobe branches. We performed a complete resection of the tumour and left upper lobectomy.

## A CASE OF BRONCHESOPHAGEAL FISTULA DUE TO MELIOIDOSIS TREATED WITH AIRWAY STENT

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### Introduction

Melioidosis, an infection due to *Burkholderia Pseudomallei* is endemic in Sarawak.

### Aim

To describe a case of melioidosis presenting with bronchoesophageal fistula treated with both esophageal and airway stents.

### Method

A 44-year-old man was referred from a district hospital for cough and fever for 3 months. His symptoms did not improve with antibiotics and empirical anti-tuberculous treatment. He underwent several investigations, which include Computer Tomography of the chest, bronchoscopy, oesophagogastroendoscopy (OGDS) and EBUS TBNA. However all these investigations did not reveal a definite diagnosis. He developed a large bronchoesophageal fistula resulting in aspiration pneumonia, mediastinitis, septic shock and acute kidney injury. Broncho-alveolar lavage culture grew *Burkholderia Pseudomallei*. His condition stabilised after appropriate antibiotics, oesophageal and airway stenting. The patient is planned for surgical closure of the bronchoesophageal fistula once he is able to tolerate the procedure.

### Conclusion

Airway stent can be useful for initial stabilisation of patient with bronchoesophageal fistula.

# BRONCHOSCOPIC LUNG VOLUME REDUCTION USING ENDOBRONCHIAL VALVE (PULMONYX) IN SEVERE CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENT: A CASE REPORT

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## Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a major cause of morbidity and mortality worldwide and in Malaysia. Emphysema is a component of COPD characterised by alveolar destruction, leading to impaired gas exchange and loss of elastic recoil with resultant air trapping, hyperinflation and impaired breathing mechanics. Bronchoscopic lung volume reduction (BLVR) using one-way valves to induce atelectasis of the hyperinflated lung has the potential for improvement in exercise capacity and improvement in lung function. We report a recent case of severe COPD which was treated with endobronchial Zephyr (*Pulmonaryx*) valve and his progress post operatively.

## Case Presentation

A 57 year old Chinese gentleman, an ex smoker of 30 pack years, was diagnosed as COPD Group D and was on maximal medical therapy with repeated exacerbations. Further tests revealed upper lobe emphysema on HRCT Thorax, severe obstructive airways disease and air trapping on lung function and impaired exercise capacity in 6MWT. He was referred for Endobronchial Valve (EBV) to Hospital Serdang. Four EBV was inserted in the left upper lobe (LUL) and post procedure, he developed pneumothorax, which resolved with conservative management after 6 days. Serial follow up at month 1, 2, and 5 revealed marked improvement in FEV1, improved dyspnoea score, improved exercise tolerance and clinical benefit with atelectasis of LUL and patient remained free from exacerbations.

## Conclusion

In summary, EBV referral in severe COPD with maximal medical therapy is an exciting option for a selected subgroup of patients who will derive clinical benefit in terms of improved dyspnoea score, improved FEV1 and better exercise capacity with an acceptable complication rate.

## CASE SERIES OF SLEEP DISORDERS WITH PARKINSON'S DISEASE

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### ***Introduction***

Altered sleep is among the most frequent non-motor symptoms in parkinsonism. As many as 15-59% patients with Parkinson's disease suffer from rapid eye movement sleep behaviour and 30% from excessive daytime sleepiness.

### ***Patients and Methods***

Two cases of rapid eye movement sleep behaviour and one case of hypersomnia secondary to Parkinson's disease were diagnosed from July 2013 until March 2014 and reviewed retrospectively.

### ***Results***

All three patients were males. The mean age for the patients with REM behaviour disorder was 55 years (53-57 years old). Both patients had EEG features of REM sleep without atonia. They responded well to clonazepam. The patient with hypersomnia secondary to Parkinson's disease remained symptomatic with excessive sleepiness despite optimal CPAP treatment for his obstructive sleep apnoea with an ESS score of 20/24. He improved after being treated for his newly recognised long standing Parkinson's disease and treatment with modafinil.

### ***Conclusion***

It is of paramount importance that the clinician obtains a detail history about sleep problems in patients with Parkinson's disease. Specific interventions can improve the quality of sleep.

