PROGRAMME & ABSTRACT BOOK

MALAYSIAN THORACIC SOCIETY ANNUAL CONGRESS 2023

24th – 27th August 2023

NEXUS, CONNEXION CONFERENCE & EVENT CENTRE (CCEC), BANGSAR SOUTH CITY KUALA LUMPUR

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MALAYSIAN THORACIC SOCIETY OFFICE BEARERS

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VICE-PRESIDENT	Assoc Prof Dr Ahmad Izuanuddin Ismail
HON SECRETARY	Dr Hooi Lai Ngoh
HON TREASURER	Dr Jessie Anne De Bruyne
HON ASSISTANT SECRETARY	Dr Lalitha Pereirasamy
HON ASSISTANT TREASURER	Dr Su Siew Choo
COMMITTEE MEMBERS	Dr Asiah Kassim Dr Noor Ain Noor Affendi Dr Tan Jiunn Liang Dr Nurul Yaqeen Mohd Esa
CO-OPTED COMMITTEE MEMBER	Dr Roslina A Manap (Immediate Past President)
HONORARY AUDITORS	Emeritus Prof Dr Liam Chong Kin Assoc Prof Dato' Dr Ahmad Fadzil Abdullah

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ORGANISING CHAIRPERSON	Dr Asiah Kassim
SCIENTIFIC COMMITTEE	Dr Noor Ain Noor Affendi Assoc Prof Dr Eg kah Peng Dr Alison Ting Yih Hua Dr Hafizah Zainuddin Assoc Prof Dr Ahmad Izuanuddin Ismail Assoc Prof Dr Chai Chee Shee Dr Nurul Yaqeen Mohd Esa Dr Syazatul Syakirin Sirol Aflah Dr Arvindran Alaga Dr Aisya Natasya Musa Dr Azlina Samsuddin
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IT & INTERNET	Dr Ng Boon Hau Mr Hilmi Abdullah
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MTS CONGRESS SECRETARIAT	Ms Zuha Radzi Ms Ayu Jazmina Jasmani

WELCOME ADDRESS FROM PRESIDENT OF MALAYSIAN THORACIC SOCIETY

Greetings from MTS 2023 Congress.

On behalf of the society, I am delighted to welcome you to the congress that will take place at Nexus, Connexion Conference & Event Centre (CCEC), Kuala Lumpur, from 24th to 27th August 2023.

We are thrilled to have you joining us in this exciting event, where we will discuss the latest advances and challenges in the field of respiratory health and diseases. The scientific committee have prepared a rich and diverse programme featuring plenaries, symposia, interactive case discussions, quizzes, workshops, oral/poster sessions and many more.

Based on popular requests, we have prepared several workshops to provide hands-on experience and interactive learning to participants in thoracic imaging, inhaler techniques, as well as respiratory support for paediatric patients with acute respiratory failure.

I believe the congress is a valuable opportunity to connect with fellow experts, researchers and colleagues from across the globe. I hope you will find this conference enlightening, engaging and rewarding; and that you will make the most of your time while you are here.

Thank you for your participation and contribution to this scientific community. I wish you a wonderful conference experience!

With warmest regards,

Associate Professor Dr Pang Yong Kek
President
Malaysian Thoracic Society

WELCOME ADDRESS FROM ORGANISING CHAIRPERSON

It is my great pleasure and honour to welcome everyone to the Malaysian Thoracic Society; MTS 2023 Annual Congress. Three years after the announcement of the COVID-19 pandemic in Malaysia, we continue to face challenges in our life and work. The pandemic taught us the importance of teamwork at all levels and professions. We also learned new ways as alternatives to continue knowledge and experience sharing among us. The number of research projects increased during the pandemic, and some changed our clinical practice and we also adapted to the "new norms". We learned to communicate on virtual platforms. Partnerships with technology companies become a new trend as well as innovation to bring science into clinical practice.

With this conference, we want to learn from each other, be aware of innovative ideas and experiences, provide better care for our patients, and take care of ourselves too. MTS 2023 Annual Congress will cover workshops and skills on ventilation, inhaler technique, and thoracic imaging. There will be multiple plenaries and symposium lectures on vast topics such as respiratory infection e.g., Tuberculosis, sleep breathing disorder, non-invasive ventilation, pleural disease, chronic respiratory diseases e.g. COPD, Asthma, Bronchiectasis, Bronchiolitis obliterans, acute critical respiratory care, lung cancer, lung transplant, and many other interesting sessions.

Looking forward to participation from all categories in the forthcoming MTS 2023 Annual Congress, to be held in Nexus, Connexion Convention and Event Centre, Kuala Lumpur from 24th to 27th August 2023

Dr Asiah Kassim
Organising Chairperson
MTS 2023 Annual Congress

PROGRAMME SUMMARY

Day 1: Thursday, 24th August 2023	
Time	**Programme**
	CONGRESS WORKSHOP (Includes Lunch)
0800 - 1230	**Workshop 1**
	Thoracic Imaging
0800 - 1230	**Workshop 2**
	Inhalers and Devices
0800 - 1230	**Workshop 3**
	Respiratory Support for Paediatric Acute Respiratory Failure
1230 - 1330	**LUNCH**
1330 - 1700	**Workshop 1**
	Thoracic Imaging
1330 - 1700	**Workshop 2**
	Inhalers and Devices
1330 - 1700	**Workshop 3**
	Respiratory Support for Paediatric Acute Respiratory Failure
1700 - 1730	**COFFEE BREAK**
1730 - 1815	**SPONSORED SYMPOSIUM 1A (Roche)**
	SPONSORED SYMPOSIUM 1B (AstraZeneca)
1815 - 1900	**SPONSORED SYMPOSIUM 1C (AeroChamber)**
1900	**DINNER**

Day 2: Friday, 25th August 2023	
Time	**Programme**
0700 – 0800	**REGISTRATION**
0800 – 0810	**WELCOME ADDRESS**
0810 – 0850	**PLENARY 1** **Reforming Healthcare Services**
0850 – 1005	**SYMPOSIUM 1**
	S1A – Tuberculosis & Nontuberculous Mycobacteria
	S1B – Pleural Diseases
	S1C – Chronic Respiratory Disease
1005 – 1035	**COFFEE BREAK**
1035 – 1150	**SYMPOSIUM 2**
	S2A - Interventional Pulmonology
	S2B – Sleep Disordered Breathing
	S2C – Lower Respiratory Tract Infection
1150 – 1240	**SPONSORED SYMPOSIUM 2A (AstraZeneca)**
	SPONSORED SYMPOSIUM 2B (Sanofi)
1240 – 1430	**LUNCH**
1430 – 1600	**SYMPOSIUM 3**
	S3A – Oral Presentation
	S3B – Meet the Expert I
	S3C – Pre-school Wheeze and Asthma
1600 – 1650	**SPONSORED SYMPOSIUM 3A (AstraZeneca)**
	SPONSORED SYMPOSIUM 3B (Bristol-Myers Squibb)
1650 - 1740	**SPONSORED SYMPOSIUM 4 (Boehringer Ingelheim)**
1740 – 1935	**MTS ANNUAL GENERAL MEETING & COFFEE BREAK**
1935 – 2200	**DINNER**

Day 3: Saturday, 26th August 2023	
Time	**Programme**
0800 – 0840	**PLENARY 2**
0840 – 1010	**SYMPOSIUM 4**
	S4A – Interstitial Lung Disease
	S4B – Lung Cancer
	S4C – Paediatric Airway Disease
1010 – 1040	**COFFEE BREAK**
1040 – 1210	**SYMPOSIUM 5**
	S5A – Airway Disease
	S5B – Critical Care
	S5C – Home Non-Invasive Ventilation
1210 – 1300	**SPONSORED SYMPOSIUM 5 (GlaxoSmithKline)**
1300 – 1400	**LUNCH**
1400 - 1500	**SYMPOSIUM 6**
	S6A – Thematic Oral Presentation
	S6B – Thematic Oral Presentation
	S6C – Thematic Oral Presentation
	S6D – Case Report Poster Presentation
1500 - 1550	**SPONSORED SYMPOSIUM 6A (AstraZeneca)**
	SPONSORED SYMPOSIUM 6B (A. Menarini)
1550 - 1640	**SPONSORED SYMPOSIUM 7 (AstraZeneca)**
1640 - 1700	**COFFEE BREAK**
1930 – 2230	**GALA DINNER**

Day 4: Sunday, 27th August 2023	
Time	**Programme**
0800 – 0840	**PLENARY 3** **Roadmap for Transplant Forum**
0840 - 1010	**SYMPOSIUM 7**
	S7A – Meet the Expert II
	S7B – Advances in Respiratory Medicine
	S7C – Medley
1010 - 1040	**COFFEE BREAK**
1040 - 1130	**SPONSORED SYMPOSIUM 8 (A. Menarini)**
1130 - 1230	**SYMPOSIUM 8**
	S8A – Lungs on Fire
	S8B – Respiratory Jeopardy
	S8C - Multi Disciplinary Case Discussion - Paediatrics
1230 - 1320	**S9 - Quiz**
1320 - 1330	**CLOSING CEREMONY**
1330 - 1430	**LUNCH**

CONGRESS WORKSHOP

THORACIC IMAGING

Thursday, 24th August 2023

TIME	TOPIC	SPEAKER	VENUE
Chairpersons: Zuhanis Abdul Hamid/Noor Emillia Illa			
0800 – 0830	**REGISTRATION**		Auditorium Foyer
0830 - 0900	Making sense of CXR	*Roqiah Fatmawati Abdul Kadir, Malaysia*	Spectrum, Level 3A
0900 – 0930	Looking for treasure in CT thorax	*Wan Aireene Wan Ahmed, Malaysia*	
0930 - 1000	MRI thorax: Image wisely	*Bushra Johari, Malaysia*	
1000 – 1030	**COFFEE BREAK**		Breakout Room Foyer
Chairpersons: Bushra Johari/Siti Rohani Mohd Yakop			
1030 - 1100	Imaging in lung cancer: Can we tell them apart	*Aida Abdul Aziz, Malaysia*	Spectrum, Level 3A
1100 – 1130	Lung cancer: T descriptor: Beyond numbers	*Nor Zuliana Dzul-kifli, Malaysia*	
1130 – 1200	Lung cancer: Mediastinal staging and N descriptor	*Noor Emillia Illa, Malaysia*	
1200 - 1230	Lung cancer: Post therapy tumor response	*Zuhanis Abdul Hamid, Malaysia*	
1230 - 1330	**LUNCH**		The Oak Room, Level 3
Chairpersons: Aida Abdul Aziz/Roqiah Fatmawati Abdul Kadir			
1400 - 1430	Imaging in airway disease	*Sujal Desai, United Kingdom*	Spectrum, Level 3A
1430 - 1500	Imaging in COPD: How we may help clinicians	*Siti Rohani Mohd Yakop, Malaysia*	
1500 - 1530	BAE: When and how	*Ch'ng Li Shyan, Malaysia*	
Chairpersons: Fatimatulzahra Abdul Ghani/Wan Aireene Wan Ahmed/Siti Rohani Mohd Yakop			
1530 - 1700	Lungs on FIRE	*Abdul Samad Sakijan, Malaysia*	Spectrum, Level 3A
1700	**COFFEE BREAK**		Breakout Room, Foyer

CONGRESS WORKSHOP

INHALERS AND DEVICES

Thursday, 24th August 2023

TIME	TOPIC	SPEAKER	VENUE
Chairpersons: Jaya Muneswarao Ramadoo/ Chong Li Yin			
0800 – 0820	**REGISTRATION**		Auditorium Foyer
0820 - 0830	**Welcome Remarks**		Prism, Level 3A
0830 - 0900	Inhaler errors: The impact on asthma & COPD	*Arvindran Alaga, Malaysia*	Prism, Level 3A
0900 – 0930	Adherence to inhalers: Have we done enough?	*Bandana Saini, Australia*	
0930 - 1000	Understanding pMDI's and spacers/VHC	*Chong Li Yin, Malaysia*	
1000 – 1030	**COFFEE BREAK**		Breakout Room Foyer
1030 - 1100	Bringing the best out of DPI's	*Jaya Muneswarao Ramadoo, Malaysia*	Prism, Level 3A
1100 – 1130	Deep diving into SMI/Respimat	*Pang Yong Kek, Malaysia*	
1130 – 1200	Choosing the right inhaler for the right patient	*Toby Capstick, United Kingdom*	
1200 - 1230	Inhaler education: The strategies that Work	*Bandana Saini, Australia*	
1230 - 1330	**LUNCH**		The Oak Room, Level 3
1330 - 1645	Hands-on Session – Station 1: pMDI	*Chong Li Yin, Malaysia*	Prism, Level 3A
	Hands-on Session – Station 2: Spacers/VHC's	*Chong Li Yin, Malaysia*	
	Hands-on Session – Station 3: DPI's	*Jaya Muneswarao Ramadoo, Malaysia*	
	Hands-on Session – Station 4: SMI/Respimat	*Arvindran Alaga, Malaysia*	
	Hands-on Session – Station 5: Inhalation flow assessment	*Jaya Muneswarao Ramadoo, Malaysia*	
1645 - 1700	**CLOSING**		
1700	**COFFEE BREAK**		Breakout Room, Foyer

CONGRESS WORKSHOP

RESPIRATORY SUPPORT FOR PAEDIATRIC ACUTE RESPIRATORY FAILURE

Thursday, 24th August 2023

TIME	TOPIC	SPEAKER	VENUE
Chairperson: Hafizah Zainuddin			
0800 – 0820	**REGISTRATION**		Auditorium Foyer
0820 - 0830	**WELCOME REMARKS**	*Noor Ain Noor Affendi, Malaysia*	Continuum, Level 3A
0830 - 0900	Approach to paediatric acute respiratory distress	*Yap Hsiao Ling, Malaysia*	Continuum, Level 3A
0900 – 0930	Updates and strategy in the usage on HFNC oxygen in children	*Anis Siham Zainal Abidin, Malaysia*	
0930 - 1000	NIV in children: An introduction	*Su Siew Choo, Malaysia*	
1000 – 1030	**COFFEE BREAK**		Breakout Room Foyer
1030 - 1100	Assessment and monitoring children on NIV for acute respiratory failure	*Radhiyah Abdul Rashid, Malaysia*	Continuum, Level 3A
1100 – 1130	Acute ventilatory failure in children: Causes, management, pitfalls and solutions with interpretation of values and graphs on NIV monitor during acute respiratory failure	*Jörg Grosse-Onnebrink, Germany*	
1130 – 1200	How to avoid NIV failure and complication	*Jörg Grosse-Onnebrink, Germany*	
1200 - 1230	Intensive care management for paediatric acute respiratory failure	*Gan Chin Seng, Malaysia*	
1230 - 1400	**LUNCH**		The Oak Room, Level 3
1400 - 1415	Briefing		Continuum, Level 3A
1415 - 1445	Hands-on Session – Station 1: HFNC	*Anis Siham Zainal Abidin, Malaysia*	Continuum, Level 3A
1445 - 1515	Hands-on Session – Station 2: NIV Interface	*Su Siew Choo, Malaysia*	
1515 - 1545	Hands-on Session – Station 3: NIV (CPAP and BiLEVEL)	*Jörg Grosse-Onnebrink, Germany*	
1545 - 1615	Hands-on Session – Station 4: Respiratory sampling techniques	*Siti Hajar Tubirin, Malaysia*	
1615 - 1645	Hands-on Session – Station 5: Chest physiotherapy	*Siti Hawa Ahmad, Malaysia*	
1645 - 1700	**CLOSING**		Continuum, Level 3A
1700	**COFFEE BREAK**		Breakout Room Foyer

TIME	TOPIC	SPEAKER	VENUE
1730 - 1815	**SPONSORED SYMPOSIUM 1A (SS1A)** *Company:* Roche *Chairperson: How Soon Hin, Malaysia* *Speaker: David Ross Camidge, United States* *Panelist: Ernest Poh Mau Ern, Malaysia* *Topic*: Uncovering the goal of treating ALK+ lung cancer: What matters?		Spectrum Room, Level 3A
	SPONSORED SYMPOSIUM 1B (SS1B) *Company:* AstraZeneca *Chairperson: Su Siew Choo, Malaysia* *Speaker: Liew Zheyi, Malaysia* *Topic*: Is RSV management still a challenge?		Reflexion Room, Level 3A
1815 - 1900	**SPONSORED SYMPOSIUM 1C (SS1C)** *Company:* AeroChamber *Chairperson: Antoine Mousnier, Malaysia* *Speaker: Asiah Kassim, Malaysia* *Topic*: Evidence-based selection of a spacer: Make every puff count		Spectrum Room, Level 3A
1900	**DINNER**		The Oak Room, Level 3

DAILY PROGRAMME		
25th August 2023, Friday		
0700 - 0800	**REGISTRATION**	Auditorium Foyer, Level 3A
0800 – 0810	**WELCOME ADDRESS** • Pang Yong Kek, Malaysia *President, Malaysian Thoracic Society*	Auditorium, Level 3A
0810 – 0850	**PLENARY 1 (P1)** *Chairperson: Pang Yong Kek* Reforming Healthcare Services *Helmy Haja Mydin, Malaysia*	Auditorium, Level 3A
0850 – 1005	**SYMPOSIUM 1 (S1)**	
	S1A – *Tuberculosis & Nontuberculous Mycobacteria* *Chairpersons: Aziah Ahmad Mahayiddin/Hema Yamini Devi Ramamoorthy* 1. Active case detection using GenXpert - is it adequate? *Ali Esmail, South Africa* 2. Finding the missing TB cases in Malaysia *Zamzurina Abu Bakar, Malaysia* *3.* Urine LAM in diagnosis of TB *Ali Esmail, South Africa*	Reflexion & Continuum (Breakout Room 1), Level 3A
	S1B – *Pleural Diseases* *Chairpersons: Mohamed Faisal Abdul Hamid/Muhammad Redzwan S. Rashid Ali* *1.* Chest tube - does size matters? *Mohamed Faisal Abdul Hamid, Malaysia* 2. Pleural infection *Eihab Bedawi, United Kingdom* 3. Update on malignant pleural effusion *Muhammad Redzwan S. Rashid Ali, Malaysia*	Prism & Spectrum (Breakout Room 2), Level 3A
	S1C – *Chronic Respiratory Disease* *Chairpersons: Liew Zheyi/Shangari Kunaseelan* 1. Craniofacial syndromes and sleep-related breathing disorders *Francois Abel, United Kingdom* 2. Nutritional rehabilitation in chronic lung disease *Siti Hawa Mohd Taib, Malaysia* 3. Children with respiratory complexities and paediatric palliative care *Fahisham Taib, Malaysia*	Auditorium, Level 3A
1005 - 1035	**COFFEE BREAK**	Nexus 1 & Nexus 2, Level 3A
1035 – 1150	**SYMPOSIUM 2 (S2)**	
	S2A – Interventional Pulmonology *Chairpersons: Arvindran Alaga/Wan Jen Lye* 1. Art of tracheobronchial stenting *Nicolas Guibert, France* 2. Cyrobiopsy in ILD *Srivatsa Lokeshwaran, India* 3. ABC of manual airway mapping *Chen Chia-Hung, Taiwan*	Reflexion & Continuum (Breakout Room 1), Level 3A
	S2B – *Sleep Disordered Breathing* *Chairpersons: Ahmad Izuanuddin Ismail/Zainudin Md Zain* 1. Sleep measurement beyond AHI *David Rapoport, New York* 2. Obstructive sleep apnea in pregnancy	Prism & Spectrum (Breakout Room 2), Level 3A

	Muniswaran A/L Ganesham@Ganeshan *3.* Integrative airway practice in managing sleep related breathing disorder *Jeevanan Jahendran, Malaysia*	
	S2C – *Lower Respiratory Tract Infection* *Chairpersons: Norzila Mohamed Zainudin/Eg Kah Peng* 1. Updates on emerging respiratory viruses and diagnostic technologies *Jamal I-Ching Sam, Malaysia* 2. When pneumonia is not just pneumonia *Rus Anida Awang, Malaysia* *3.* Recurrent pneumonia - challenges in immunodeficiency testing *Adli Ali, Malaysia*	Auditorium, Level 3A
1150 - 1240	**SPONSORED SYMPOSIUM 2A (SS2A)** *Company: AstraZeneca* *Chairperson: Ernest Poh Mau Ern, Malaysia* *Speakers: Helmy Haja Mydin, Malaysia* *Azza Omar, Malaysia* *Topic*: Navigating the asthma maze (implementation of data in the real world setting)	Reflexion & Continuum (Breakout Room 1), Level 3A
	SPONSORED SYMPOSIUM 2B (SS2B) *Company: Sanofi* *Chairperson: Pang Yong Kek, Malaysia* *Speaker: Kumaresh Raj Lachmanan, Malaysia* *Topic*: Management of uncontrolled severe asthma: Integrating with type II biologic treatment *Speaker: Shahrul Bahyah Kamaruzzaman, Malaysia* *Topic*: Influenza: Respiratory and non-respiratory impact on older adults	Prism & Spectrum (Breakout Room 2), Level 3A
1240 - 1430	**LUNCH**	Nexus 3, Level 3A
1430 - 1600	**SYMPOSIUM 3 (S3)**	
	S3A – *Oral Presentation* Judges: Abdul Razak Abdul Muttalif, Malaysia Sujal Desai, United Kingdom Khoo Ee Ming, Malaysia	Reflexion & Continuum (Breakout Room 1), Level 3A
	S3B – *Meet the Expert I* *Chairpersons: Noorul Afidza Muhammad/Ashari Yunus* *1.* Pulmonary Arterial Hypertension: What do I look for in referrals and how do I manage? *Lee Chiou Perng, Malaysia* 2. Scleroderma-ILD – How do I manage? *Ong Voon H, United Kingdom* *3.* Catheter-directed intervention in acute pulmonary embolism *Khairul Syafiq Ibrahim, Malaysia*	Prism & Spectrum (Breakout Room 2), Level 3A
	S3C – *Pre-school Wheeze and Asthma* *Chairpersons: Alison Ting Yih Hua/Noor Ain Noor Affendi* 1. Pre-school wheeze – What we should know and do? *Nicholas Chang Lee Wen, Malaysia* 2. Management of acute exacerbation asthma – What's new? *Jessie Anne de Bruyne, Malaysia* *3.* How to manage a child with difficult asthma *Clare Murray, United Kingdom*	Auditorium, Level 3A

1600 - 1650	**SPONSORED SYMPOSIUM 3A (SS3A)** *Company: AstraZeneca* *Chairpersons: Irfhan Ali Hyder Ali, Malaysia* *Rashidah Yasin, Malaysia* *Speaker: Richard Russell, United Kingdom* *Topic*: Now or never: Preventing exacerbations and mortality in COPD	Reflexion & Continuum (Breakout Room 1), Level 3A
	SPONSORED SYMPOSIUM 3B (SS3B) *Company: Bristol-Myers Squibb* *Chairperson: Liam Chong Kin, Malaysia* *Speaker: John Tam Kit Chung, Singapore* *Topic*: The Beginning of a New Era: Where are we going with Immunotherapies in Resectable NSCLC?	Prism & Spectrum (Breakout Room 2), Level 3A
1650 - 1740	**SPONSORED SYMPOSIUM 4 (SS4)** *Company: Boehringer Ingelheim* *Chairperson: Ahmad Izuanuddin Ismail, Malaysia* *Speaker: Andrea Ban Yu Lin, Malaysia* *Topic*: The GOLD-en opportunity - Optimizing COPD management with dual bronchodilators from the start	Reflexion & Continuum (Breakout Room 1), Level 3A
1740 - 1935	**MTS ANNUAL GENERAL MEETING & COFFEE BREAK**	Prism & Spectrum (Breakout Room 2), Level 3A
1935 - 2200	**DINNER**	The Oak Room, Level 3

DAILY PROGRAMME		
26th August 2023, Saturday		
0800 – 0840	**PLENARY 2 (P2)** *Chairperson: Rus Anida Awang, Malaysia* Long-term non-invasive and invasive ventilation, what we have learned and our direction for the future *Brigitte Fauroux, France*	Auditorium, Level 3A
0840 – 1010	**SYMPOSIUM 4 (S4)**	
	S4A – *Interstitial Lung Disease* *Chairpersons: Syazatul Syakirin Sirol Aflah/Aisya Natasya Musa* 1. Interstitial lung abnormality: The theory and clinical practice *Sujal Desai, United Kingdom* 2. Eosinophilic pneumonia *Adelle S. Jee, Australia* *3.* Interstitial lung disease or post COVID-19 lung disease: A complex pulmonary differential *Felix Chua, United Kingdom*	Reflexion & Continuum (Breakout Room 1), Level 3A
	S4B – *Lung Cancer* *Chairpersons: How Soon Hin/Tan Jiunn Liang* *1.* Management of oligometastatic NSCLC *Muthukkumaran A/L Thiagarajan, Malaysia* *2.* Managing dyspnea and cough in Lung Cancer *Aaron Hiew Wi Han, Malaysia* *3.* Role of Immuno- and Targeted therapy in Lung Cancer Resections *Soon Sing Yang, Malaysia*	Prism & Spectrum (Breakout Room 2), Level 3A
	S4C – Paediatric Airway Disease *Chairpersons: Anna Marie Nathan/Amanil 'Ula Hassan* 1. An update on subglottic stenosis *Jeyanthi Kulasegarah, Malaysia* *2.* Chronic rhinosinusitis in children *Saraiza Abu Bakar, Malaysia* *3.* Tracheobronchomalacia *Dg Zuraini Sahadan, Malaysia*	Auditorium, Level 3A
1010 - 1040	**COFFEE BREAK**	Nexus 1 & Nexus 2, Level 3A
1040 – 1210	**SYMPOSIUM 5 (S5)**	
	S5A – Airway Disease *Chairpersons: Azza Omar/Azlina Samsudin* 1. Significance of small airway involvement in asthma *Andrea Ban Yu Lin, Malaysia* 2. What to do with early COPD *Pang Yong Kek, Malaysia* 3. Pulmonary Rehabilitation in COPD *Saari Mohd Yatim, Malaysia*	Reflexion & Continuum (Breakout Room 1), Level 3A
	S5B – *Critical Care* *Chairpersons: Arvindran Alaga/Chai Chee Shee* *1.* HFNC in "post-COVID era" *Wan Nasrudin Wan Ismail, Malaysia* 2. Imaging advances in ARDS evaluation *Sujal Desai, United Kingdom* 3. Extracorporeal Membrane Oxygenation (ECMO) *Suneta Sulaiman, Malaysia*	Prism & Spectrum (Breakout Room 2), Level 3A

	S5C – Home Non-Invasive Ventilation *Chairpersons: Noor Ain Noor Affendi/Dg Zuraini Sahadan* 1. NIV dependent child....when to refer paediatric respiratory physician *Anna Marie Nathan, Malaysia* 2. Home NIV for advanced chronic lung disease *Liew Zheyi, Malaysia* 3. Technology advances in home NIV monitoring *Heather Elphick, United Kingdom*	Auditorium, Level 3A
1210 - 1300	**SPONSORED SYMPOSIUM 5 (SS5)** *Company: GlaxoSmithKline* *Chairperson: Hilmi Lockman, Malaysia* *Speaker: Norbert Berend, Australia* *Topic*: Asthma control through consistency or convenience? An evidence based perspective	Reflexion & Continuum (Breakout Room 1), Level 3A
1300 - 1400	**LUNCH**	Nexus 3, Level 3A
1400 - 1500	**SYMPOSIUM 6 (S6)**	
	S6A - Thematic Oral Presentation **Theme: Respiratory Infection, Sarcoidosis and Asthma** Judges: Roslina Abdul Manap, Malaysia Tengku Saifudin Tengku Ismail, Malaysia	Reflexion & Continuum (Breakout Room 1), Level 3A
	S6B - Thematic Oral Presentation **Theme: Interventional Pulmonology, Lung Cancer and Interstitial Lung Disease** Judges: Mohammed Fauzi Abdul Rani, Malaysia Norhaya Mohd Razali, Malaysia	Prism & Spectrum (Breakout Room 2), Level 3A
	S6C – Thematic Oral Presentation **Theme: Paediatric** Judges: Ahmad Izuanuddin Ismail, Malaysia Alison Thing Yih Hua, Malaysia	Auditorium, Level 3A
	S6D – Case Report Poster Presentation Judges: Fahisham Taib, Malaysia Norzila Mohamed Zainuddin, Malaysia Pang Yong Kek, Malaysia Aida Abdul Aziz, Malaysia Nurul Yaqeen Mohd Esa, Malaysia Zuhanis Abdul Hamid, Malaysia	Breakout Room Foyer, Level 3A
1500 - 1550	**SPONSORED SYMPOSIUM 6A (SS6A)** *Company: AstraZeneca* *Chairperson: Liam Chong Kin, Malaysia* *Speakers: Liam Chong Kin, Malaysia* *Jenniffer Leong, Malaysia* *Sivakumar Krishnasamy, Malaysia* *Topic*: Adjuvant EGFR-TKI in resectable EGFRm eNSCLC: Personalized approach or one-size fits all?	Reflexion & Continuum (Breakout Room 1), Level 3A
	SPONSORED SYMPOSIUM 6B (SS6B) *Company: A.Menarini* *Chairperson: Andrea Ban Yu-Lin, Malaysia* *Speaker: Irfhan Ali Hyder Ali, Malaysia* *Topic*: The advanced of triple inhaler for severe asthma	Prism & Spectrum (Breakout Room 2), Level 3A

1550 - 1640	**SPONSORED SYMPOSIUM 7 (SS7)** *Company: AstraZeneca* *Chairpersons*: Azza Omar, Malaysia *Wong Chee Kuan, Malaysia* *Speaker: Michael Wechsler, USA* *Topic*: Meet the expert: Targeting epithelial TSLP PATHWAY - The NAVIGATOR to the Ultimate DESTINATION in severe asthma care?	Reflexion & Continuum (Breakout Room 1), Level 3A
1640 - 1700	**COFFEE BREAK**	Nexus 1 & Nexus 2, Level 3A
1930 - 2230	**GALA DINNER**	Nexus 3, Level 3A

DAILY PROGRAMME		
27th August 2023, Sunday		
0800 – 0840	**PLENARY 3 (P3)** *Chairperson: Tan Han Loong, Malaysia* Roadmap for Lung Transplant Forum *Leong Swee Wei, Malaysia* *Sotheenathan Krishinan, Malaysia* *Hafsah Begum, Malaysia*	Auditorium, Level 3A
0840 – 1010	**SYMPOSIUM 7 (S7)**	
	S7A – *Meet the Expert II* *Chairpersons: Nurul Yaqeen Mohd Esa/Norhaya Mohd Ghazali* 1. How do I manage home NIV *Soo Chun Ian, Malaysia* 2. EVALI: How do I manage *Nurhayati Mohd Marzuki, Malaysia* *3.* Aging lungs *Tunku Muzafar Shah Tunku Jaafar, Malaysia*	Reflexion & Continuum (Breakout Room 1), Level 3A
	S7B – Advances in Respiratory Medicine *Chairpersons: Roslina Abdul Manap/Hilmi Lockman* *1.* SLIT therapy in asthma *Kent Woo Chee Keen, Malaysia* *2.* Dual-energy CT of the lung - Pearls and Pitfalls *Mohammad Hanafiah Kreah, Malaysia* *3.* CBCT guided lung nodule biopsy *Abdul Hamid Alraiyes, USA*	Prism & Spectrum (Breakout Room 2), Level 3A
	S7C – Medley *Chairpersons: Hafizah Zainuddin/Nicholas Chang Lee Wen* 1. Scoliosis and respiratory complications *Shangari Kunaseelan, Malaysia* 2. Monitoring of pulmonary TB in children *Asiah Kassim, Malaysia* 3. Approach to an oxygen dependent child *Hasniah Abdul Latif, Malaysia*	Auditorium, Level 3A
1010 - 1040	**COFFEE BREAK**	Nexus 1 & Nexus 2, Level 3A
1040 – 1130	**SPONSORED SYMPOSIUM 8 (SS8)** *Company: A.Menarini* *Chairperson: Lalitha Pereirasamy, Malaysia* *Speaker: Lee Chiou Perng, Malaysia* *Topic*: Navigating the allergy storm of severe asthma: The impact of Omalizumab	Reflexion & Continuum (Breakout Room 1), Level 3A
1130 - 1230	**SYMPOSIUM 8 (S8)**	
	S8A – *Lungs on Fire* *Chairperson: Nurul Yaqeen Mohd Esa* *Panelists: Zuhanis Abdul Hamid/Lalitha Pereirasamy/Muhammad Amin Ibrahim* 1. Case 1 *Tan Chen Yong, Malaysia* 2. Case 2 *Affida Ahmad, Malaysia* 3. Case 3 *Nik Nuratiqah Nik Abeed, Malaysia*	Reflexion & Continuum (Breakout Room 1), Level 3A
	S8B – Respiratory Jeopardy	Prism & Spectrum

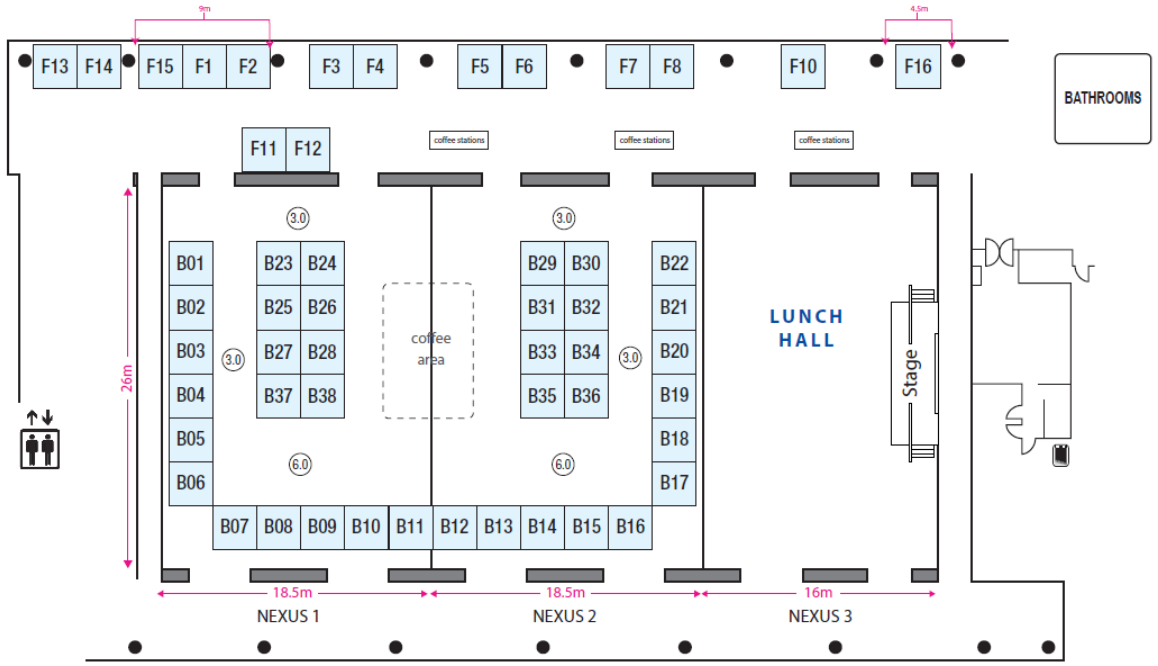
	Chairperson: Aisya Natasya Musa *Judge: Ahmad Izuanuddin Ismail* **Northern** *1. Ranjitha Chandran, Malaysia* *2. Sumithra Appava, Malaysia* **Southern** *1. Bazli Bahar, Malaysia* *2. Ivan Hoh Wei Han, Malaysia* **East Coast** *1. Zul Amali Che Kamaruddin, Malaysia* *2. Ahmad Adib Mohd Nasir, Malaysia* **Sabah/Sarawak** *1. Teoh Sze Kye, Malaysia* *2. Ho Rong Lih, Malaysia*	(Breakout Room 2), Level 3A
	S8C – Multi Disciplinary Case Discussion - Paediatrics *Chairpersons: Patrick Chan Wai Kiong/Su Siew Choo* 1. A child with stridor *Goh Wan Theng, Malaysia* 2. A child with persistent pneumonia *Tan Yee Yen, Malaysia* 3. A child with severe pneumonia *Amanil 'Ula Hassan, Malaysia*	Auditorium, Level 3A
1230 - 1320	**SYMPOSIUM 9 (S9)**	
	S9 - Quiz	Auditorium, Level 3A
1320 - 1330	**CLOSING CEREMONY**	Auditorium, Level 3A
1330	**LUNCH**	Nexus 3, Level 3A

MTS SIG PULMONARY REHABILITATION MINI SYMPOSIUM

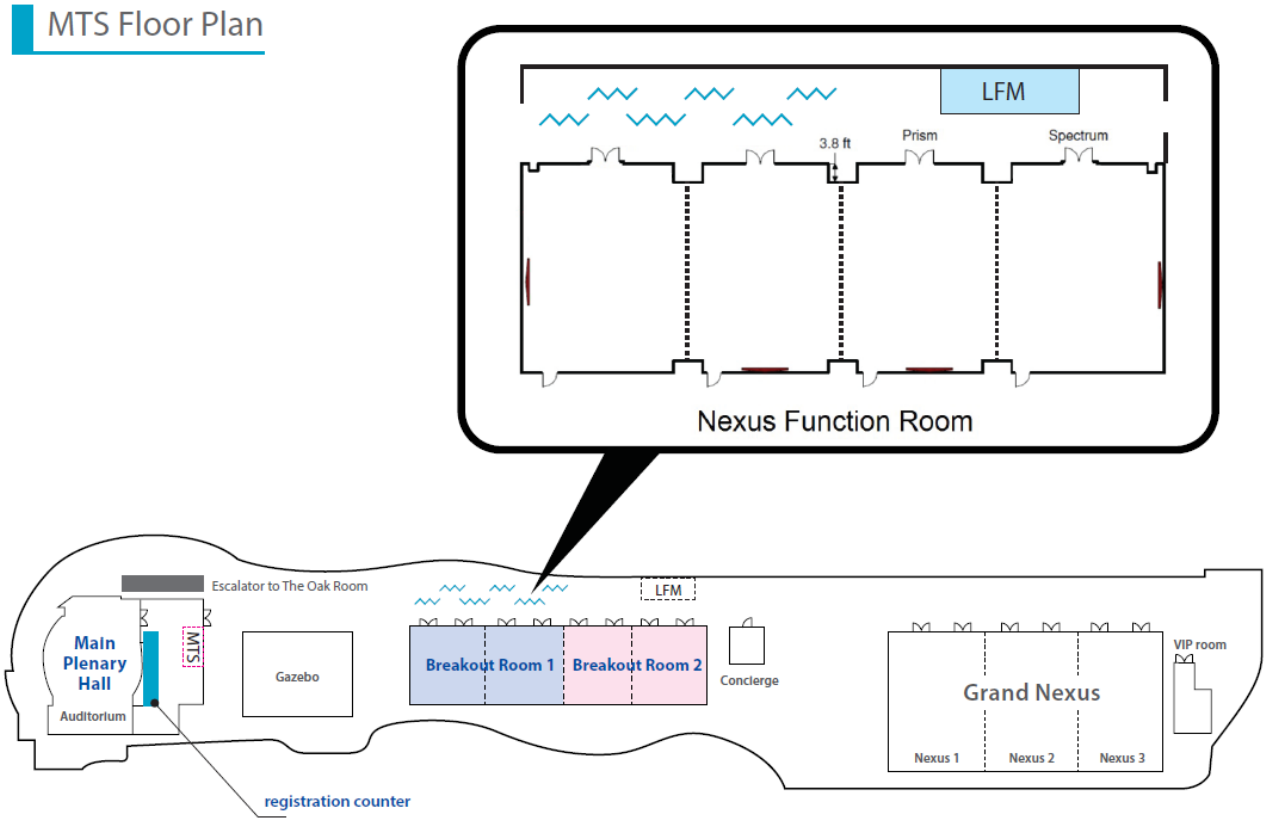
DAY/ DATE	TIME	MINI SYMPOSIUM	TEAM
25th AUG 2023 FRIDAY	1005-1035	**MEET THE EXPERT:** **Pulmonary Rehabilitation and Rehabilitation Physician**	1. Dr Saari Mohamad Yatim 2. Dr Chan Soo Chin 3. Dr Akmal Hafizah Zamli 4. Dr. Mohaneshwary A/P Sandrajagran
	1005-1035	**Respiratory Homecare**	1. Ms Azizah Musa 2. Mr Mohd Harith Ahmad
	1740-1800	**Eat Right for Your Lungs**	1. Ms Zaridah Zainuri 2. Ms Tan Woan Yin 3. Ms Nur Sakinah Ibrahim
26th AUG 2023 SATURDAY	1010-1040	**Assessment and intervention by Physiotherapists**	1. Mrs Anmol Kaur Manjit Singh 2. Dr Fatim Tahirah Mirza Mohd Tahir Beg 3. Ms Nurfarizatul Idayu Mohd Aris 4. Ms Hajjartulakhma Mat Rasdi 5. Ms Yuver Rani A/P Chandrasegaran
	1640-1700	**Energy conserving technique in pulmonary rehabilitation**	1. Ms Mazlina Mahad 2. Ms Suhana Hani Bastani 3. Ms Norafizah Mohamad Anuwar 4. Ms Fadzlina Jafylee 5. Ms Hadirah Ag.Hassan 6. Mr Amirullah Firdaus Samsull
27th AUG 2023 SUNDAY	1010-1040	**QUIZ**	1. Dr Jaya Muneswarao Ramadoo 2. Mr Leow Wooi Leon