# CUTANEOUS VASCULITIC RASH AS AN INITIAL PRESENTATION OF MALIGNANT PLEURAL MESOTHELIOMA: A CASE REPORT FROM TERTIARY HOSPITAL IN SELANGOR, MALAYSIA

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## Introduction

Malignant Mesothelioma is an aggressive tumour and more than 90% of reported cases occur in the pleura. Paraneoplastic syndromes occur in 10-15% of malignancy and could be the first or most prominent manifestation. A spectrum of paraneoplastic syndromes is associated with pleural mesothelioma and leukocytoclastic vasculitis is one of them

## Methods

We report a case of a 53 years old man who presented to our hospital with an erythematous, non-pruritus, non-painful ecchymotic rash involving his left abdomen and flank for which he had previously sought treatment from his general practitioner. He worked as a plumber and was a smoker with a 40 pack year history. He had been losing weight and appetite for 3 months prior to the onset of the rash. Clinical examination revealed no clubbing, no palpable lymphadenopathy and clinically he had pleural effusion. Abdominal examination revealed a large ecchymosis with no stigmata of chronic liver disease and no tenderness. Relevant investigations showed left pleural effusion on Chest Xray, no coagulopathy, normal serum amylase, abdominal ultrasound showed no features of pancreatitis with no evidence of retroperitoneal hemorrhage and CT scan showed pleural based mass. Biopsy of the skin revealed leukocytoclastic vasculitis and biopsy of the pleural mass showed malignant mesothelioma. He was then referred to Oncology Department, Hospital Lumpur for treatment.

## Conclusions

Skin manifestations could be the initial presentation of neoplastic diseases in 1% of patients although it is more common in hematological than the solid malignancies. Hence physicians should remain vigilant to the association of leukocytoclastic vasculitis with malignancies.



## BILATERAL PNEUMOTHORACES IN A PATIENT WITH CYSTIC LUNG DISEASE

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### ***Introduction***

Cystic lung diseases are uncommon and represent a diagnostic and therapeutic challenge. We report a case of probable sporadic lymphangioleiomyomatosis (LAM) in a young non-smoker lady who presented with recurrent pneumothorax.

### ***Case Report***

A 41-year-old nulliparous Sri Lankan lady presented with spontaneous bilateral pneumothorax. She had history of right chest tube insertion two years ago while she was in Sri Lanka. On physical examination, she had a thin build, was not cachexic, and had no syndromic features. Her hospital stay was eventful in which she was intubated for acute respiratory distress. High resolution computed tomography (HRCT) showed numerous diffuse thin wall cysts of various sizes bilaterally surrounded by normal lung parenchyma. Histopathological examination (HPE) obtained through cryobiopsy of the lung was non-specific and showed moderate lymphocytic infiltration and focal emphysematous changes with dilatation of alveolar spaces. Further imaging looking for renal angiomyolipoma and repeat lung biopsy to confirm LAM were not done in view of her financial limitations. In the ward, she developed ventilator associated pneumonia. She responded to antibiotics and subsequently talc pleurodesis was done. The left lung successfully expanded while the right lung showed residual pneumothorax. After consultation with cardiothoracic and respiratory teams, surgical pleurodesis was not offered in view of diffuse cystic lesions. Patient was asymptomatic throughout and discharged well.

In conclusion, LAM should be considered as a differential diagnosis in a young lady with recurrent pneumothorax. Further evaluation with HRCT with/out biopsy is needed to confirm the diagnosis.

## EVENTRATION OF THE RIGHT HEMIDIAPHRAGM MIMICKING A LUNG MASS

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### **Introduction**

Eventration of the diaphragm is caused by weakened musculature of the diaphragm. This can occur in one or both hemidiaphragms. Symptoms may be minimal and it is usually detected incidentally on chest radiograph which would show an elevation of the diaphragm. Our patient presented atypically with a well-rounded lung mass on chest radiograph.

### **Case Report**

A 65-year-old man, ex-chronic smoker, presented with a 1 month history of cough following a trip to Mecca. He had no constitutional symptoms, no fever and no haemoptysis. His cough had gradually improved without any medication. He was found to have a rounded mass with smooth margin above the right diaphragm on chest radiograph. He was referred to the respiratory unit for further investigation. In view of his age and significant smoking history, we proceeded with a computer tomography (CT) of the thorax with a view for biopsy of the lung mass. Our findings were an elevation of the anteromedial aspect of the right hemidiaphragm with herniation of the liver. We then went on to review his older chest radiographs which revealed a mildly elevated right hemidiaphragm 4 years prior to this presentation. This case illustrates the need to be aware of diaphragmatic herniation of the liver as a cause of rounded lung mass.