FLOOR PLAN & TRADE EXHIBITION

MTS Floor Plan



MTS Floor Plan



GLOSSARY OF EXHIBITORS

Name of Exhibitor	Booth(s) Number
Acuramed	F1
Delfi Marketing Sdn Bhd	F2
Merck Sharp & Dohme (Malaysia) Sdn Bhd	F3 and F4
Roche (Malaysia) Sdn Bhd	F5 and F6
BioCare Pharmaceutical	F7
iNova Pharmaceuticals	F8
Orion Pharma (MY) Sdn Bhd	F10
Bristol-Myers Squibb	F11
EP Plus Group Sdn Bhd	F12
Boehringer Ingelheim (Malaysia) Sdn Bhd	F13 and F14
DanMedik Sdn Bhd	F15
Janssen	F16
A. Menarini Singapore Pte Ltd	B01, B02 and B03
Compass Medical Sdn Bhd	B04 (Display table on 25.8.23)
SOS Oxygene	B05
BMC Medical Co. Ltd	B06
Insan Bakti Sdn Bhd	B07
Takeda Malaysia	B08
ZP therapeutics (a division of Zuellig Pharma)	B09
Eurodrug Laboratories	B10
The Air Station Sdn Bhd	B11
Orient EuroPharma (M) Sdn Bhd	B12
Glenmark Pharmaceutical (M) Sdn Bhd	B13
Viatris	B14
Pfizer (Malaysia) Sdn Bhd	B15 and B16
Olympus (Malaysia) Sdn Bhd	B17
Cipla Malaysia Sdn Bhd	B18
Biomed Global	B19
AstraZeneca Malaysia	B20, B21 and B22
GlaxoSmithKline Pharmaceutical Sdn Bhd	B23, B24, B25 and B26
Finnmed Sdn Bhd	B27 (Display table on 25.8.23)
Pharmaniaga	B28
GlaxoSmithKline Pharmaceutical Sdn Bhd	B29 and B31
Sanofi: Sanofi-Aventis (Malaysia) Sdn Bhd	B30, B32 and B34
GlaxoSmithKline Pharmaceutical Sdn Bhd	B33

Somnotec (M) Sdn Bhd	B35
Medyx Healthcare (M) Sdn Bhd	B36
AeroChamber	B37
Hyphens Pharma Sdn Bhd	B38
Lung Foundation of Malaysia	Outside Breakout Room 2

Thoracic Imaging Workshop

MAKING SENSE OF CXR

Roqiah Fatmawati Abdul Kadir
Hospital Al Sultan Abdullah, Universiti Teknologi MARA, Selangor, Malaysia

A chest radiograph is the most common imaging modality utilised in medical practice, yet it presents a formidable challenges in terms of interpretation, owing to its two-dimensional nature and inherent complexity. The purpose of the talk is to delves into the intricacies of interpreting chest radiographs, exploring the multifaceted aspects of this diagnostic modality and subsequent steps involved in patient management. The complexity of chest radiograph, encompassing intricate anatomical structures with varying pathologies, necessitates a comprehensive understanding for accurate interpretation. This talk also aims to enhance comprehension of this indispensable tool and its implications for patient care.

Thoracic Imaging Workshop

LOOKING FOR TRASURE IN CT THORAX

Wan Aireene Wan Ahmed
Universiti Sains Malaysia, Kelantan, Malaysia

This talk will provide an overview interpretation of CT Thorax, focusing on brief technical aspect, identifying the important imaging features, their clinical significance and arriving at the most reasonable diagnosis

Thoracic Imaging Workshop

MRI THORAX: IMAGE WISELY

Bushra Johari
Hospital Al Sultan Abdullah, Universiti Teknologi Mara, Selangor, Malaysia

The clinical applications of Magnetic Resonance Imaging (MRI) of the thorax are emerging in the Malaysian radiology practice. In the thorax, the advantages of MRI in imaging the heart and great vessels have long been established. MRI is also widely accepted as an ideal tool to evaluate chest wall, pleural masses or tumors of the mediastinum. On the other hand, the largest organ of the thorax, the lung, is usually not investigated with MRI in the first place. Chest radiography is the most commonly employed first-line test for chest disorders, and computed tomography (CT) is currently the most comprehensive and detailed modality for cross-sectional and three-dimensional imaging of the lung. MRI is becoming an alternative, third method for the assessment of pulmonary diseases. Once broadly available and sufficiently robust, it may become a modality of choice for cases in which exposure to ionising radiation should be strictly avoided. This would comprise children, pregnant women and disorders requiring repeated examinations over prolonged periods.

MRI offers additional advantages beyond the scope of X-ray-based techniques due to its functional imaging capacities. More than any other modality, MRI combines excellent soft tissue contrast and functional information. It allows for multiple and repeated measurements and can be used to assess motion and perfusion of the thoracic organs. The three major clinical indications for MRI of the lungs include staging of lung tumors; evaluation of pulmonary vascular diseases; and investigation of pulmonary abnormalities in patients who should not be exposed to radiation.

Thoracic Imaging Workshop

IMAGING IN LUNG CANCER: CAN WE TELL THEM APART

Aida Abdul Aziz
Hospital Sultanah Aminah, Johor, Malaysia

Lung cancer ranges from primary small and non-small cell lung cancer; metastases, mimics of benign masses or superimposed infection. Typical radiological features of each of these entities will be covered in this lecture and outlining the commonest features, atypical features and how radiology may tell them apart. Limitations of differentiating the different types of cancer will also be covered.

Thoracic Imaging Workshop

LUNG CANCER: T DESCRIPTOR: BEYOND NUMBERS

Nor Zuliana Dzul-kifli
Institut Kanser Negara, Putrajaya, Malaysia

Lung cancer is a complex disease with various subtypes and stages, making accurate tumor characterization crucial for effective treatment planning and prognostic evaluation. The American Joint Committee on Cancer (AJCC) has developed a comprehensive tumor descriptor system to provide standardized and consistent criteria for reporting lung cancer characteristics. The AJCC's lung cancer staging encompasses the primary tumor (T), regional lymph nodes (N), and distant metastasis (M). This presentation will only focus on the T- descriptor, which evaluates the size and extent of the primary tumor, considering factors such as invasion into adjacent structures and involvement of the chest wall or diaphragm.

Thoracic Imaging Workshop

LUNG CANCER: MEDIASTINAL STAGING AND N DESCRIPTOR

Noor Emillia Illa
Hospital Tengku Ampuan Rahimah, Selangor, Malaysia

Lung cancer is the most frequent cancer diagnosis and the leading cause of cancer mortality in the world. It is classified according to the TNM system, which codes the anatomic extent of the disease and is the most important prognosticator we have to date. Spread to the regional lymph nodes is a common feature. It is imperative for the radiologist to report a nodal involvement based on the anatomic limits of the nodal stations based on the standard International Association for the Study of Lung Cancer lymph node map (IASLC). Structural imaging of the lymph nodes comprises the size, location, and morphology. On CT, short axis ≥7mm (hilar node) and ≥ 10mm (mediastinal node) are considered abnormal. Radiologists must at least determine the number of lymph nodes and stations involved in a first staging CT, to determine further evaluation either by PET-CT imaging or subject the patient to endobronchial or surgical lymph nodes biopsy.

CT scan has a sensitivity of 60-83%, and specificity of 77-82% in determining the lymph nodes involvement, whereas PET CT on the other hand has a higher sensitivity and specificity compared to CT, with 90% NPV. Ultimately the definitive diagnosis is still based on histopathology.

Multidisciplinary meeting in between clinicians, surgeons, oncologist, radiologist, and nuclear medicine specialist is crucial in determining the flow of the management pathway of the tumor and lymphadenopathy.

Thoracic Imaging Workshop

LUNG CANCER: POST THERAPY TUMOR RESPONSE

Zuhanis Abdul Hamid
Institut Kanser Negara, Putrajaya, Malaysia

In the current era of targeted and cellular specific lung cancer treatment, radiologist role in evaluation of treatment response are becoming more crucial. The most frequently used evaluation system is Response Evaluation Criteria in Solid Tumour aka RECIST. It started since before year 2000 as RECIST 1.0 and improvised and modified according to the treatment pathway and its response.

After RECIST 1.0, RECIST 1.1 came out in 2009 with a few modification and improvisation. PERCIST is using PET CT scan as imaging modality of choice. The latest is i-RECIST where it is modify to cater to the era of immunotherapy treatment response of lung cancer,

This lecture is to described the use of RECIST treatment response evaluation especially in lung cancer . The pitfalls of using RECIST system are also will be discuss at the end of the lecture.

Thoracic Imaging Workshop

IMAGING IN AIRWAY DISEASE

Sujal Desai
Royal Brompton Hospital, London, United Kingdom

Diseases of the airways are surprisingly common – this is particularly true for the so-called ‘small airways’ (defined as those with an internal diameter <2mm). At a global level, bronchiectasis is perhaps the most common disorder coming to medical attention and the prevalence appears to be increasing. While a good clinical history and examination remain important, the diagnosis of bronchiectasis is almost wholly reliant on imaging and, specifically, volumetric high-resolution CT (HRCT). However, radiologists — and, for that matter, clinicians — need to be mindful of the potential pitfalls in HRCT diagnosis: over- and under-calling of bronchiectasis is problematic. The lecture will discuss the key issues in HRCT diagnosis of bronchiectasis. With regards to the small airways, there is considerable historical confusion; variable terms (not infrequently referring to the same pathological entities) appear to circulate in the literature. In this lecture, a more simplified / workable classification of small airways diseases, as applied to imaging, will be proposed.

Thoracic Imaging Workshop

IMAGING IN COPD: HOW WE MAY HELP CLINICIANS

Siti Rohani Mohd Yakop
Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

COPD represents chronic obstructive airway disease resulting from chronic bronchitis, emphysema, or both. Clinical treatments for COPD have grown substantially with the introduction of new pharmacological therapies as well as novel surgical and bronchoscopic procedures. In parallel, recent advancements in imaging techniques have also grown allowing quantitative and qualitative analysis of the lung parenchyma as well as related airways and vascular and extrapulmonary manifestations of COPD. This lecture will highlight on the usefulness of imaging methods in COPD, and useful information radiologist can give in order to help clinicians to make more accurate diagnosis and therapeutic decisions.

Thoracic Imaging Workshop

BAE: WHEN AND HOW

Ch'ng Li Shyan
Hospital Al Sultan Abdullah, Universiti Teknologi MARA, Selangor, Malaysia

Bronchial artery embolization (BAE) offers a minimally invasive treatment option for control of haemoptysis as well as providing a bridge to more definitive medical or surgical intervention focused upon the etiology. BAE is usually indicated in haemoptysis causing significant airway compromise, > three episodes of haemoptysis with 100 mls blood or chronic slowly increasing bleeding episodes. Multidetector computed tomography (CT) could be used for the localization of hemorrhage and identification of the causative etiology of hemoptysis.

Bronchial artery embolization may be performed with embolic agents such as gelatin sponge, microcoils, polyvinyl-alcohol (PVA) particles, embospheres or glue (N-butyl-2-cyanoacrylate). Angiographic findings suggestive of bleeding site include vascular hypertrophy and tortuosity, neovascularity, hypervascularity, aneurysm formation, and shunting (bronchial artery to pulmonary vein or bronchial artery to pulmonary artery). Technical success of BAE is > 90% with clinical success immediately postembolisation around 73–99%. However, recurrence of haemoptysis is variable approximately 10–55% in 46 months, depending on the underlying aetiology. Recurrent hemoptysis less than 6 months post BAE should raise the possibility of accessory, non-bronchial arterial involvement requiring second embolization procedure. Other causes of early recurrent haemoptysis include uncontrolled primary lung infection and underlying lung carcinoma. Complication from BAE are low and often self-limiting such as chest pain and dysphagia. Major complications such as spinal cord infarct, lung infarct, stroke and respiratory failure are rare. In conclusion, BAE is a feasible, minimally invasive and relatively safe treatment option for massive and submassive haemoptysis.

Inhalers and Devices Workshop

INHALER ERRORS: THE IMPACT ON ASTHMA & COPD

Arvindran Alaga
Hospital Sultanah Bahiyah, Kedah, Malaysia

The mainstay of therapy for the management of airway diseases, such as asthma and chronic obstructive pulmonary disease (COPD), is inhaled medication administration. The pressurised metered-dose inhaler (pMDI) and the dry powder inhaler (DPI) are the two most often utilised aerosol medicine delivery devices in daily respiratory practises.

Although pMDIs are frequently administered, patients must correctly inhale and time their breathing and actuation to achieve efficient drug administration. DPIs, on the other hand, are breath-activated, and the majority of devices rely on a quick and forceful inhaling movement for drug delivery. This can be an issue for patients who find it difficult to inhale forcefully.

The number of devices has multiplied dramatically as a result of recent advancements in inhaler technology. However, the abundance of devices has caused uncertainty in how to use them.
The usage of inhalers may not be adequately understood by patients and health care professionals (HCPs).

A mistake in any phase of this process may result in poor drug delivery to the lungs. In fact, mastering an inhaler device entails the proper preparation and handling of the device before inhalation, as well as an ideal inhalation technique.

There is no "perfect device," and numerous studies have demonstrated that, despite advancements in inhaler device technology, individuals with asthma and COPD frequently make inhaler technique mistakes while using both pMDIs and DPIs.

All of the devices evaluated appear to have significant critical error rates overall.

It is necessary to create and use uniform definitions of non-critical and critical device mistakes and to inform patients and healthcare professionals about them. We will be able to better manage COPD and asthma because of it."

Inhalers and Devices Workshop

ADHERENCE TO INHALERS: HAVE WE DONE ENOUGH?

Bandana Saini
The University of Sydney, Australia

Patients with chronic obstructive pulmonary disease (COPD) and asthma face big problems when they don't use their inhalers as prescribed. This leads to poor disease control and more work for healthcare providers. This presentation looks at the many reasons why these patients don't use their inhalers as prescribed and stresses the need for complete solutions.
First, patient-related factors like forgetfulness, not understanding how to use the inhaler, not seeing any benefits, and fear of side effects all add to nonadherence. Socioeconomic factors like poor health literacy, limited access to healthcare, and lack of money can also make it hard to stick to a plan. There are also factors that have to do with the healthcare providers, such as a lack of schooling, not enough monitoring, and gaps in communication. Interventions must take a whole-person effort to fight nonadherence. Patient teaching programmes are very important because they help clear up common misconceptions, improve inhaler technique, and stress how important long-term adherence is. Better communication between patients and providers and shared decision-making gives patients the power to take an active role in their care.
In conclusion, COPD and asthma people who don't use their inhalers as prescribed is a complicated problem that needs multiple solutions. By encouraging adherence, we can greatly improve how well COPD and asthma patients are treated, lower their health care costs, and improve their general quality of life.

Inhalers and Devices Workshop

UNDERSTANDING pMDI's AND SPACERS/VHC

Chong Li Yin
Hospital Sultan Idris Shah, Selangor, Malaysia

The pressurized metered-dose inhaler (pMDI) was introduced to deliver inhaled medications in a convenient and reliable multi-dose presentation. The key components of the pMDI device and patient's inhaler technique all play roles in determining drug delivery to the lungs. Even with optimal technique, however, pMDIs deliver, at best, only ~20% of the emitted dose to the lower airways, leaving ~80% in the oropharynx. Suboptimal technique may further reduce this fraction to zero. Poor coordination between activation of the pMDI with inhalation is a common critical problem too. Spacer or valved holding chamber (VHC) was developed to address some, but not all, of the problems when using a pMDI. The terms of spacer and VHC are not interchangeable. A spacer is an additional reservoir placed between the mouthpiece of the pMDI and the mouth of the patient while a VHC is a reservoir with a one-way valve permitting airflow into, but not out of, the patient's mouth. Use of a spacer/VHC slows down the aerosolized particles emitted from the pMDI, which may further increase lung deposition of the respirable fine particles. The correct use of a spacer/VHC facilitates coordination between pMDI actuation and inhalation but some synchrony of activation of the pMDI with inhalation is still desirable. VHCs are not all the same. Each pairing of a pMDI plus VHC should be considered as a unique delivery system.

Education on the correct use of spacer/VHCs with pMDIs is still important to avoid the potential for new errors introduced with the spacer/VHC.

Inhalers and Devices Workshop

BRINGING THE BEST OUT OF DPI's

Jaya Muneswarao Ramadoo
Hospital Pulau Pinang, Pulau Pinang, Malaysia

Dry powder inhalers (DPIs) are widely and increasingly used in the treatment of asthma and COPD. Dry powder inhalers are breath-actuated, making them convenient to use, and they are also more environmentally friendly. The activation of the DPIs depends on the inspiratory flow rate generated by the patient and on the turbulence produced by the intrinsic resistance of the DPI. While the inspiratory flow varies with the patient's ability and conditions, each device's turbulence is differently sized depending on its technical design. The internal resistance of DPIs varies; for example, there are high- medium-, and low-resistance DPIs. This lecture will thoroughly dissect and explain the concept and principles of DPIs.

Inhalers and Devices Workshop

DEEP DIVING INTO SMI/RESPIMAT

Pang Yong Kek
University Malaya, Kuala Lumpur, Malaysia

Mastering the relevant inhaler technique is key to ensuring success in inhalation therapy for various airway disorders. Conventionally, inhalers can be broadly classified as dry powder inhalers and pressurised aerosol inhalers. For the latter, they can be further divided into aerosol inhalers driven by volatile gases (propellants) and soft mist inhalers driven by compressed air. At the moment, there is only one commercially available soft mist inhaler, known as the Respimat. In this lecture, I will dissect the anatomy of the Respimat and take a deep dive into the mechanical function of this device to explore how the design has enabled us to emit an aerosol cloud that is low in velocity but long in generation time. I will further discuss how these features could be exploited to improve the treatment efficacy.

Inhalers and Devices Workshop

CHOOSING THE RIGHT INHALER FOR THE RIGHT PATIENT

Toby Capstick
Leeds Teaching Hospitals NHS Trust, Leeds, United Kingdom

The management of asthma and COPD is largely dependent on patients being able to use their inhaled medication correctly, but poor inhaler technique continues to be a recurring theme in studies and clinical practice. Sub-optimal inhaler technique results in a significant reduction in the dose delivered to the lungs, resulting in poor disease control, and an increased risk of exacerbations and hospital admissions.

We have shown in our own practice that assessing patients and selecting the right device that they are able to use can achieve significant reductions in exacerbations and hospital admissions.

This session will explore the complexities of using inhaler devices, incorporating the science behind inhaled drug delivery into how to assess which devices patients are likely to be able to use. This will help healthcare professionals understand how to check and teach optimal inhaler technique into everyday clinical practice in order to achieve better outcomes for patients.

Inhalers and Devices Workshop

INHALER EDUCATION: THE STRATEGIES THAT WORK

Bandana Saini
The University of Sydney, Australia

-No abstract-

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

APPROACH TO PAEDIATRIC ACUTE RESPIRATORY DISTRESS

Yap Hsiao Ling
Hospital Tunku Azizah, Kuala Lumpur, Malaysia

One of the most common causes of acute presentation and admission for children to healthcare facilities, Emergency Department, is respiratory condition. There should be timely recognition and initiation of emergency intervention for a child with severe respiratory distress and respiratory failure to prevent long term morbidity and mortality.

Common presentations are infections of the upper and lower respiratory tract, asthma, and less commonly, chronic lung disease, pulmonary aspiration and complications of tracheostomy. It is also important to be aware of extra-pulmonary causes of respiratory distress, e.g. sepsis, diabetic ketoacidosis and heart failure.

A structured approach is utilised to identify life-threatening conditions and provide resuscitation. Interventions required depend on the respiratory conditions, however, some patients with impending respiratory failure may require some form of respiratory support, either non-invasive or invasive. Expert assistance may be required for difficult airway and ventilation, hence getting help early may reduce complications.

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

UPDATES AND STRATEGY IN THE USAGE ON HFNC OXYGEN IN CHILDREN

Anis Siham Zainal Abidin
Sunway Medical Centre, Selangor, Malaysia

High-flow nasal cannula (HFNC) therapy is a non-invasive ventilatory support that has gained interest over the decade as a valid alternative to nasal continuous positive airway pressure (nCPAP) in children with respiratory failure. Its safety, availability, tolerability, and easy application have resulted its increasing usage, either in PICU or outside intensive care units. Despite its wide use in daily clinical practice, there is still a lack of guidelines to standardise the use of HFNC. In this talk , we will look at the current knowledge about the mechanisms of action, safety, clinical effects, and tolerance of HFNC in children, and review clinical practices algorithm for children with respiratory failure.

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

NON-INVASIVE RESPIRATORY SUPPORT IN PAEDIATRIC RESPIRATORY DISTRESS

Su Siew Choo
Hospital Tengku Ampuan Rahimah, Selangor, Malaysia

The use of non-invasive ventilation (NIV) is increasing worldwide in children of all ages, including the neonatal period. Indications for the use of NIV in children include disorders that cause disequilibrium in the respiratory balance (increase in respiratory load such as upper and lower airway abnormalities or lung diseases, decrease in performance of respiratory muscles in neuromuscular disorders, and dysfunction of central drive such as congenital central hypoventilation syndrome and brainstem dysfunction). NIV can be used for acute respiratory distress in the paediatric intensive care setting as well as for long term respiratory support in the home setting. There are two main types of NIV; continuous positive airway pressure (CPAP) and bilevel positive airway pressure (BiPAP). The type of NIV support required depends on the pathophysiological features of the respiratory failure. Other than the correct type of NIV, other important technical aspects include choosing the correct interface and device. Managing children on NIV require a skilled multidisciplinary team in centres with technical competence in paediatric NIV and expertise in therapeutic education.

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

ASSESSMENT AND MONITORING CHILDREN ON NIV FOR ACUTE RESPIRATORY FAILURE

Radhiyah Abdul Rashid
Hospital Tengku Ampuan Afzan, Pahang, Malaysia

For the past two decades, non-invasive ventilation (NIV) such as BiPAP (Bi-level Positive Airway Pressure) or CPAP (Continuous Positive Airway Pressure) which is delivered by mechanical device given through an interface has been increasingly used to provide respiratory support for children in the acute setting from various illness causing acute respiratory failure. It has reduced the need for intubation and invasive ventilation by improving work of breathing, recruiting the lungs, improving respiratory dynamics, increasing functional residual capacity, and optimising the gas exchange.

By avoiding intubation, complications of invasive ventilation such as airway injury or lung injury are avoided as well. NIV is also used electively post extubation in high risk or difficult to wean patients. NIV is relatively cheaper and can be used in non ICU setting with trained staff. In chronic patients on long-term NIV, they may require temporary higher NIV settings during episodes of acute respiratory illness.

Regular assessment and continuous monitoring while on NIV are needed to ensure optimal respiratory support are given to the children at initiation, maintenance and weaning of NIV. Assessment and monitoring include breathing status, haemodynamic stability, conscious level, comfort and compliance to the therapy. Ongoing assessment also include troubleshooting or avoiding NIV complications such as leak from interface, circuit or device; under or overventilation; non synchronisation with device, gastric distension or pressure sore from interface.

Failure to support respiratory failure with optimisation of NIV warrant the children to be intubated and invasively ventilated.

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

ACUTE VENTILATORY FAILURE IN CHILDREN: CAUSES, MANAGEMENT, PITFALLS AND SOLUTIONS WITH INTERPRETATION OF VALUES AND GRAPHS ON NIV MONITOR DURING ACUTE RESPIRATORY FAILURE

Jörg Grosse-Onnebrink
University Hospital Münster, Germany

-No abstract-

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

HOW TO AVOID NIV FAILURE AND COMPLICATIONS

Jörg Grosse-Onnebrink
University Hospital Münster, Germany

-No abstract-

Respiratory Support for Paediatric Acute Respiratory Failure Workshop

INTENSIVE CARE MANAGEMENT FOR PAEDIATRIC ACUTE RESPIRATORY FAILURE

Gan Chin Seng
University Malaya, Kuala Lumpur, Malaysia

Acute respiratory failure in children is a critical condition that requires prompt recognition andmanagement, often in the intensive care unit (ICU). It can be caused by various conditions such as infections, asthma exacerbations, pneumonia, bronchiolitis, congenital heart diseases,and other respiratory or neuromuscular disorders. The management of respiratory failure in paediatric patients involves both supportive measures and addressing the underlying cause.

The general approach to paediatric respiratory failure in the ICU is as follows:

A). Initial resuscitation and stabilization in patient with circulatory shock, supplemental oxygen, ensuring adequate ventilation from the beginning are important.

B). Respiratory support: This includes high humidified flow nasal cannula therapy, non- invasive ventilation and invasive mechanical ventilation depending on the severity of the respiratory failure.

C). Treating the underlying cause: If the cause of respiratory failure is infectious, appropriateantibiotics or antiviral medications should be started as early as possible.

D). Ensure optimal fluid, electrolyte and nutrition management.

E). Bronchodilators and respiratory medications may be administered.

F). Adequate sedation and analgesia to reduce anxiety, improve patient-ventilator synchrony,and reduce ventilation-associated lung injury.

G). Multidisciplinary care team (MDT): MDT involving paediatric intensivists, paediatric respiratory physician, physiotherapist, nurses, and other specialists, to provide an integratedcare and to provide family support and communication.

In summary, the management of respiratory failure in children could be complex and it requires integrated and individualized care. Early recognition, intervention, and close monitoring are essential for a successful outcome.

Plenary 1

REFORMING HEALTHCARE SERVICES

Helmy Haja Mydin
Lung Centre, Pantai Hospital, Kuala Lumpur, Malaysia

The Malaysian healthcare system has progressed well to achieve good outcomes on many health indicators and in providing affordable universal health coverage. However, what has worked well in the past may not necessarily work well in the future, especially in the context of an ageing society and increasing healthcare costs. This presentation seeks to contextualise the recently approved Health White Paper and elaborate upon its four pillars of transforming healthcare service delivery; advancing health promotion and disease prevention; ensuring sustainable and equitable health financing; and strengthening the health system's foundations and governance.

S1A – Tuberculosis & Nontuberculosis Mycobacteria

ACTIVE CASE DETECTION USING GENXPERT – IS IT ADEQUATE?

Ali Esmail
University of Cape Town Lung Institute, Cape Town, South Africa

-No abstract-

S1A – Tuberculosis & Nontuberculosis Mycobacteria

FINDING THE MISSING TB CASES IN MALAYSIA

Zamzurina Abu Bakar
Institut Perubatan Respiratori, Kuala Lumpur, Malaysia

10 million people estimated to develop active tuberculosis (TB) disease worldwide, but 3.6 million of these individuals are “missed” each year. Among these missing cases, an estimated 405,323 children and 248,300 people with drug-resistant forms of the disease are also missed. In Malaysia, the estimated total TB numbers are 33,000 cases in year 2022, but we were only able to find 25,391 active TB cases, missing 7,609 active TB cases. During the COVID-19 pandemic, there have been reductions in the reported numbers of people newly diagnosed with TB. If these numbers reflect real reductions in diagnosis, rather than underreporting or a reduction in TB incidence, there will have been an increase in the number of people in the community with undiagnosed and untreated TB. A person who are living with TB disease can infect up to 10 to 15 people with whom they are in close contact. This means that each missed case can add to the current TB burden, compounding the challenge to end TB. Finding these cases, requires a strong health care system and health workforce as well as better access to TB diagnostic and treatment services. It requires collaboration from all parties, public and private. YES! we can END TB

S1A – Tuberculosis & Nontuberculosis Mycobacteria

URINE LAM IN DIAGNOSIS OF TB

Ali Esmail
University of Cape Town Lung Institute, Cape Town, South Africa

-No abstract-

S1B – Pleural Diseases

CHEST TUBE – DOES SIZE MATTERS?

Mohamed Faisal Abdul Hamid
Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

The dilemma of choosing between a small bore chest catheter and a large bore chest catheter revolves around balancing invasiveness and effectiveness.

Small bore catheters offer advantages as the procedure is simple, less pain, and with faster recovery. They are suitable for evacuating simple pneumothorax or effusions, providing a less invasive and comfortable option for patients with less severe conditions.

Large bore chest catheters provide advantages such as efficient drainage and rapid resolution of significant hemothorax or large pleural effusions. They offer higher flow rates, ensuring effective management of conditions that require substantial fluid collection and drainage.

Ultimately, the choice between a small bore and a large bore chest catheter should be made based on a comprehensive evaluation of the patient's clinical presentation, the anticipated drainage requirements, and the potential benefits and risks associated with each option. Careful consideration of factors such as the severity of the condition, the need for rapid drainage, and the potential for complications will guide the choice between a small bore or large bore chest catheter.

S1B – Pleural Diseases

PLEURAL INFECTION

Eihab Bedawi
Royal Hallamshire Hospital, Sheffield, United Kingdom

Pleural infection is a common condition encountered in respiratory medicine. The last decade has seen vast changes in the management of pleural infection. This talk will summarise the current data in pleural infection supporting the use of intercostal tube drainage, intrapleural enzyme therapy and surgery.

S1B – Pleural Diseases

UPDATE ON MALIGNANT PLEURAL EFFUSION

Muhammad Redzwan S. Rashid Ali
KPJ Johor Specialist Hospital, Johor, Malaysia

Malignant pleural effusion (MPE) affects almost 15 percent of all cancers. It is burdensome and requires hospitalization in most of the time. It portends a poor prognosis. treatment should be personalized, focusing on patient centered goal mainly relieve of dyspnea and ultimately to improve quality of life. This talk will focus on the diagnostic algorithm of MPE and the therapeutic aspects of intercostal drainage, pleurodesis and specifically the role of indwelling pleural catheter (IPC) in our Malaysian setting.

S1C – Chronic Respiratory Disease

CRANIOFACIAL SYNDROMES AND SLEEP-RELATED BREATHING DISORDERS

Francois Abel

John Hunter Children's Hospital, New South Wales, Australia

Sleep disordered breathing is particularly prevalent in young children with craniofacial disorders. Craniofacial syndromes will be defined before focusing on the physiology of upper airway obstruction and sleep disordered breathing in relation to craniofacial morphology.

Multidisciplinary management of craniofacial syndromes with sleep disordered breathing is paramount. Risk factors and increased prevalence in this population should prompt referral to screen for sleep disordered breathing.

Syndrome specific diagnostic and management pathways will be highlighted for craniosynostoses, orofacial clefting syndrome including Pierre Robin Sequence and branchial arches syndromes with micrognathia

S1C – Chronic Respiratory Disease

NUTRITIONAL REHABILITATION IN CHRONIC LUNG DISEASE

Siti Hawa Mohd Taib

University Malaya, Kuala Lumpur, Malaysia

Chronic lung disease, such as chronic obstructive pulmonary disease (COPD) and cystic fibrosis (CF), are complex conditions that can significantly impact an individual's nutritional status. Nutritional rehabilitation plays an important role in managing these conditions, improving overall health outcomes, and enhancing quality of life. The presentation will provide an overview of the key aspects of nutrition rehabilitation in chronic lung disease, including the assessment of nutritional status, nutrition interventions, and the importance of multidisciplinary care.

Assessment of nutritional status is essential in guiding the rehabilitation process. Anthropometric measurements, body composition analysis, dietary intake assessments, laboratory parameters and nutrition-focused physical findings are commonly used to evaluate individual's nutritional status. Individuals with chronic lung disease often have increased energy needs due to increased work of breathing and inflammation. Adequate protein intake is crucial for maintaining respiratory muscle function and promoting tissue repair. A balanced macronutrient distribution, including appropriate carbohydrates and fats, is essential for overall health. In CF, pancreatic insufficiency and malabsorption may require pancreatic enzyme replacement therapy and fat-soluble vitamin supplementation.

Individualized nutrition interventions should be developed based on findings from nutrition assessment. Caloric intake may need to be adjusted based on disease severity, comorbidities, and goals of care. Dietary plans may include small, frequent meals; use of oral nutritional supplements (ONS); and modifications for chewing or swallowing difficulties. ONS are foods that contain specific amounts of energy, protein, vitamins and minerals that are specifically designed for individuals who may not be able to eat enough food to meet their needs through their regular diet alone. Optimal nutrition rehabilitation in chronic lung disease requires a multidisciplinary approach. Regular monitoring, follow-up, and adjustment of the nutrition plan are necessary to ensure its effectiveness.

In conclusion, nutrition rehabilitation plays a crucial role in the management of chronic lung diseases. Individualized assessment, appropriate nutrition interventions, and a multidisciplinary approach are vital for

optimizing nutritional status, enhancing respiratory function, and improving overall well-being in individuals with chronic lung disease.

S1C – Chronic Respiratory Disease

CHILDREN WITH RESPIRATORY COMPLEXITIES AND PAEDIATRIC PALLIATIVE CARE

Fahisham Taib
Hospital Universiti Sains Malaysia, Kelantan, Malaysia

Managing respiratory diseases using a palliative care lens can be challenging. Palliative care is a specialty service dealing with sick, life-threatening conditions and terminally ill children using a multi-disciplinary team to reach similar goals of care. The trajectory of respiratory diseases in children is often unpredictable. The basis of management may focus on understanding the disease pathophysiology, a non-medical approach, or medical management. Families and patients can be supported by managing their expectations, achieving realistic goals, and applying available resources locally. There are local guidelines available to guide the appropriate intervention, such as the use of NIV for specific groups of patients, however, this may not be feasible due to the financial constraints and unavailability of local respirologists specializing in the care of rare respiratory conditions. A holistic approach must consider not only medical and physical therapy, but also engaging in other aspects such as psychosocial, emotional, and spiritual for both the patients, according to their developmental understanding, and their families.

S2A – Interventional Pulmonology

ART OF TRACHEOBRONCHIAL STENTING

Nicolas Guibert
University Hospital Centre Toulouse, Toulouse, France

Airway stenting (AS) offers rapid and sustained relief of symptoms in most patients treated for malignant or benign central airway obstruction (CAO) and can also be curative in itself in cases of benign tracheobronchial stenosis. In the past 30 years, this field has seen great progress, from the misuse of vascular non-covered metallic stents to the development of silicone airway stents with an increasingly large panel of shapes and of hybrid, partially or fully covered, self-expandable metallic stents (SEMS) customized to the airways. This presentation aims to offer an overview on:
1) the respective advantages and drawbacks of these two main categories' of devices;
2) the main indications for AS, and the rationale behind the choice of stent in each situation;
3) the main promises born from the progress made in the field in the past few years, including the development of drug-eluting, biodegradable or patient-specific customized AS.

S2A – Interventional Pulmonology

CYROBIOPSY IN ILD

Srivatsa Lokeshwaran
Aster Whitefield Hospital, Karnataka, India

ILD is a common lung disease a pulmonologist encounters in his daily clinic. There has been a lot of disruption in understanding and treatment of the disease over the last decade.The role of biopsy is a cornerstone in the multidisciplinary discussions of ILD. The newer way of acquiring biopsy and being less traumatic than a surgical lung biopsy has proven to be a boon in this setting. I would be elaborating on the same by walking you through a case by case discussion

S2A – Interventional Pulmonology

ABC OF MANUAL AIRWAY MAPPING

Chen Chia-Hung
China Medical University Hospital, Taichung City, Taiwan

To diagnose a peripheral pulmonary lesion represented by lung cancer using a bronchoscope, accurately grasping the bronchial route to reach the peripheral pulmonary lesion is necessary. In recent years, the use of virtual bronchoscopic navigation has become widespread. However, it is ideal if, by looking at the axial computed tomography (CT) images, doctors think and accordingly perform the tracing branch technique, which draws the bronchial route.

Notably, approaching the lesion is the most difficult task. Although advancements in bronchial navigation can address this difficulty, the limitations of high equipment cost, extraction of navigation data from CT, and the time and effort required to create a navigation image remain. Moreover, the navigation itself cannot always accurately represent the peripheral bronchi. Hence the “branch reading technique”, also called “bronchial branch tracing method” which was discovery by Dr. Noriaki Kurimoto. This is a simple manual airway mapping planning which is based on the consecutive CT images that showed the branches that led to the peripheral bronchus involved with the lesion and making it feasible for accurately guiding pulmonary lesions along with bronchial generations.

But in Taiwan, there is still some difficutly to do bronchial branch tracing method due to exam time is limit and we usually need to do brochoscopy 10-15 patients every days. So we used annother diagnostic methods, called CEO methods. “C” is known the rough lesion site by CT, “E” is found the lesion by endobronchial ultrasound (EBUS) and “O” is confirmed by rapid onsite evaluation (ROSE). In our hospital, CEO medthods can imporved the diagnostic yield without more procedure time. The efficiency of CEO method depends on the bronchoscopist’s skill. Training could solve this issue. High diagnostic yield of our cohort is related to procedural skills of the bronchoscopists and the presence of ROSE.

In conclusion, bronchial branch tracing method or CEO methods for bronchoscopic navigation serves as a feasible and economical method for guiding peripheral pulmonary nodule biopsy, it could be conducive to access more distal airways and achieve similar diagnostic yield in comparison with virtual bronchoscopic navigation.

S2B – Sleep Disordered Breathing

SLEEP MEASUREMENT BEYONG AHI

David Rapoport
Icahn School of Medicine, New York, USA

The apnea hypopnea index (AHI) has long been the metric used to diagnose obstructive sleep apnea, judge its severity, predict its consequences, evaluate the probability of success for various non-CPAP therapies, and characterize the pathophysiology of the syndrome. Despite some degree of correlation to the above, the AHI shows only poor-modest ability to predict consequences in individual subjects. Approaches to improving on the AHI metric have varied the definition and cut points; added separate non-ventilatory metrics, combined with the AHI in statistical and other models; and sought to replace the AHI entirely by non-ventilatory measures. Proposed in this talk is the use of the all-night distribution of the amplitude of each breath, determined automatically from a flow recording. A single parameter, the ventilatory burden, can be derived from an amplitude histogram, or the entire distribution can be used as inputs to a machine learning approach. Finally,

the combination of the ventilatory distribution with distributions of hypoxic and arousal metrics can be used in simple statistical combination, or can be used in a machine learning AI approach. Preliminary data suggests these approaches have good test-retest reliability, face validity, and show promise of better correlation to sleepiness and CV endpoints than the AHI and derived metics.

S2B – Sleep Disordered Breathing

OBSTRUCTIVE SLEEP APNEA IN PREGNANCY

Muniswaran A/L Ganesham@Ganeshan
Hospital Tunku Azizah, Kuala Lumpur, Malaysia

Obesity rates among pregnant mothers in Malaysia has reached epidemic proportions and remains a significant global and national health burden, both to the mother and the fetus.

Prevention remains the key and although we have made significant advancements with regards to the optimization and management of obese mothers, such as universal screening for diabetes and gestational diabetes, venous thromboembolism risk assessment and initiation of thromboprophylaxis and prevention of pre-eclampsia via the initiation of aspirin, screening and active management of obstructive sleep apnea (OSA) remains an essential pregnancy intervention which is yet to be appropriately addressed and developed as a standard of care for these high risk mothers.