### **Conclusion**

We should consider eventration of the diaphragm as a differential diagnosis of a rounded opacity in the right lower zone. Reviewing serial chest radiographs in the past may be helpful. A CT scan thorax would confirm the diagnosis.

## DIFFICULT TO DIAGNOSE TUBERCULOSIS

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### ***Introduction***

Tuberculosis is an ancient disease and great mimicker. Diagnosis of extrapulmonary tuberculosis is always a challenge to a young physician who lacks experience in managing tuberculosis. A new National tuberculosis guideline in parallel with WHO guideline agrees that the diagnosis made should be supported by laboratory evidence of tuberculosis. Management of the side effects of anti-tuberculosis medication also should not simply be stopping the treatment.

We present a case of a 62 year old Malay lady with a background of hypertension who presented with low backache and lower limb weakness, urinary incontinence and constitutional symptoms. She was investigated at a private hospital for spinal cord compression which was confirmed on MRI spine at the level of L4 and L5. At the same time there was multiple lung nodules bilaterally. On further questioning she denied tuberculosis contact and had no respiratory symptoms. Clinically

there was lower limb lower motor neuron weakness with power grade 4/5. There was no

lymphadenopathy. Lungs were clear. Other systems were unremarkable. She was referred to our centre for further investigation of multiple pulmonary nodules.

### ***Conclusion***

The diagnosis based on clinical and radiological judgment must be supported with histopathology and culture for mycobacteria to help to firmly establish the diagnosis.

## NOT ALL WHEEZE IS ASTHMA: A CASE REPORT

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Wheezing is a common respiratory manifestation among adults. It can be either due to bronchoconstriction or airflow limitation. The commonest causes of wheeze are bronchial asthma and chronic obstructive airway disease. There is also a variety of conditions which can causes wheeze such as tracheal stenosis, mediastinal mass, carcinoid tumours, cardiac asthma etc.

We report a case of a 41 year old lady, who was referred to us for poorly controlled bronchial asthma. She had chronic cough and wheeze for 6 months. Her clinical examination showed localised rhonchi at right middle zone. Chest imaging showed a heterogenous haziness at right lower zone, with CT thorax showed an ill-defined lobulated soft tissue mass within the apical segment of right lower lobe, and collapse consolidation in the medial segment of right middle lobe. The subsequent bronchoscopy showed stenosed right main bronchus, which correlated with our clinical findings. The endobronchial biopsy result came back to be adenocarcinoma.

Patients with bronchial carcinoma can present with wheezing, therefore other differential diagnosss of wheeze should be taken into account if a patient does not respond to the conventional treatment of bronchial asthma.

## **EXTENSIVELY DRUG-RESISTANT (XDR) MYCOBACTERIUM TUBERCULOSIS: FIRST UNEXPECTED CASE IN THE EAST COAST OF MALAYSIA**

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### **Background**

Extensively drug resistant Tuberculosis (XDR-TB) and Multi-drug resistant Tuberculosis (MDR-TB) have emerged as major global threats, causing morbidity and high mortality, and generating very diverse actions among members of the public, scientific leaders, clinicians and public health personnel. This problem has arisen because of weaknesses in TB control programme management.

### **Objective**

This reports the first case of extensively drug resistant *Mycobacterium tuberculosis* isolated from a patient at Hospital Raja Perempuan Zainab II Kota Bharu, Kelantan, East Coast of Malaysia.

### **Results**

A 47 year old Chinese female patient, who had diabetes Mellitus type 2 with no previous history of TB treatment and no history of contact with TB patients was diagnosed as suffering from PTB and developed MDR-TB. It was related to inadequate therapy, poor regimen, and side effects of the medication, poorly uncontrolled diabetes, history of frequent travelling and poor compliance. Inadequate dosage of drugs and side-effects of MDR-TB medication resulted in MDR-TB treatment failure and the development of XDR-TB. The patient has been treated with various drugs regimens, because of side-effects of medication. Currently patient is on moxifloxacin, para-amino salicylic acid (PAS), clofazimine, high dosage of Isoniazid and Vitamin C. The patient has improved well and responded to the treatment.

### **Conclusions**

MDR-TB and XDR-TB were man-made diseases. The contributing factors included inadequate regimen, poor therapy, poor management, poor compliance and the side-effects of anti-TB drugs. Treatment of XDR-TB is even more difficult than MDR-TB, because of long duration of treatment course, high burden of drugs and toxicity, although some patients still respond to the treatment. The commitment of both doctors and patients is highly crucial for the success of treatment.