Although the true incidence of OSA among pregnant mothers remains understudied, the clinical presentation may often be missed as “normal” during pregnancy and hence it remains a diagnostic challenge. Although there has been several validated questionnaires for OSA among pregnant mothers, it remains inaccurate in prediction and as a screening tool for OSA during pregnancy. Treatment on the other hand has been proven to have significant maternal and fetal benefits, especially with regards to prevention of preeclampsia, growth restricted fetus and even improvement in preterm delivery and 5 minute Apgar scores of the fetus.

This lecture will review the importance and availability of various screening modalities for obstructive sleep apnea among pregnant mothers and will highlight the benefits of treatment of OSA during pregnancy, apart from highlighting the importance for better research and development of standardised guidelines for optimal pregnancy outcomes, as we precisely progress towards optimal maternal and fetal outcomes among such patients.

S2B – Sleep Disordered Breathing

INTEGRATIVE AIRWAY PRACTICE IN MANAGING SLEEP RELATED BREATHING DISORDER

Jeevanan Jahendran
Pantai Hospital, Kuala Lumpur, Malaysia

Over the past decade, we've witnessed a remarkable surge in data related to sleep-related breathing disorders, driving advancements in research, medical and surgical treatments. Our approach has evolved from a multidisciplinary platform to a more integrated one, emphasizing a deeper understanding of root causes before implementing management strategies. Through collaborative efforts among specialists from various fields, we've made substantial progress in achieving optimal outcomes for our patients. I will share the work and progress made over the last four years in developing this integrative approach with our dedicated team members.

S2C – Lower Respiratory Tract Infection

UPDATES ON EMERGING RESPIRATORY VIRUSES AND DIAGNOSTIC TECHNOLOGIES

Jamal I-Ching Sam
University Malaya, Kuala Lumpur, Malaysia

Even as the COVID-19 pandemic has receded, novel and new genotypes of respiratory viruses continue to emerge in recent decades. Most of these have been zoonotic RNA viruses from the families *Coronaviridae* (SARS-CoV-1, MERS-CoV, SARS-CoV-2) and *Orthomyxoviridae* (pandemic influenza H1N1, variant influenza, avian influenza H5N1, H5N6, H7N9), showing the importance of the One Health concept that human health is closely linked to animals and the environment. Additionally, there have been global outbreaks of unusual genotypes of known respiratory viruses, such as enterovirus D68 and adenovirus types B7 and B14. Novel viruses such as sapovirus and pteropine orthoreovirus are associated with respiratory infections in humans, but are not routinely tested for, leading to a lack of knowledge of prevalence. The conditions predisposing to emergence of respiratory viruses will be discussed. The pandemic led to a major expansion in laboratory capacity for molecular diagnostics and the widespread use and acceptance of point-of-care (lateral flow assay) testing. There is an increasing emphasis on syndromic testing for multiple pathogens, which are now increasingly available at reasonable cost and more easily performed automation. Newer technologies which may become routinely available in the near future include molecular point-of-care tests and metagenomics (next-generation sequencing). However, challenges in the clinical interpretation of molecular testing remain.

S2C – Lower Respiratory Tract Infection

WHEN PNEUMONIA IS NOT JUST PNEUMONIA

Rus Anida Awang
Hospital Pulau Pinang, Pulau Pinang Malaysia

When do we need to suspect that the pneumonia is not just pneumonia?

1. When patient presented with recurrent pneumonia
2. When pneumonia is persistent
3. When patient developed severe complicated pneumonia
4. When there is a persistent localised lung finding
5. Suspicious imaging
6. Failure to thrive

There are many conditions that can present with pneumonia:

1. Congenital lung malformation: congenital cystic adenomatoid malformation (CCAM), intra- and extra-lobar pulmonary sequestration (PS), bronchogenic cysts, congenital large hyperlucent lobe (CLHL, also reported as congenital alveolar overdistension, formerly known as congenital lobar emphysema) and bronchial atresia.
2. Recurrent aspiration
3. Retained foreign body aspiration
4. Primary or secondary immunodeficiency
5. Cystic Fibrosis
6. Primary Ciliary Dyskinesia

Case illustrations and when to suspect pneumonia with underlying conditions are discussed.

S2C – Lower Respiratory Tract Infection

RECURRENT PNEUMONIA – CHALLENGES IN IMMUNODEFICIENCY TESTING

Adli Ali
Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

In cases with recurrent pneumonia-It is crucial to identify the underlying cause to provide appropriate treatment and prevent further complications. However, challenges in immunodeficiency testing pose significant obstacles in accurately diagnosing and managing this condition. One major challenge in immunodeficiency testing is the lack of standardized protocols and knowing the type of test for the phenotype of patients. Some immunodeficiencies are difficult to detect using conventional tests and may require specialized assays or genetic testing, which are mostly not readily available in all healthcare settings. Additionally, false-negative or positive results are common in immunodeficiency testing. Addressing these challenges requires collaboration between the respiratory physician and immunologist to develop standardized protocols for testing and improve access to advanced diagnostic tools. By overcoming these obstacles, accurate diagnosis and management of recurrent pneumonia associated with immunodeficiencies can be achieved, leading to better patient outcomes.

S3B – Meet the Expert I

PULMONARY ARTERIAL HYPERTENSION: WHAT DO I LOOK FOR IN REFERRALS AND HOW DO I MANAGE

Lee Chiou Perng
Hospital Sultan Idris Shah, Selangor, Malaysia

A lot of emphasis has been given to early diagnosis, early escalation of therapy in the latest 2022 ERS/ESC PAH guideline. In this talk, we will be discussing on how we can help in accelerating the referral process what you can/should do to perform the initial investigations. Addressing the many limitations with regards to initiating PAH-specific medications due to its cost. It is well known that delayed diagnosis will lead to poorer outcome, therefore, in this session we will be looking into improving this unmet need.

S3B – Meet the Expert I

SCLERODERMA-ILD-HOW DO I MANAGE?

Ong Voon H
University College London, London, United Kingdom

Systemic sclerosis is a clinically heterogeneous multisystemic disease with internal organ complications including interstitial lung disease. Interstitial lung abnormalities are evident on HRCT Chest in up to 80% of patients and just under half develop clinically significant ILD which is the leading cause of mortality in SSc. Patient stratification in SSc-ILD based on clinical and laboratory characteristics is invaluable to identify those most at risk for developing progressive ILD from those more likely to have a mild disease or a slow progressive trajectory. Baseline HRCT and lung function with regular lung function monitoring are key to effective management. Detailed analyses from recent well-conducted clinical trials have confirmed prognostic markers of lung function decline and predictive markers of response thus inform subgroups of patients likely to benefit from therapy. Data from real world experience seek to confirm results from these highly selective clinical trial populations. Considering the increasing therapeutic options for SSc-ILD coupled with the systemic nature of SSc, shared management between respiratory physicians and rheumatologists is key

S3B – Meet the Expert I

CATHETER-DIRECTED INTERVENTION IN ACUTE PULMONARY EMBOLISM

Khairul Syafiq Ibrahim
Pusat Perubatan Pakar Universiti Teknologi MARA, Selangor, Malaysia

There is a growing clinical and scientific interest in catheter-directed therapy (CDT) of acute pulmonary embolism (PE). Currently, CDT should be considered for patients with high-risk PE, in whom thrombolysis is contraindicated or has failed. Also, CDT is a treatment option for initially stable patients in whom anticoagulant treatment fails, i.e., those who experience haemodynamic deterioration despite adequately dosed anticoagulation. However several techniques for CDT are available without evidence supporting one over the other, and variation in practice with regard to periprocedural anticoagulation is considerable. The aim of this presentation is to describe the currently available CDT approaches in PE patients and to share the latest clinical consensus statement in standardising patient selection, the timing and technique of the procedure itself. This clinical consensus statement serves as a practical guide for CDT, complementary to the formal guidelines.

S3C – Pre-school Wheeze and Asthma

PRE-SCHOOL WHEEZE – WHAT WE SHOULD KNOW AND DO?

Nicholas Chang Lee Wen
Hospital Pulau Pinang, Pulau Pinang, Malaysia

Pre-school wheeze is a common respiratory disorder among children with significant morbidity if under-recognized and undertreated. Having said that, diagnosis and diagnosis difficulties in pre-school children with wheeze still remain unclear. Numerous changing diagnostic labels have been applied to these children over the years. Bronchodilators and inhaled corticosteroids are still the mainstay of treatment modalities for these group of children. This presentation will explore on the current evidence and latest updates on classification for pre-school wheeze and step wise management.

S3C – Pre-school Wheeze and Asthma

MANAGEMENT OF ACUTE EXACERBATION ASTHMA – WHAT'S NEW?

Jessie Anne de Bruyne
University Malaya, Kuala Lumpur, Malaysia

There is an emphasis in adults and older children on making the diagnosis of asthma before initiation of treatment based on variability in Forced Expiratory Volume in 1second (FEV1) or peak expiratory flow rate (PEFR). Increasingly so, especially in young children, the smaller airways are being recognized as important in asthma and assessment and management of small airway function is developing.

Not all that wheezes is asthma especially in the young child. However, anti-inflammatory treatment is also important in other common causes of wheeze in the young child. Children less than 5-years-old with intermittent viral wheezing may be treated with intermittent short courses of ICS.

Combination treatment – inhaled corticosteroid (ICS) and long-acting beta-agonist (LABA) - as maintenance and reliever therapy (MART) has been advocated and there is a separate track to emphasize superiority over using short-acting beta-agonists (SABA) as reliever. Severe exacerbations, and/or hospital visits and admissions were reduced in combination treatment v.s. single reliever therapy.

Delivery of medication is always important and inhaled therapy has many distinct advantages although there is also a role for oral and parenteral treatment.

Parents and/or the child are the first responders in acute asthma and they need to have a clear plan of action. Asthma action plans should be written (printed, digital and/or pictorial) rather than just verbal.

Finally, the most important step in the management of acute asthma is achieving and maintaining good asthma control.

S3C – Pre-school Wheeze and Asthma

HOW TO MANAGE A CHILD WITH DIFFICULT ASTHMA

Clare Murray
Royal Manchester Children's Hospital, Manchester, United Kingdom

A practical approach as to how to manage a child with difficult asthma, including a step-wise assessment, consideration of diagnosis, further investigations, co-morbidities and exacerbating factors. Newer treatment options will be discussed, including monoclonal antibodies, their mechanism of action, safety and efficacy in children and when and in whom to prescribe them.

P2 – Plenary 2

LONG TERM NON-INVASIVE AND INVASIVE VENTILATION, WHAT WE HAVE LEARNED AND OUR DIRECTION FOR THE FUTURE

Brigitte Fauroux
Hospital Necker Enfants Malades, Paris

Long term noninvasive respiratory support, comprising continuous positive airway pressure (CPAP) and noninvasive ventilation (NIV), in children is expanding worldwide, with increasing complexities of children being considered for this type of ventilator support and expanding indications such as palliative care. There have been improvements in equipment and interfaces. Despite growing experience, there are still gaps in a significant number of areas: there is a lack of validated criteria for CPAP/NIV initiation, optimal follow-up and monitoring; weaning and long term benefits have not been evaluated. Therapeutic education of the caregivers and the patient is of paramount importance, as well as continuous support and assistance, in order to achieve optimal adherence. The preservation or improvement of the quality of life of the patient and caregivers should be a concern for all children treated with long term CPAP/NIV. As CPAP/NIV is a highly specialised treatment, patients should be managed by an experienced pediatric multidisciplinary team.

S4A – Interstitial Lung Disease

INTERSTITIAL LUNG ABNORMALITY: THE THEORY AND CLINICAL PRACTICE

Sujal Desai
Royal Brompton Hospital, London, United Kingdom

Interstitial lung abnormalities or ILAs are an area of respiratory medicine (and, specifically, interstitial lung diseases) attracting considerable clinical and research interest. This has grown from a number of apparently disparate historical studies all of which have documented the presence of abnormalities on CT in *asymptomatic* patients and, more specifically, the identification of subtle subpleural reticulation, potentially likely to reflect lung fibrosis. Not surprisingly, greater attention in this area has been brought to bear since the publication of the successful antifibrotic drug therapy trials: the key question being, could the serendipitous identification of an ILA be the early or asymptomatic phase of idiopathic pulmonary fibrosis (IPF)? However, against this, it is clear that not all patients with an ILA will develop IPF — the prevalence of ILAs and IPF are orders of magnitude different, meaning that the majority of ILAs will not be the harbingers of future of IPF! That said, it is estimated that ~20% of ILAs will progress over a 2 year period. In this lecture a little of the history and clinical practice implications of ILAs and pulmonary fibrosis will be reviewed.

S4A – Interstitial Lung Disease

EOSINOPHILIC PNEUMONIA

Adelle S. Jee
Royal Prince Alfred Hospital, Sydney, Australia

Acute and chronic eosinophilic pneumonia are rare lung diseases, part of the spectrum of eosinophilic lung diseases. They are characterised by eosinophilia on bronchoalveolar lavage and infiltration of the interstitium. They may be idiopathic or secondary to infection, smoking, inhalational injury or drugs. Steroid therapy remains the mainstay of treatment of both disorders. The epidemiology, diagnosis, clinical features, radiology, and role of newer biologic agents being explored for treatment will be discussed

S4A – Interstitial Lung Disease

INTERSTITIAL LUNG DISEASE OR POST COVID-19 LUNG DISEASE: A COMPLEX PULMONARY DIFFERENTIAL

Felix Chua
Royal Brompton Hospital, London, United Kingdom

In the four years since the start of the COVID-19 pandemic, a large number of affected individuals including survivors of severe SARS-CoV-2 infection continue to experience symptoms ranging from mild breathlessness to persistent respiratory disability. Whilst the pneumonic complications of COVID-19 particularly those encountered in the early waves are widely recognised, post-COVID interstitial lung disease (ILD) remains a poorly understood and contentious entity. In clinical practice, distinguishing pre-existing ILD that has been aggravated by COVID-19 from a persisting pulmonary disease that can be confidently attributed to the viral infection remains challenging. The auto-inflammatory nature of COVID-19, the radiologic manifestation of particular ILD patterns and the truly progressive clinical characteristics in a minority of post-COVID-19 sufferers all add to the diagnostic and management complexities of this entity.

S4B – Lung Cancer

MANAGEMENT OF OLIGOMETASTATIC NSCLC

Muthukkumaran A/L Thiagarajan
Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Oligometastasis is a metastatic disease that is limited by number and organ sites. Definitions have been heterogeneous, and thus meaningful interpretation of available data in this subject matter remains challenging. The incidence is definitely increasing with improved access to imaging modalities as well as the technologies related to imaging.

This talk will focus on case-based approach to management oligometastatic disease. In the process, available evidences to support such management recommendations will also be explored.

S4B – Lung Cancer

MANAGING DYSPNEA AND COUGH IN LUNG CANCER

Aaron Hiew Wi Han
Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Cough and breathlessness are common symptoms of lung cancer that can affect the quality of life of patients and their caregivers. They can be caused by various factors, such as the growth of the tumor, the treatment of the cancer, or complications of the disease. Managing these symptoms requires a comprehensive approach that involves both medical and non-medical interventions. What are the tips and tricks to help the patients achieve good symptoms control? What is a breathlessness care plan?

S4B – Lung Cancer

ROLE OF IMMUNO AND TARGETED THERAPY IN LUNG CANCER RESECTIONS

Soon Sing Yang
Pusat Jantung Sarawak, Sarawak, Malaysia

Traditionally the mainstay of lung cancer management comprised of surgery, chemotherapy and radiotherapy. The primary goal of surgery is to achieve an R0 resection whereby the lung cancer is removed with clear margins and all the appropriate lymph nodes stations are dissected for accurate pathological staging whilst preserving as much lung tissue as possible. However, despite R0 resections, 5 year recurrence can be up to 70% in stage 3 NSCLC. Increasingly, especially over the last decade, targeted therapy and immunotherapy has emerged to complement the above modalities.

Immunotherapy in addition to surgical resection in both adjuvant and neoadjuvant settings has been shown to be more effective in achieving complete pathological response and disease free survival as compared to chemotherapy alone. This is done without compromising resection rates and feasibility of minimally invasive procedures.

Adjuvant 3rd generation TKI post surgery in early stage NSCLC with common EGFR mutations demonstrated greatly improved overall survival compared to chemotherapy alone in the landmark ADAURA study. Although the use of neoadjuvant TKI is not formally endorsed in guidelines, their superior Objective Response Rate (ORR) makes it a viable alternative to neoadjuvant chemotherapy in down staging and down sizing more advanced NSCLC.

With more effective systemic therapies coming online in the near future, even stage 4 patients with oligometastasis or even oligoprogression might be deem to be resectable. There are also upcoming technologies that allow resection/ablation to be carried out with minimal morbidity.

S4C – Paediatric Airway Disease

AN UPDATE ON SUBGLOTTIC STENOSIS

Jeyanthi Kulasegarah
University Malaya, Kuala Lumpur, Malaysia

Over the years, significant progress has been made in understanding, diagnosing, and managing paediatric subglottic stenosis (SGS), leading to improved outcomes for affected infants and children.
Recent updates in paediatric SGS have shed light on its aetiology and pathophysiology. While acquired stenosis due to prolonged intubation remains a common cause, there is growing recognition of congenital anomalies and inflammatory conditions contributing to SGS development. Researchers have identified specific genetic factors and abnormal wound healing processes that play a role in the development and progression of SGS.
Advancements in diagnostic techniques have revolutionized the early detection of SGS in children. High-resolution airway endoscopy and three-dimensional reconstructions have significantly enhanced the accuracy and precision of diagnosis.
Treatment strategies for paediatric SGS have also evolved. The multidisciplinary approach involving paediatric otolaryngologists, pulmonologists, gastroenterologist and other specialists has become the standard of care. Medical management, including anti-inflammatory agents and airway humidification, has proven effective in certain cases. Endoscopic interventions, such as balloon dilation and laser therapy, offer minimally invasive alternatives to traditional surgery, reducing the need for open reconstructive procedures.
Moreover, advancements in tissue engineering approaches have shown promising potential.
Post-treatment care and long-term follow-up remain crucial aspects of managing paediatric SGS. Regular surveillance allows for timely detection of recurrent stenosis and other complications, ensuring continuous monitoring of the patient's airway function and overall well-being.
In conclusion, as research continues, the future holds the promise of even more effective and tailored approaches to tackle this challenging condition in the paediatric population.

S4C – Paediatric Airway Disease

CHRONIC RHINOSINUSITIS IN CHILDREN

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Pediatric chronic rhinosinusitis is defined as at least 90 continuous days of symptoms of purulent rhinorrhea, nasal obstruction, facial pressure/pain, or a cough with corresponding endoscopic and/or computed tomography (CT) findings in a patient who is 18 years of age or younger. It is important to note that age is a distinguishing factor in the diagnosis of PCRS in that allergic rhinitis is a more prominent factor in older children, whereas adenoid disease (independent of adenoid size) is a more important contributing factor in younger children. The sinonasal anatomy of children differs significantly when compared to the sinonasal anatomy of adults. Even within the pediatric group, the anatomy varies depending on the age of the patient, as structures reach full maturation in the teenage years. Understanding the vicious cycle of sinus diseases, comparing acute and chronic sinusitis. Management of sinusitis can be divided into medical and surgical intervention, how to decide. Management of complicated sinusitis and what are the possible complications

S4C – Paediatric Airway Disease

TRACHEOBRONCHOMALACIA

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Tracheobronchomalacia (TBM) is characterized by an excessive dynamic collapse of the trachea and main bronchi during expiration. Its presentation includes a range of nonspecific respiratory symptoms, depending on the location, extent, and severity of the airway collapse. Long-segment, multi-level or severe (complete collapse) TBM is typically evident clinically from birth; however, symptoms may not appear until two or three months of age or later in some cases.

The diagnosis should be suspected by a clinical history that would be suggestive of TBM, including barky cough, noisy breathing, recurrent pneumonia, prolonged pulmonary infection, feeding difficulties with dyspnea, cough, and aspiration, transient respiratory distress requiring positive pressure, oxygen dependence, ventilator dependence, blue spells, and apparent life-threatening events (ALTEs).

For the most accurate diagnosis of TBM, direct visualization is achieved through flexible and rigid bronchoscopy. In recent years, dynamic airway evaluation and angiography using a contrast-enhanced multidetector computed tomography (MDCT) with two-dimensional (2D) and three-dimensional (3D) reconstructions have become an important modality to aid in the evaluation of TBM.

All patients affected by mild to severe TBM may benefit from medical management. The mainstay of medical management while awaiting airway structural stability is the optimization of the ciliary clearance of secretions since the cough clearance mechanism is thwarted by airway collapse. Surgical treatment is reserved for the most severe cases and must be specific to the type and location of the TBM. Non-invasive ventilation is another option as to buy time while waiting for the malacic airway to become stable.

S5A – Airway Disease

SIGNIFICANCE OF SMALL AIRWAY INVOLVEMENT IN ASTHMA

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Asthma, a chronic inflammatory airway disease, exhibits heterogeneity and is characterized by bronchial hyperresponsiveness to various stimuli. This hyperresponsiveness can resolve spontaneously or with treatment. In the past, asthma was commonly perceived as a condition mainly affecting the larger airways with the small airways termed a “quiet zone” believed to account for only less than 10% of the airway resistance. Emerging evidence now suggests that airway inflammation in asthma extends to the small airways, particularly in individuals with severe asthma. The small airways within the lungs refer to bronchial passages with a diameter of less than 2 mm, positioned beyond the 7th or 8th generation of the tracheobronchial tree. The involvement of small airways disease (SAD) has significant implications for asthma control, severity, and the risk of exacerbations. The evaluation of the impact of small airways disease on severe asthma is hindered by the absence of a practical gold-standard measure for the small airways. Nonetheless, numerous published studies utilize surrogate markers, such as physiologic assessments and imaging techniques, to implicate small airways dysfunction in heightened symptoms, exacerbation risk, and asthma severity. The diagnosis of SAD can be done using several techniques, including spirometry, plethysmography, nitrogen washout, impulse oscillometry, and cross-sectional imaging. Patients with SAD seem to benefit from inhaled medications that possess ultrafine particles capable of reaching the distal airways effectively. When designing treatment strategies, the extent of SAD involvement and the use of devices with optimized particle delivery to the small airways should be taken into consideration.

S5A – Airway Disease

WHAT TO DO WITH EARLY COPD

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COPD is often diagnosed late in real-life clinical practice. As a result, most patients could have lost 50% of their lung function at the time of diagnosis. Despite recent advances achieved in its medical treatment, the disease still carries significant morbidities at this late stage. Hence, it is crucial to find ways to identify COPD as early as possible. Notwithstanding, early COPD is often assumed to be interchangeable with mild COPD. This assumption is not often correct as we now understand that not every COPD patient started their journey of decline from normal peak lung function.

Recent discoveries in cellular and molecular medicine have allowed us to gain better insights into the pathological lung changes in early COPD before it becomes clinically evident. With continuous development in this field, it is not unforeseeable that we may one day identify early changes of COPD in susceptible individuals and thus enable us to halt its progression with some novel agents, alongside with smoking cessation.

S5A – Airway Disease

PULMONARY REHABILITATION IN COPD

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Pulmonary rehabilitation improves symptoms, quality of life, pulmonary function, health care utilization, and may improve survival in patients with COPD. The Global Initiative for Chronic Obstructive Disease suggests that pulmonary rehabilitation be included in the management of patients with chronic obstructive pulmonary disease (COPD) who are symptomatic with functional limitations and suffering from moderate or severe exacerbations. Contraindications to pulmonary rehabilitation are infrequent, but include conditions that would place the patient at increased risk during exercise or present obstacles to participation. Prior to participation in a pulmonary rehabilitation program, each patient is assessed individually for severity of respiratory impairment, exercise tolerance, presence of comorbidities and cognitive-language-psychosocial problems. Program component include patient education, exercise therapy, functional activities, symptoms and stress coping strategies, work hardening and alternative regimens (e.g Qi Gong).

S5B – Critical Care

HFNC IN "POST-COVID ERA"

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High-flow nasal cannula (HFNC) is a respiratory support device, which is used early in management of acute respiratory failure alongside with conventional oxygen therapy and non-invasive ventilation (NIV). The benefits of HFNC are on both aspects of physiological and clinical. It can provide high oxygen concentration to the patient with additional benefit of alveolar recruitment, humidification and heating, increased secretion clearance and reduction of dead space. Many patients like it because of comfort and ease of use.

HFNC is used widely among COVID-19 patient with the above benefits. It can delay intubation and very useful during resource constraint situation such as during COVID-19 pandemic. Among the concern in using non-invasive respiratory support to the COVID-19 is exhale excursion which create the potential risk to healthcare workers. Some studies have shown that the risk of excursion is lower in HFNC compared to NIV however it need to be verified in more major trials

Post pandemic HFNC is still widely used in many clinical areas such Emergency Department, ward, Intensive Unit and other critical areas. HFNC is incorporated in many invasive mechanical ventilator. It can be used early in management of ARF and able to delay or avoid intubation in many cases. It is also very useful as a weaning tool post extubation especially among patients who have high risk of extubation failure. Currently HFNC is being widely used in acute hypoxaemic respiratory failure and also been assessed in acute hypercapnic respiratory failure. More works are required to expand the usage in other clinical condition of patients.

S5B – Critical Care

IMAGING ADVANCES IN ARDS EVALUATION

Sujal Desai
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Acute respiratory distress syndrome (ARDS) is a non-specific yet catastrophic response of the lung to 'injury' — the nature of the injury varies but is a consequence of a direct insult (for instance, severe pneumonia) or an indirect effect (e.g. systemic sepsis, non-thoracic trauma). On histopathological examination, there is a stereotypical, overlapping sequence of changes in the lung culminating in the flooding of the lung with inflammatory oedema fluid and the formation of classical hyaline membranes; fibrosis of variable severity is part-and-parcel of the normal sequelae of ARDS. It is important to stress that the diagnosis of ARDS is made on *physiological criteria* (namely the PaO_2/FiO_2 ratio) with clinical features and imaging tests (CXR/CT) in a 'supporting' diagnostic role. That said, CT appearances in ARDS broadly fall into one of two groups: i) symmetrical airspace opacification with a gradient of increasing density from ventral to dorsal lung or ii) a more random distribution of increasing lung density with non-dependent foci of consolidation. Furthermore, detailed studies of CT appearances in concert with clinical and physiological abnormalities has provided valuable pathophysiological and prognostic insights.

S5B – Critical Care

EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO)

Suneta Sulaiman
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Extra Corporeal Membrane Oxygenation (ECMO) has made much progress over recent years. It has become an invaluable tool in the care of patients with severe cardiac and pulmonary failure refractory to conventional medical management. ECMO treatment has become more reliable with advanced equipment and technology, better patient monitoring and improved experience and understanding, which is reflected in improved results. Moreover, ECMO indications are extended to prolonged use in intensive care unit, such as bridge to transplant, for both cardiac and lung transplant and support for lung resections in unstable patients. According to the Extracorporeal Life Support Organization **(**ESLO) registry, ECMO was used in less than 5,000 cases prior to 2010 compared to 18,000 cases in 2021. In 1990, ECMO was initially started in 83 centers; those numbers increased to 492 centers by 2020. The immense increase of patients treated with ECMO and the vast expansion to its indications raises opportunity to expand the training and services to incorporate more ECMO centers especially within the country.

An ECMO machine consists of a pump with an oxygenator that replaces similar functions of the heart and lung, respectively. Therefore, the primary purpose of ECMO is to give these organs time to rest and recover. Veno-venous ECMO (VV ECMO) provides respiratory support, whereas veno-arterial ECMO (VA ECMO) provides cardio-respiratory support.

ECMO should only by performed by clinicians with training and experience in its initiation, maintenance, and discontinuation. ECMO is a supportive therapy rather than a disease modifying treatment in itself. However, the determining factor of ECMO treatment success lies fundamentally in the right patient selection. The indications and patient selection, technical aspects including types and configuration of the ECMO circuit, complications and impact of ECMO on clinical outcomes will be discussed in the session. Additionally, few areas of importance that gives rise to better clinical outcomes will also be highlighted and discussed.

S5C – Home Non-invasive Ventilation

NIV DEPENDANT CHILD…WHEN TO REFER PAEDIATRIC RESPIRATORY PHYSICIAN

Anna Marie Nathan
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There is an exponential increase in the use of non-invasive ventilation (NIV) and invasive-ventilation in children globally. The lack of accessibility to Paediatric Respiratory Physicians, high cost to provide this treatment and huge burden of care to the families, are issues in Malaysia that hinder the early and efficient provision of this service.

Any child who requires respiratory support after about 2-4 weeks of being in a stable clinical state, without any acute diseases that need treatment should be considered for home NIV.

LT-NIV is considered for conditions that affect respiratory-muscle performance (alterations in central respiratory drive or neuromuscular function) and/or impose an excessive respiratory load (airway obstruction, lung disease, or chest-wall anomalies).

The following is a list of respiratory diseases and recommended respiratory support

1. Lung parenchymal disease (e.g. bronchopulmonary dysplasia, chILD, severe bronchiectasis: oxygen ± NIV

2. Neuromuscular disease(e.g. Duchenne's muscular dystrophy, Spinal Muscular Atrophy): NIV
3. Alveolar hypoventilation (e.g. severe kyphoscoliosis, spondylothoracic dysplasias , post-severe pneumonia): NIV
4. Upper airway obstruction (e.g. Down syndrome, Craniosynostosis, Pierre Robin): CPAP
5. Lower airway obstruction (e.g. tracheobronchomalacia, post-infectious bronchiolitis obliterans, vascular ring) : CPAP/NIV ±oxygen
6. Central hypoventilation (e.g. Congenital Central Hypoventilation Syndrome): tracheostomy+ ventilator

Relative contraindications for home NIV include the inability of the local medical infrastructure to support home NIV and poor motivation or inability of the patient/caregivers to cooperate or understand recommendations. Anatomic abnormalities that interfere with interface fitting, inability to protect the lower airways due to excessive airway secretions and/or severely impaired swallowing, or failure of LTNIV to support respiration can lead to considering invasive ventilation via tracheostomy

Conclusion: General paediatricians need to learn how to identify patients who will benefit from home NIV as the hospital is not a suitable place for a child to grow in.

S5C – Home Non-invasive Ventilation

HOME NIV FOR ADVANCED CHRONIC LUNG DISEASE

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The advancement of medical science and supportive care options, particularly during early-life treatment, has increased the number of children surviving critical illnesses with multiple co-morbidities. These children with complex disorders will increasingly be started on long-term home NIV as part of transitioning from hospital to home. Long-term home NIV is an accepted therapy for advanced chronic lung disease or chronic respiratory insufficiency. NIV can support respiratory hypoventilation by delivering a positive pressure or volume during the patient's inspiration or by relieving obstruction during obstructive sleep-disordered breathing. NIV may be used during acute illnesses in these complex children during an emergency, as earlier use of NIV may help avoid intubation or escalation of care or the need for a tracheostomy for long-term invasive ventilation. While long-term home NIV is usually delivered during sleep, it can also be given 24 hours a day in selected patients. The decision about whether long-term NIV is appropriate for an individual child and their family must be made with care. Close collaboration between the hospital complex-care team, the home NIV program, and family caregivers is paramount for successful long-term home NIV. Strict and comprehensive education and training programmes must involve multi-disciplinary approaches and careful planning to prepare parents for the transition from hospital to home.

S5C – Home Non-invasive Ventilation

TECHNOLOGY ADVANCES IN HOME NIV MONITORING

Heather Elphick
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The use of NIV to improve mortality and morbidity in children with complex medical conditions has been well-established since the 1980s. A survey of NIV usage in the UK in 2019 identified a 2.5-fold increase in the use of NIV for children in the last 10 years, with a move towards more children using mask ventilation and fewer using tracheostomy, an increase in children with conditions such as OSA requiring ventilation and more than 95% children being managed at home. Demand for home monitoring exceeds the resources available and therefore incorporation of technology into the clinical pathway has the potential to improve patient outcomes.

Modern ventilators include in-built hardware and software that can collect and transmit data to the cloud for clinicians to access. The reliability and the extent to which they influence clinical outcomes for children has yet to be demonstrated in large multicentre studies.

This presentation will review the technologies available, including built-in ventilator monitoring systems, tele-monitoring systems and platforms and portable home sleep monitoring devices. The evidence for home telemonitoring in children will be discussed as well as the potential implications for clinical use, research objectives and the cautions and barriers to widespread implementation.

S7A – Meet the Expert II

HOW DO I MANAGE HOME NIV

Soo Chun Ian
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With the increasing prevalence of chronic respiratory conditions, the use of NIV has become a vital therapeutic approach to improve patient outcomes and quality of life. Home-based NIV allows patients to receive continuous respiratory support in the comfort of their own homes, reducing the burden of hospital visits and promoting patient autonomy. Respiratory physicians play a crucial role in the effective management of NIV at home, providing comprehensive assessment, appropriate device selection, personalized settings, and ongoing monitoring.

S7A – Meet the Expert II

EVALI: HOW DO I MANAGE

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It is believed that e-cigarette entered Malaysian market in 2000 and gained popularity in 2010s. The number of e-cigarette users almost was estimated to be 1.1 million based on National Health and Morbidity Survey 2019.

Middle of 2019, several cases of acute and subacute lung injury caused by e-cigarette use were reported in the USA.
The number of cases increased within a short period of time, leading to the Center of Disease Control and Prevention of the USA announcing EVALI outbreak in September 2019. The conditions were serious as patients had to be admitted and, in some cases, ventilated. There were casualties as well. By Feb 2020, more than 2800 cases with 68 deaths were reported to CDC from all over the USA. Sporadic cases were also reported outside USA and Malaysia is not exempted. At the end of 2019, early 2020, Malaysia had 2 cases of probable EVALI.

The diagnosis of EVALI, is made based on 2019 Lung Injury Surveillance Primary Case Definitions outlined by the United States Center for Disease Control and Prevention. The 2 main components of the case definition are exposure to e-cigarette use and abnormal finding on imaging examination. Up to date, EVALI is treated symptomatically. Systemic corticosteroids may be used in severe cases. Several regimens have been used tailoring to severity of illness.

S7A – Meet the Expert II
AGING LUNGS

Tunku Muzafar Shah Tunku Jaafar
Hospital Selayang, Selangor, Malaysia

Acute and chronic lung diseases disproportionately affect older people with significant mortality and morbidity from limiting dyspnoea, immobilisation and isolation. Respiratory infections are a leading cause of death from any infectious aetiology among older people with upwards of 80% of deaths from pneumonia occurring in the elderly. Pneumonia consistently ranks 2nd as a cause of death after ischaemic heart disease in Malaysia. We anticipate much more acute and chronic lung diseases with greater severity with an ageing population. Hence it is worthwhile revisiting the changes that occur in an ageing lung to better understand and manage pulmonary conditions in the elderly with an emphasis on infections/pneumonia.

S7B – Advances in Respiratory Medicine
SLIT THERAPY IN ASTHMA

Kent Woo Chee Keen
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Asthma is a chronic respiratory condition affecting millions of individuals worldwide. Traditional management primarily relies on pharmacological interventions, leading to substantial healthcare expenditures. In recent years, sublingual allergen-specific immunotherapy (SLIT) has emerged as a promising therapeutic approach, offering not only clinical efficacy but also economic benefits. This talk aims to highlight the economic advantages of SLIT, its potential in asthma prevention, and its role in reducing medication use.

The economic burden associated with asthma is a significant concern for healthcare systems globally. Asthma-related healthcare costs include physician visits, emergency department visits, hospitalizations, and medication expenses. By addressing the underlying immunological mechanisms of asthma, SLIT has the potential to reduce asthma-related healthcare costs significantly. Studies have demonstrated that SLIT can modify the natural course of the disease, resulting in a decreased reliance on symptom-relief medications such as bronchodilators and inhaled corticosteroids.

Moreover, SLIT has shown promise in asthma prevention. Early intervention with SLIT in patients with allergic rhinitis, a common precursor to asthma, has been associated with a reduction in the development of asthma. By targeting the underlying allergic response, SLIT can modify the immune system's response to allergens, potentially halting the progression from allergic rhinitis to asthma. This preventive aspect of SLIT not only improves patient outcomes but also has a considerable economic impact by reducing the long-term healthcare costs associated with managing established asthma cases.

Furthermore, SLIT offers the potential to reduce the frequency and severity of asthma exacerbations, thereby decreasing the need for rescue medications, hospitalizations, and emergency department visits. The MITRA

trial demonstrated a reduction in asthma exacerbation rates in patients receiving SLIT. Sublingual allergen-specific immunotherapy represents a promising therapeutic approach for asthma management. This talk will also address the art and science of incorporating SLIT into clinical practice.

S7B – Advances in Respiratory Medicine

DUAL-ENERGY CT OF THE LUNG – PEARLS AND PITFALLS

Mohammad Hanafiah Kreah
Sunway Medical Centre, Selangor, Malaysia

Dual-energy CT imaging is a technique that extends the capabilities of CT beyond that of established densitometric. CT pulmonary angiography (CTPA) performed with dual-energy technique benefits from both the availability of low kVp CT data and also the concurrent ability to quantify iodine enhancement in the lung parenchyma. Parenchymal enhancement, presented as pulmonary perfused blood volume maps may be considered as a surrogate of pulmonary perfusion. Dual-energy CT has the advantages of MDCT and can provide functional information for patients with PE. Recognizing various causes of artefactual perfusion defects associated with DECT is necessary for appropriate and accurate interpretation of the results of this increasingly important imaging tool.

S7B – Advances in Respiratory Medicine

CBCT GUIDED LUNG NODULE BIOPSY

Abdul Hamid Alraiyes
Advocate Lutheran General Hospital, Illinois, USA

Why do we need to use Real-time imaging with Robotic Bronchoscopy
Real Time Imaging
ABCD rule for Robotic Bronchoscopy / Real Time Imaging
3D portable CBCT
O arm
Fixed CBCT

S7C - Medley

SCOLIOSIS AND RESPIRATORY COMPLICATIONS

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Scoliosis is caused by the lateral displacement and rotation of the vertebral bodies. The prevalence of scoliosis in children and adolescents ranges from 0.19% to 11.03%. It can be congenital, secondary to a systemic or neuromuscular disorder, or most commonly idiopathic. The majority of scoliosis cases are categorized under idiopathic scoliosis with the mean age of presentation at 10 years old.

Scoliosis generally is known to cause restrictive lung disease. The decrease in lung volume is multifactorial, based on the severity of scoliosis (Cobb angle), the location of the scoliosis, and the loss of normal thoracic kyphosis. Other respiratory complications may be due lung hypoplasia, poor lung compliance following rib cage abnormality with evidence of hypoventilation, mechanical airway obstruction to the bronchus, airway hyper responsiveness as well as sleep disordered breathing.

Restrictive lung disease manifested by a reduction in the total lung capacity is characteristic of severe scoliosis. In children, usually a spirometry is performed, resulting in a decrease in FEV1 and FVC, resulting in a normal FEV1/FVC ratio. Pulmonary function testing is particularly used preoperatively to predict the incidence of post-operative pulmonary complications. Management is in the form of observation, bracing, physiotherapy and surgery is offered to patients based on location of the scoliosis, the severity of it, if the patient has any symptoms and if the child or teen is still growing.

Overall scoliosis causes a debilitating deformity of the thoracic cage and potentially leads to severe and irreversible effects on lung function. Early recognition of the problem and regular evaluation is important to manage the patient.

S7C - Medley

MONITORING OF PULMONARY TB IN CHILDREN

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Once a child is diagnosed with Tuberculosis, appropriate anti-Tuberculosis (anti-TB) therapy must be started after counselling the parents. The duration of anti-TB depends on the site and severity of TB disease. The child must be monitored during therapy for several reasons. Firstly, monitoring the progress of TB disease after treatment started. Secondly, recognizing the failure of treatment that indicates the need for a change in treatment strategy. Thirdly, early detection of anti-TB side effects. Fourthly, ensure adherence to Anti-TB therapy to prevent treatment failure and resistant TB.

Upon completion of Anti-TB therapy, children with TB must have regular follow up. Firstly, TB disease may have sequelae that need regular follow-ups like lung parenchymal damage, brain damage, bone or joint impairment etc. Secondly, all cured TB children are at risk for relapse of TB. Follow-up to 12 months post-therapy is recommended if no other permanent damage is recognized.