### **Keywords**

Case report, Tuberculosis, XDR-TB and MDR-TB, Isoniazid, Rifampicin, Peninsular Malaysia

## **SYNOVIAL SARCOMA IN AN ADOLESCENT WITH UNILATERAL PLEURAL EFFUSION**

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Synovial sarcomas are rare soft tissue tumours that usually occur in adolescents and typically involve extremities in the vicinity of the large joints. However, the pleura is an uncommon site of tumour spread and involvement, making recognition difficult and thus complicating its subsequent management. This case report highlights the atypical presentation in an adolescent female who presented with a massive left sided exudative pleural effusion. A diagnostic pleuroscopy was performed in which a specimen of the parietal pleura was obtained and showed metastatic monophasic synovial sarcoma of the pleura on histopathological examination. This tumour is a rare entity resulting in diagnostic difficulty and relatively scarce information about the management and overall prognosis. To date, only 36 cases have been reported worldwide with the first case being reported in 1996. The best standard care of practice and management still remains unclear as there is paucity of data regarding its natural history and limited number of reported cases. Overall, the management of synovial sarcoma is one of a multidisciplinary approach consisting of a combination of surgery, chemotherapy and radiotherapy.



## REEXPANSION PULMONARY OEDEMA – A MYTH?

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### **Introduction**

Reexpansion Pulmonary Oedema (RPE) is a rare but life-threatening complication of thoracostomy with mortality of 20%

### **Methods**

Case report

### **Summary**

A 64 year old male was transferred in with worsening dyspnoea for 2 days associated with history of 2 weeks cough of whitish sputum. He was recently diagnosed as suffering from COPD and had a history of gut tuberculosis diagnosed via laparotomy in 2008 . He had been a smoker (50 pack years), was a teetotaler and denied other high risk behaviour. He was initially treated as acute exacerbation of COPD due to CAP. Review of the Chest x-ray done on admission revealed missed right pneumothorax and ICT was inserted immediately with good function. Dyspnoea and tachypnoea improved and repeat chest x-ray showed expansion of lung.

5 hours later he developed sudden severe dyspnoea, became restless and arterial blood gas analysis showed type 2 respiratory failure. He required intubation and ventilation. There was copious secretion from ETT with 500 cc of frothy pinkish coloured fluid aspirated and ICT drained haemorrhagic fluid. Post intubation chest x-ray ipsilateral pulmonary oedema. Blood pressure, ECG and blood investigations were within acceptable range. Patient was extubated uneventfully after 24 hours of ventilation in ICU .

### **Conclusion**

RPE is uncommon complication of thoracostomy, with rapid deterioration frequently requiring ventilatory support. Preservation of life is possible if prompt action is taken.

## **TUBERCULOUS CONSTRICTIVE PERICARDITIS: CASE REPORT**

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Tuberculosis has been increasing in incidence in recent years especially in developing countries. Tuberculous pericarditis is a form of extrapulmonary tuberculosis that is considered unusual. Diagnosis is often challenging. High index of suspicion combined with the use of all available diagnostic techniques are important to increase diagnostic yield.

A definite or proven diagnosis is based on demonstration of tubercle bacilli in pericardial fluid or on histologic section of the pericardium. Constrictive pericarditis is a complication of tuberculous pericarditis that necessitates surgical intervention. The timing of surgical intervention is controversial, but many experts recommend a trial of medical therapy for non-calcific pericardial constriction, and pericardiectomy in non-responders after 4 to 8 weeks of anti-tuberculosis chemotherapy.

Pericardiectomy is a surgical option which carries high mortality and morbidity. We report a case of tuberculosis of pericardium complicated with constrictive pericarditis and the surgical challenges both intraoperative and post operatively.

## **A CASE OF A DISSEMINATED MIXED MYCOBACTERIUM FORTUITUM, ABSCESSUS, AND INTRACELLULARE INFECTION WITH FAILED THERAPY**

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The presence of a disseminated mixed atypical mycobacterial infection in a non-HIV patient is not only rare but provides diagnostic and management difficulties. We describe a non-HIV patient who was initially treated for what was thought to be simple tuberculous lymphadenitis. As more investigations ensued, a disseminated atypical mycobacterial infection was diagnosed; and surprisingly different species were isolated from different sites. When a resistant *M. abscessus* was isolated from his skin ulcer, it was clear that his disease would be almost incurable. It was clear he required long term follow-up with a shift towards non-drug management.

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