S7C - Medley

APPROACH TO AN OXYGEN DEPENDANT CHILD

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The mechanism of hypoxaemia can be either due to alveolar ventilation/pulmonary perfusion mismatch, right to left shunt, impaired diffusion of gases in the alveolocapillary membrane, hypoventilation, and decreased inspired oxygen. Low Sp02 for a duration of > 2 weeks, in otherwise clinically stable patient, may suggest chronic hypoxaemia; they may require long term oxygen therapy. In children with chronic hypoxaemia/oxygen-dependent, it is important to understand possible mechanisms and find underlying cause to guide on further management. The approach to this problem will be discussed.

ORAL PRESENTATIONS

OP 1	**UNDERSTANDING THE DETERMINANTS OF TUBERCULOSIS TREATMENT OUTCOMES IN ADOLESCENTS AND YOUNG ADULTS WITHIN THE KLANG VALLEY** **Z.Sanusi [1],** U.N.Daut[1]. *[1]Department of Medicine, Hospital Sultan Abdul Aziz Shah - Serdang (Selangor) (Malaysia)*	**55**
OP 2	**THE UTILITY OF TOTAL SLEEP TIME WITH SATURATION BELOW 90% (T90) IN PREDICTING RESPIRATORY FAILURE AMONG OBSTRUCTIVE SLEEP APNEA PATIENTS** **Nga Hung Ngu,** Sze Kye Teoh, Chan Sin Chai, Swee Kim Chan, Sze Shyang Kho, Mei Ching Yong, Siew Teck Tie *Division of Respiratory Medicine, Department of Medicine, Sarawak General Hospital, Kuching, Sarawak, Malaysia*	**56**
OP 3	**DOES DOSE REDUCTIONS OF AFATINIB AFFECT OUTCOMES OF PATIENTS WITH METASTATIC NON-SMALL-CELL LUNG CANCER IN REAL WORLD CLINICAL PRACTICE?** **Sin Nee Tan[1]**, Soon Hin How[1,2], Chong Kin Liam[3], Chee Shee Chai[4], Harissa H Hasbullah[4,5], Lye Mun Tho[6], Gwo Fuang Ho[7], Ibtisam Muhamad Nor[5], Yong Kek Pang[3], Kean Fatt Ho[8], Muthukkumaran Thiagarajan[5], Azlina Samsudin[9], Azza Omar[10], Choo Khoon Ong[11], Sing Yang Soon[12], Mau Ern Poh[3] *1 Hospital Tengku Ampuan Afzan, Kuantan, Pahang* *2 Kulliyyah of Medicine, International Islamic University Malaysia, Kuantan, Pahang* *3 Department of Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur* *4 Faculty of Medicine, Universiti Teknologi Mara, Sungai Buloh, Selangor* *5 Oncology and Radiotherapy Department, General Hospital Kuala Lumpur, Kuala Lumpur* *6 Department of Clinical Oncology, Beacon Hospital, Petaling Jaya, Selangor* *7 Clinical Oncology Unit, Faculty of Medicine, University of Malaya, Kuala Lumpur* *8 Mount Miriam Cancer Hospital, Penang* *9 Hospital Sultanah Nur Zahirah, Kuala Terengganu, Terengganu* *10 Respiratory Unit, Medical Department, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan* *11 Gleneagles Hospital, Penang* *12 Sarawak Heart Centre, Kuching, Sarawak*	**57**
OP 4	**PERFORMANCE OF RADIAL ENDOBRONCHIAL ULTRASOUND FOR PERIPHERAL PULMONARY LESIONS WITHOUT AUTOMATION TECHNOLOGY IN TUBERCULOUS ENDEMIC REGION: A SIX-YEAR REGISTRY BASED RETROSPECTIVE COHORT STUDY** **Kho Sze Shyang,** Chai Chan Sin, Ngu Nga Hung, Yong Mei Ching, Chan Swee Kim, Tie Siew Teck *Division of Respiratory Medicine, Department of Medicine, Sarawak General Hospital, Ministry of Health Malaysia, Kuching, Sarawak, Malaysia.*	**58**
OP 5	**LOWER RESPIRATORY TRACT INFECTIONS DURING THE FIRST TWO YEARS OF PREMATURE NEWBORNS: A PROSPECTIVE COHORT STUDY IN A TERTIARY CHILDREN HOSPITAL** Asiah Kassim[1], **Sze Chiang Lui[1]**, Eunice Gui Yu Lee[1], N Fafwati Faridatul Akmar Mohamad [1], Shangari Kunaseelan[1], Yi Cheau Chua[1], Yee Yen Tan[1], Maria Kamal[1], Lai Cheng Hooi[1], Hui Ling Leong[1], Sin Toun Loh[1], Ker Yang Chua[1], Farah Inaz Syed Abdullah[1], Farizah Mohd Hairi[2], Hafizah Zainuddin[3], Siew Hong Neoh[1] 1. *Hospital Tunku Azizah, Kuala Lumpur, Malaysia.* 2. *University of Malaya, Kuala Lumpur, Malaysia.* 3. *Universiti Sultan Zainal Abidin (UNISZA), Terengganu, Malaysia*	**59**
OP 6	**BRONCHOARTERIAL RATIO IN CHILDREN WITHOUT PULMONARY PATHOLOGY IN UNIVERSITY OF MALAYA MEDICAL CENTRE** **Hui May Hoo[1],** Kah Peng Eg[2], Caroline Judy Westerhout[1], Anna Marie Nathan[2], Jessie Anne de Bruyne[3] *[1]Department of Diagnostic Imaging, University of Malaya, Kuala Lumpur, Malaysia* *[2]Department of Pediatrics, University of Malaya, Kuala Lumpur, Malaysia* *[3]Department of Pediatrics, University of Malaya Medical Centre, Kuala Lumpur, Malaysia*	**60**

OP 1

UNDERSTANDING THE DETERMINANTS OF TUBERCULOSIS TREATMENT OUTCOMES IN ADOLESCENTS AND YOUNG ADULTS WITHIN THE KLANG VALLEY

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Introduction: Due to limited literature, understanding and addressing risk factors for unfavourable TB treatment outcomes in young adults and adolescents are hindered. This study aims to identify these risk factors.

Methods: A total of 817 TB patients were screened at Hospital Serdang's Respiratory Clinic using an electronic patient and TB system. Our study included 120 patients from January 2020 to December 2022, meeting the inclusion criteria of being TB patients aged 12-24 who were confirmed cases and received treatment as either inpatients or outpatients. The outcomes assessed were treatment completion, complications, and mortalities. Statistical significance was defined as $p < 0.05$.

Results: 39 patients defaulted treatment, 19 patients developed complications and 5 patients died while in therapy. Out of 120 patients, 73 had favourable outcomes. Study reported that non-Malaysians had higher risk of treatment interruptions. Study also reported that there were significant associations in Directly Observed Treatment, Short course (DOTS) in intensive and maintenance phase with mortality and treatment interruptions. Those who adhered to DOTS have lower risk of mortality and lower risk of treatment interruptions. Multivariate analysis shows that duration of treatment and BCG vaccination can be good predictors for mortality and treatment interruptions.

Conclusion:
DOTS during therapy and its supervision, regimen decision prior to ATT initiation, and BCG vaccinations are crucial for determining unfavourable outcomes in TB treatment among adolescents and young adults. DOTS is highly successful and effective, serving as the mainstay of TB treatment, while BCG vaccination provides significant protection against tuberculosis.

Keywords: Tuberculosis, Adolescents, Mortality, Complications, DOTS

OP 2

THE UTILITY OF TOTAL SLEEP TIME WITH SATURATION BELOW 90% (T90) IN PREDICTING RESPIRATORY FAILURE AMONG OBSTRUCTIVE SLEEP APNEA PATIENTS

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Introduction: Although the severity of obstructive sleep apnea (OSA) is based on the apnea hypopnea index (AHI), patients with similar AHIs may demonstrate widely varying comorbidities. As the percentage of cumulative time with oxygen saturation below 90% in total sleep time (T90) describes the duration of nocturnal hypoxia, it might contribute to the assessment of OSA related complications, especially respiratory failure.

Objective: To investigate T90's predictive value for respiratory failure among OSA patients.

Method: A prognostic study utilizing data from case records of OSA patients from the Respiratory

Clinic between 2017 and 2023. The determinants studied including sleep study parameters, comorbid, and demography. Outcome of interest is respiratory failure that leading to hospitalization among OSA patients.

Results: A total of 428 patients with mean age of 47.5 (SD 13.99) years were recruited. Majority (68.5%) had severe OSA (AHI>30). The median T90 was 25% (IQR 7-63) and Oxygen Desaturation Index (ODI) was 44 (IQR 27-63). Total 106 patients (24.8%) had hospitalization history for respiratory failure. After adjusting for confounders, a higher T90 is an independent risk factor for respiratory failure among OSA patients (OR 1.05, 95% CI 1.04-1.06, $p<0.001$). A T90 cut-off value of 40.5% can predict respiratory failure with a sensitivity of 79.0% and specificity of 74.9%. This study showed that T90 is a better predictor for respiratory failure compared to AHI and ODI (AUC 0.852 vs. 0.630 vs. 0.678, $p<0.001$).

Conclusion: A T90 value of 40.5% can predict respiratory failure among OSA patients with moderate sensitivity and specificity. T90 has better predictive value for respiratory failure compared to AHI and ODI.

OP 3

DOES DOSE REDUCTIONS OF AFATINIB AFFECT OUTCOMES OF PATIENTS WITH METASTATIC NON-SMALL-CELL LUNG CANCER IN REAL WORLD CLINICAL PRACTICE?

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Introduction
In 2020, the World Health Organization estimated that globally, lung cancer was the second most common cancer (2.21 million cases) and the leading cause of cancer death (1.80 million deaths). The study aimed to assess the efficacy of lower doses of afatinib on treatment outcomes and survival of patients with non-small-cell lung cancer (NSCLC) in real world clinical practice.

Methods
This was a retrospective study of patients with NSCLC from 18 major hospitals enrolled in Malaysia's National Cardiovascular and Thoracic Surgical Database (NCTSD). Data on clinical characteristics, afatinib dosing, and treatment outcomes for patients included in NCTSD between 1st January 2015 and 31st December 2020 were collected.

Results
Of the 133 patients in the study, 94.7% had adenocarcinoma. Majority of the patients (60.9%) had epidermal growth factor receptor (EGFR) exon 19 deletion and 23.3% had EGFR exon 21 L858R point mutation. The mean age of patients was 64.1 years and the majority (83.5%) had Eastern Cooperative Oncology Group performance status scores 2–4 at diagnosis. The 40 mg (37.6%), 30 mg (29.3%), and 20 mg (26.3%) were the most common afatinib starting doses. A quarter of patients had dose changes (23.3%) due to side effects, cost constraints, or other reasons. Half of the patients in the study had objective response (57.9%). The objective response rate was significantly higher (79.7%) for doses of less than 40 mg dose compared to 40 mg or higher (48.9%) (p=0.001). Median time to treatment failure (95% CI) was 11.2 (8.67–13.54) months. Median overall survival was 12.0 (7.6–16.4) months and median duration of survival was 21.0 (18.3–23.7) months.

Conclusions
Lower afatinib doses (<40 mg) resulted in good response and survival rates in patients with EGFR-mutant advanced NSCLC. Individualized titration of dosage of afatinib is recommended to optimize the balance of risk and benefit.

OP 4

PERFORMANCE OF RADIAL ENDOBRONCHIAL ULTRASOUND FOR PERIPHERAL PULMONARY LESIONS WITHOUT AUTOMATION TECHNOLOGY IN TUBERCULOUS ENDEMIC REGION: A SIX-YEAR REGISTRY BASED RETROSPECTIVE COHORT STUDY

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Introduction Peripheral pulmonary lesions (PPL) in regions with high tuberculosis incidence present a unique diagnostic challenge, as tuberculous PPL can mimic malignant lesions and potentially delay diagnosis for both conditions without a confirmatory investigation. While bronchoscopic biopsy using radial endobronchial ultrasound (rEBUS) guidance is becoming more common among pulmonologists, it is often performed with additional automation technology such as virtual bronchoscopic and electromagnetic navigation. This study aimed to evaluate the performance of rEBUS without such automation technology over a six-year period in our institution.

Methods Retrospective chart review of all adult patients undergoing rEBUS-guided transbronchial biopsy for PPL in our institution over six years duration (October 2016 to December 2022).

Result 551 PPLs were included with median target lesion size of 2.70 (IQR 2.10-3.70) cm with majority (57.7%) of lesions located in the upper lobes. 84.2% of lesion demonstrated direct bronchus sign with 46.3% demonstrated concentric rEBUS orientation. The overall diagnostic yield was 78.8%, with 1.1% rate of pneumothorax. Among the conclusive cases, 62.7% were malignant while 37.3% were tuberculosis. Bronchus sign (adj. OR 2.268) and concentric rEBUS orientation (adj. OR 3.426) are independent predictor for conclusive procedure. The sensitivity of rEBUS for malignant and tuberculous disease was 85.27% (95% CI 80.89-88.97) and 71.77% (95% CI 62.99-79.49) respectively. There was a significant improving trend of diagnostic yield over time with reduction of median target size over years with introduction of new technology into the service such as cryobiopsy and thin bronchoscopy.

Conclusion rEBUS without automation technology remain relevant and useful in this era. In tuberculous endemic regions, rEBUS provides a rapid and safe diagnosis of PPL which may translate into better patient care.

OP 5

LOWER RESPIRATORY TRACT INFECTIONS DURING THE FIRST TWO YEARS OF PREMATURE NEWBORNS: A PROSPECTIVE COHORT STUDY IN A TERTIARY CHILDREN HOSPITAL

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Introduction

Premature newborns are at increased risk of lower respiratory tract infections (LRTI) and complications.

Objective

To determine the frequency of LRTI and its risk factors during the first two years of life of a premature newborn.

Methodology

A prospective observational study on premature newborns delivered (25+0 to 33+6 gestational weeks) from 1st July 2020 to 31st July 2021 in a tertiary children's hospital.

Results

We recruited 358 premature newborns (mean birth weight of 1567.4±5.4 g and mean gestational age of 31.1 ±2.4 weeks): 12% extremely preterm, 38.5% very preterm and 49.4% moderate to late preterm. The mortality rate was 8.9%, and 16% developed bronchopulmonary dysplasia. Among 293 infants followed up until one year old, 44 (15%) had LRTI with the highest respiratory support of intubation (4), non-invasive ventilation (NIV, 8) and oxygen therapy (31), respectively. Among 272 children followed up till two years old, 56 (20.6%) developed LRTI in the past year and needed the highest respiratory support of intubation (5), NIV (9) and oxygen therapy (28). Extreme and very preterm had a higher risk of developing LRTI at two years old than moderate and late preterm (p=0.043). Other factors found insignificant were birth weight, bronchopulmonary dysplasia, intubation at birth and oxygen dependency. Thirty-six children (10.1%) developed recurrent pneumonia in the first two years of life.

Conclusion

LRTI and recurrent pneumonia were complications of premature newborns, and the severity of prematurity was the identified risk factor for developing LRTI at two years old.

(293 words)

OP 6

BRONCHOARTERIAL RATIO IN CHILDREN WITHOUT PULMONARY PATHOLOGY IN UNIVERSITY OF MALAYA MEDICAL CENTRE

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Introduction: The current gold standard for diagnosing bronchiectasis (airway dilatation) is through a chest high-resolution CT (HRCT) scan. In adults, airways are considered dilated when there is increased bronchoarterial ratio (BAR) of >1. However, there is no universally accepted cut-off value for BAR in defining paediatric bronchiectasis.

Objectives: This study aimed to determine the BAR in children without pulmonary pathology and to suggest a cut-off value to define paediatric airway dilatation. The relationship between the BAR and different age group was also examined.

Methodology: All chest HRCT and non-HRCT scans conducted in children <18 years from July 2011 to May 2022 in UMMC were retrospectively screened. Exclusion criteria were chronic cough >4 weeks, cardiopulmonary conditions, insufficient inspiration and artifacts. Images were viewed online using the hospital radiologic software system with 3X magnification. BAR was calculated from the measurements of the inner diameter of a bronchus and the luminal diameter of accompanying artery.

Results: A total of 1652 paediatric chest CT scans were screened. BARs were derived from the CT images of 148 (66.2% non-HRCT) eligible children. The mean age was 8.4 years. The mean BAR was 0.506±0.091 with an upper limit of 0.688. There was no difference in the ratio between HRCT and non-HRCT images. Children aged ≤11 years had a significantly lower BAR compared to the adolescents >11 years.

Conclusions: A lower threshold BAR value of 0.7 is recommended to diagnose paediatric bronchiectasis. Early diagnosis and appropriate management improve outcomes.

THEMATIC ORAL PRESENTATIONS (ADULT)

OPA1	**ADENOSINE DEAMINASE DIAGNOSTIC PERFORMANCE FOR TUBERCULOUS PLEURAL EFFUSION** **Chen Yong Tan[1],** Zamzurina Abu Bakar[1] *[1]Institute of Respiratory Medicine, Kuala Lumpur, Malaysia*	**63**
OPA2	**DESCRIPTIVE STUDY OF ADVERSE DRUG REACTIONS IN BETWEEN TWO ANTI TUBERCULOSIS FIX DOSED DRUG IN MALAYSIA - A SINGLE CENTRE REVIEW, INSTITUT PERUBATAN RESPIRATORI** **Mohd Zhafran Zainal Abidin[1,2],**Shanggavi Nadarajan[2],Sandeep Ruben Singh Mangat[2], Zamzurina Abu Bakar[2] *[1] Fakulti Perubatan Universiti Teknologi MARA (UiTM) Sungai Buloh Selangor, [2]Institut Perubatan Respiratori, Kuala Lumpur*	**64**
OPA3	**SOCIO-DEMOGRAPHY AND TREATMENT OUTCOMES OF MULTIDRUG RESISTANT TUBERCULOSIS AT A TERTIARY CENTER IN NORTHERN MALAYSIA** **Kughanishah Jeyabalan**, Loi Lai Hing, Chan Tha A Hing, Arvindran Alaga *Respiratory Department, Hospital Sultanah Bahiyah, Kedah, Malaysia*	**65**
OPA4	**WHAT IS THE CLINICAL SIGNIFICANCE OF INDETERMINATE RIFAMPICIN RESISTANT XPERT MTB/RIF ULTRA RESULT?: A RETROSPECTIVE STUDY** **Afifah Kamarudin[1]**, Xiang Ying Lee[1], Nor Zanariah Zainol Abidin[2], Raymund Dass[1], Han Loong Tan[1] *[1] Respiratory Unit, Department of Internal Medicine, Hospital Tuanku Ja'afar Seremban, Malaysia* *[2] Microbiology Unit, Department Of Pathology, Hospital Tuanku Ja'afar Seremban, Malaysia*	**66**
OPA5	**THE OUTCOME OF LONG-COURSE ORAL CORTICOSTEROIDS IN COVID-19-RELATED DIFFUSE INTERSTITIAL LUNG ABNORMALITIES** **Ng Boon Hau[1]**, Mohd Imree Azmi[2], Nik Nuratiqah Nik Abeed[1], Hsueh Jing Low[3], Mas Fazlin Mohamad Jailaini[1], Azat Azrai Azmi[1], Shahizon Azura Mohamed Mukari[2], Mohamed Faisal Abdul Hamid[1], Andrea Ban Yu-Lin[1] *1. Respiratory Unit, Department of Medicine, Hospital Canselor Tuanku Muhriz, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia* *2. Radiology Department, Hospital Canselor Tuanku Muhriz, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia* *3. Department of Anaesthesiology, Hospital Canselor Tuanku Muhriz, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*	**67**
OPA6	**MENTAL HEALTH STATUS AMONG HOSPITAL STAFF IN A TERTIARY HOSPITAL DURING THE COVID-19 PANDEMIC** **Fatimah Az Zaharah Suhaimi[1]**, Maria Kamal[1], Lui Sze Chiang[1], Fauziah Ripin @ Mat Nor[1], Farhana Mohd Amiruddin[2], Siti Nurul Aimi Mohamad[2], Shamsul Anuar[3], Muhammad Kaysful Azim Yahya[3], Ramli Mohd Ali[2], Anita Codati[2], Asiah Kassim[1] *1. Clinical Research Centre, Hospital Tunku Azizah, Kuala Lumpur, Malaysia.* *2. Psychiatry Department, Hospital Tunku Azizah, Kuala Lumpur, Malaysia.* *3. Director Office, Hospital Tunku Azizah, Kuala Lumpur, Malaysia.*	**68**
OPA7	**A RETROSPECTIVE STUDY OF CLINICAL PRESENTATION, TREATMENT OUTCOMES AND DISEASE COURSE IN SARCOIDOSIS PATIENTS AT A TERTIARY CENTRE** **Chen Yong Tan[1]**, Normaszuhaila Abd Hamid[1], Mohd Syahin Syahira Lilah[1], Radziah Abdul Ghani[1], Syazatul Syakirin Sirol Aflah[1], Zuhanis Abd Hamid[2] *[1]Institut Perubatan Respiratori, Kuala Lumpur, Malaysia* *[2]Institut Kanser Negara, Putrajaya, Malaysia*	**69**
OPA8	**EFFECTIVENESS OF THE PENANG MODEL (PMD) IN OPTIMISING THE USE OF BIOLOGICS AMONG PATIENTS WITH SEVERE ASTHMA**	**70**

	Jaya Muneswarao[1], Sumithra Appava[2], Deepa Priya Naidu Subramaniam[2], Ho Shien Chee[1], Lalitha Pereirasamy[2], Goon Ai Khiang[2], Umadevi A. Muthukumaru[2], Irfhan Ali Hyder Ali[2] *1.Pharmacy Department, Hospital Pulau Pinang, Pulau Pinang, Malaysia,* *2.Respiratory Department, Hospital Pulau Pinang, Pulau Pinang, Malaysia,*	
OPA9	**FIRST LINE GEFITINIB IN EGFR POSITIVE METASTATIC ADENOCARCINOMA PATIENTS: A RETROSPECTIVE COHORT STUDY IN HOSPITAL PULAU PINANG** **Sumithra Appava,** Deepa Priya Naidu Subramaniam, Jaya Muneswarao, Tan Ai Lian, Lalitha Perierasamy, Irfhan Ali Hyder Ali *Hospital Pulau Pinang, Pulau Pinang, Malaysia*	**71**
OPA10	**PULMOLOGIST-LED TREATMENT EXPERIENCE WITH TYROSINE KINASE INHIBITORS IN EGFR MUTANT, LUNG ADENOCARCINOMA AT A TERTIARY CENTRE IN NORTHERN MALAYSIA** **Kezreen Kaur Dhaliwal[1]**, Siti Farah Azwa Aliman[1], Mohd Faizul Abu Samah[1], Chan Tha A Hing[1], Arvindran Alaga[1] *[1]Respiratory Department, Hospital Sultanah Bahiyah, Alor Setar, Kedah.*	**72**
OPA11	**EMERGING DIAGNOSTIC TOOLS FOR EARLY DETECTION OF LUNG CANCER-RELATED PLEURAL EFFUSION** **S.F. Tan[1],** U.N. Daut[1] M.Z Bidin[1] *[1]Department of Medicine, Faculty of Medicine and Health Sciences, Universiti Putra Malaysia, Selangor, Malaysia*	**73**
OPA12	**BLEOMYCIN-INDUCED FIBROSIS AND EFFECTIVENESS OF CENTELLA ASIATICA AS TREATMENT** **Yabestin Alfrianus Pakpahan** and Noni Novisari Soeroso *Universitas Sumatera Utara, Medan, Indonesia*	**74**
OPA13	**ENDOBRONCHIAL ULTRASOUND-GUIDED TRANSMEDIASTINAL CRYOBIOPSY IN PULMONARY DISEASE: NOVEL INSIGHTS FROM A SINGLE-CENTRE IN MALAYSIA** **Chun Ian Soo[1]**, Vijayan Munusamy[1], Leng Cheng Sia[1], Nur Husna Ibrahim[1], Thian Chee Loh[1], Ka Kiat Chin[1], Jiunn Liang Tan[1], Chee Kuan Wong[1], Mau Ern Poh[1], Yong Kek Pang[1], Chong Kin Liam[1]. *[1] Division of Respiratory Medicine, Department of Medicine, University of Malaya, Kuala Lumpur, Malaysia*	**75**
OPA14	**IMPACT OF ULTRATHIN CRYOPROBE ON CONVENTIONAL RADIALEBUS GUIDED TRANSBRONCHIAL CRYOBIOPSY OF LUNG NODULES** **Kho Sze Shyang[1]**, Chai Chan Sin[1], Ngu Nga Hung[1], Ho Rong Lih[1], Chan Swee Kim[1], Adam Malik Ismail[2], Chan Swee Kim[1], Tie Siew Teck[1] *[1]Division of Respiratory Medicine, Department of Internal Medicine, Sarawak General Hospital, Ministry of Health, Kuching, Sarawak, Malaysia* *[2]Department of Pathology, Sarawak General Hospital, Ministry of Health, Kuching, Sarawak, Malaysia*	**76**
OPA15	**TISSUE COAGULUM CLOT CELLBLOCK FROM EBUS-TBNA FOR THE DIAGNOSIS OF NECROTIC MEDIASTINAL LESIONS** **Chun Ian Soo[1]**, Leng Cheng Sia[1], Diana Bee Lan Ong[2], Seow Fan Chiew[2], Vijayan Munusamy[1], Nur Husna Ibrahim[1], Chee Kuan Wong[1] *[1.] Division of Respiratory medicine, University of Malaya Medical Center, Kuala Lumpur, Malaysia* *[2.] Department of Pathology, University of Malaya Medical Center, Kuala Lumpur, Malaysia*	**77**
OPA16	**SHIELDING LUNGS, DEFYING LIMITS: THE EFFECTIVENESS AND SAFETY OF IMMUNOSUPPRESSANT THERAPY IN INTERSTITIAL LUNG DISEASE – A RETROSPECTIVE STUDY** Mohd Syahin Shahira[1], Noraishah Sulaiman[1], Khoo Ming Yi[1], **Syazatul Syakirin Sirol Aflah[1]** *[1]Institut Perubatan Respiratori, Kuala Lumpur, Malaysia*	**78**

OPA1

ADENOSINE DEAMINASE DIAGNOSTIC PERFORMANCE FOR TUBERCULOUS PLEURAL EFFUSION

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Introduction: Adenosine deaminase (ADA) in pleural fluid is a simple and inexpensive method for establishing tuberculous pleural effusion (TPE). The diagnostic threshold, however, varied widely. Although a national ADA cutoff threshold of 29.6 IU/L had been established, however its performance in different centres has never been studied.

Objectives: This study aimed to evaluate the ADA performance on TPE using the composite reference standard (CRS).

Methodology: This was a retrospective cross-sectional study based on the medical records of cohorts comprising patients who underwent thoracocentesis from January 1 to December 31, 2022, at the Institute of Respiratory Medicine, Kuala Lumpur. TPE was diagnosed based on CRS as either definite, probable, or possible TPE. Light's criteria, extremely high ADA levels, and early findings in pleural fluid, were a few of the circumstances that taken into account. The receiver operating characteristics curve (ROC) was then utilised to determine a diagnostic cutoff value for ADA.

Results: A total of 79 cases, including 42 with TPE, 15 with malignant pleural effusion (MPE), and 22 with other benign effusions, were analysed. When analysis was restricted to 67 patients with ADA of $\leq$ 210 IU/L and early negative findings for malignancy and non-tuberculous infection without considering Light's criteria, the diagnostic cutoff value for ADA was 30.97 IU/L, with a sensitivity of 97.6%, specificity of 76.0%, positive predictive value (PPV) of 87.2%, negative predictive value (NPV) of 95.0%, and accuracy of 89.6%.

Conclusions: The diagnostic cutoff level of 30.97 IU/L established in this study echoed the current cutoff value used nationally, demonstrating good diagnostic accuracy. This gave clinicians more insight and confidence into using the ADA as the initial diagnostic tool for TPE.

OPA2

DESCRIPTIVE STUDY OF ADVERSE DRUG REACTIONS IN BETWEEN TWO ANTI TUBERCULOSIS FIX DOSED DRUG IN MALAYSIA - A SINGLE CENTRE REVIEW, INSTITUT PERUBATAN RESPIRATORI

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Introduction and objective: In Malaysia, anti-tuberculosis combination of four separate drugs (ethambutol, isoniazid, rifampicin, and pyrazinamide [EHRZ]) is the first-line pharmacotherapy for pulmonary tuberculosis (TB). The 2 combination drugs available in Malaysia are Akurit-4 and Forecox. Each drug carries the risk of adverse drug reaction (ADR). This study aims to describe the ADR of both drugs individually in 2 different years.

Methodology: retrospective review of ADR form for Akurit-4 for the year 2017 and Forecox for the year of 2022. Demographic and ADR (liver injury, skin reaction and others) were obtained, and analysis were done using SPSS data editor.

Result: A total of 1457 of Akurit-4 and 804 of Forecox were dispensed in 2017 and 2022. 39 cases of ADR were reported for each year. 45 (57.7%) were male. Mean age was 48.9 years (+ 16.2) and majority are malay (56.4%). Liver injury predominantly in older age group (19.2%) while skin reaction (26.9%) occurs mainly in younger age group. By comparison for both fix dosed drugs, higher incident of liver injury in Forecox group (60.6%) while Akurit-4 carry the risk of skin reaction (57.5%)

Conclusion: this initial descriptive study can be the platform for future thorough analysis in relationship in between ADR and its confounding factors for better individualistic treatment of tuberculosis treatment in Malaysia.

OPA3

SOCIO-DEMOGRAPHY AND TREATMENT OUTCOMES OF MULTIDRUG RESISTANT TUBERCULOSIS AT A TERTIARY CENTER IN NORTHERN MALAYSIA

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Introduction

Multidrug-resistant tuberculosis (MDR-TB) poses a substantial public health issue globally. The World Health Organization (WHO) reported 400,000 new cases of multidrug-resistant or rifampicin-resistant tuberculosis (TB) in 2021 with Malaysia charting approximately 540 cases. The treatment success rate worldwide is around 50%.

Objectives

The objectives of this study are to describe the demographics, risk factors, treatment, outcomes, and complications of the MDR-TB cases encountered.

Methodology

This is a retrospective, observational study of 19 MDR-TB patients who were treated between 2011 and 2022 at Hospital Sultanah Bahiyah.

Results

A total of 19 patients were treated for MDR-TB. Among them, 16 were male and 3 were female. 17 of them were Malaysians, and 2 were immigrants. The mean age of the patients was 48 years, with an age range of 21 to 73 years. The most prominent risk factors observed were a history of previous tuberculosis and exposure to TB treatment. Smokers and patients with diabetes mellitus were also identified as high-risk factors. 5 patients experienced kanamycin-induced ototoxicity, while 2 patients had pyrazinamide-induced hyperuricemia. Regarding treatment outcomes, 4 patients met the WHO criteria for “treatment success”, 1 patient was classified as "cured," 3 patients “completed treatment”, 2 patients were still undergoing treatment, 2 patients were transferred to other treatment centers, 3 patients unfortunately passed away, and finally, 4 patients were lost to follow-up.

Conclusion

The treatment of MDR-TB is complex and challenging. The major hindrance in achieving a high cure rate was a high death rate and defaults. However, with the support and implementation of national TB programs, successful treatment outcomes can be achieved.

OPA4

WHAT IS THE CLINICAL SIGNIFICANCE OF INDETERMINATE RIFAMPICIN RESISTANT XPERT MTB/RIF ULTRA RESULT?: A RETROSPECTIVE STUDY

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Introduction

Xpert MTB/RIF Ultra is a rapid diagnostic test for drug resistant tuberculosis allowing prompt treatment. An indeterminate rifampicin resistance (RR) result from Xpert MTB/RIF may lead to anxiety for physicians and patients due to uncertainty of drug resistant tuberculosis

Objectives

To determine the rate of positive Mycobacterium tuberculosis culture and sensitivity (MTB C+S) and treatment outcome among patients with indeterminate RR, comparing with RR detected from Xpert MTB/RIF Ultra.

Methodology

A non-interventional retrospective study involving patients with clinical samples reported indeterminate or detected RR from Xpert MTB/RIF Ultra in Hospital Tuanku Ja'afar Seremban from 1/1/2019 to 31/12/2022. Demographic data, types of the samples collected, MTB C+S results and treatment outcome were analyzed.

Results

23 patients were identified, 18 with indeterminate RR and 5 with RR detected from Xpert MTB/RIF Ultra. Mean age for patients with indeterminate RR is 54.1±14.5 years with predominant male (72.2%). Clinical sample with indeterminate RR result includes bronchoalveolar lavage(61.1%), cerebrospinal fluid(11.1%), pleural fluid(11.1%), sputum(11.1%) and tracheal aspiration(5.6%). 17.6% indeterminate RR had positive MTB C+S but none had RR, while 80% of patients with RR detected from Xpert MTB/RIF Ultra have positive MTB C+S with RR ($p<0.05$). Trace MTB detection seen in indeterminate RR compared to RR detected is (66.7% versus 20%, $p=0.13$). All patients with indeterminate RR were treated with first line anti tuberculosis with 50% treatment success and 21.4% mortality.

Conclusion

Indeterminate rifampicin resistance does not raise the concern of drug resistant tuberculosis using MTB C+S as the gold standard. Trace MTB detection could be the reason of indeterminate RR rather than a true incidence of RR.

OPA5

THE OUTCOME OF LONG-COURSE ORAL CORTICOSTEROIDS IN COVID-19-RELATED DIFFUSE INTERSTITIAL LUNG ABNORMALITIES

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Background and Aims

The efficacy of long-course corticosteroid therapy in treating COVID-19-related diffuse interstitial lung abnormalities (DILA) is not well understood. We studied the benefit of the long course of corticosteroid treatment in COVID-19-related DILA by evaluating computed tomography (CT) scores.

Methods

A retrospective observational study was conducted in patients aged 18 years or older admitted with moderate to severe COVID-19 pneumonia, treated with 12 weeks of oral prednisolone. Clinical parameters, CT severity scores, and pulmonary function tests were analysed.

Results

A total of 330 patients were analysed. The mean (SD) age was 54.6 (14.2) years, 43% were female, and 14.55% required mechanical ventilation. The common side effects were weight gain (13.9%), hyperglycaemia (1.8%) and cushingoid habitus (0.6%). The baseline CT pattern was characterized by ground-glass opacities, perilobular density, and consolidation, while post-prednisolone CT tends to demonstrate a parenchymal band ($p < 0.001$). There was a significant improvement in the mean (SD) baseline CT score compared to the CT score post-prednisolone [17.3 (5.3) vs 8.6 (5.5), $p < 0.001$]. On follow-up at 12 weeks, the median mMRC was 1 (IQR 0-1), and only 1.2% of patients had a complete radiological response.

Conclusion

Long-course prednisolone treatment demonstrated significant radiological improvement in moderate to severe cases of COVID-19-related DILA and was found to be relatively safe. Dyspnoea and residual CT changes may persist even at 12 weeks.

OPA6

MENTAL HEALTH STATUS AMONG HOSPITAL STAFF IN A TERTIARY HOSPITAL DURING THE COVID-19 PANDEMIC

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Introduction

Following the Covid-19 pandemic, a movement control order (MCO) was started in Malaysia on 10th March 2020. Transition to the Endemic Phase was started on 1st April 2022.

Objective

To determine the mental health status, professional quality of life of hospital staff and their associated factors after 2 years of MCO during the COVID-19 pandemic.

Methodology

A cross-sectional study was conducted during the Covid-19 pandemic from March to May 2022. Recruitment of subjects was done via convenient sampling which include all staff categories. Subjects were identified and approached via physical interview and via online. Two tools used were Depression Anxiety Stress Scales (DASS-21) and Professional Quality of Life (ProQOL) questionnaires.

Results

Four hundred and sixty-five hospital staff participated with the majority being female (92.5%) and nurses (74.6%). Other categories were doctors and supporting staff. There was anxiety (23.3%), stress (11.4%) and burnt out (59.9%) among hospital staff. About 26 % of them worked prolonged hours i.e. more than 50 hours per week. Prolonged working hours were associated with anxiety, stress, burnout level and trauma ($p<0.05$). Those who worked prolonged hours had severe to extremely severe anxiety (17.9%), severe to extremely severe stress (11.5%), burnout (71.2%) and secondary traumatic stress (52.3%). Doctors had moderate to severe depression (33.4%), anxiety (18.3%), and experiencing stress (20.8%). High burnout was found among staff with less than 3 days off work per month (63.1%).

Conclusions

After 2 years of movement control order in Malaysia, we found prolonged working hours among healthcare workers contribute to depression, anxiety, stress and burnout.

OPA7

A RETROSPECTIVE STUDY OF CLINICAL PRESENTATION, TREATMENT OUTCOMES AND DISEASE COURSE IN SARCOIDOSIS PATIENTS AT A TERTIARY CENTRE

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Introduction: Sarcoidosis is a multisystem disease of unknown aetiology characterised by noncaseating granulomas affecting various organs, commonly the lung. The diagnosis of sarcoidosis poses significant challenges, especially in regions with a high tuberculosis (TB) burden.

Objectives: To analyse the clinical presentation, treatment pattern, and disease outcome in sarcoidosis patients.

Methodology: This is a single-centre retrospective cross-sectional study of patients diagnosed with sarcoidosis at Institut Perubatan Respiratori (IPR) between January 1, 2016 and December 31, 2022.

Results: There were 32 (60.4%) males among 53 sarcoidosis patients, with the majority being Indian (36, 67.9%). Approximately 13% of patients had received empirical TB treatment. Thoracic manifestations were present in 92.5% of the patients. The treatment was received by approximately two-thirds of the patients (67.9%), with steroids-only treatment in 58.3% of the treatment group and steroids in combination with another immunosuppressive agent in 41.7%. The most commonly used immunosuppressive agent was methotrexate (11, 73.3%). The median (interquartile range (IQR)) duration to establish remission was 36.0 months (11.5-68.3 months). Nine (25%) patients had a relapse. One (1.9%) mortality observed was due to respiratory disease. There were no significant differences in terms of demographics, comorbidities, clinical symptoms, or organ involvement, between the treatment group and the non-treatment group, except for forced vital capacity in percentage (FVC%).

Conclusions: The majority of patients were Indian and male, with more than half of them receiving treatment, with slightly more receiving steroids-only treatment. The relapse rate was 25%, and the study found the FVC was significantly lower in the treatment group.

OPA8

EFFECTIVENESS OF THE PENANG MODEL (PMD) IN OPTIMISING THE USE OF BIOLOGICS AMONG PATIENTS WITH SEVERE ASTHMA

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Introduction

The advent of biologics has completely changed how severe asthma is managed, yet these drugs need to be appropriately handled in clinical settings. The Penang MoDel (PMD) is a multidisciplinary team (MDT) care approach developed to optimise biologics in severe asthma.

Objective

The present study aimed to assess the effectiveness of PMD.

Methodology

A two-year prospective observational study was conducted at Hospital Pulau Pinang's respiratory clinic. Adult asthma patients referred for biological agents were recruited. All referred patients received care based on the PMD. Pulmonologists, pharmacists, respiratory trainees, nurses, and clinicians from other specialities (if needed) made up the PMD team. An MDT meeting was held after the patients were evaluated using an internal checklist. Patients who received approval from the meeting would receive pre-biologic counselling and commence with the administration of the biologics. A second MDT meeting was conducted to review the response at least six months after the initial administration of the biologics. Patients without biologic approvals underwent a patient-centric care approach focused on "treatable traits".

Results

Thirty-one patients were included in the PMD throughout the study period. Seven patients (23%) were treated with biologics, and the remaining (77%) were absorbed into the patient-centric care approach. Patients with biologics had significant improvements in ACT score (effect size, $r=0.54$; $p<0.05$), severe exacerbation rate ($r=0.55$; $p<0.05$) and OCS dose reduction ($r=0.53$; $p<0.05$). The non-biologics candidates (patient-centric care) had improvements in ACT score ($r= 0.620$; $p<0.001$), severe exacerbation rate ($r=0.53$; $p<0.001$), critical inhaler errors ($\chi2 =1.17$; $p<0.05$) and medication adherence ($\chi2 =5.21$; $p<0.01$).

Conclusion

The PMD was effective in improving patients' outcomes and can lead to better optimisation of biological agents in severe asthma.

OPA9

FIRST LINE GEFITINIB IN EGFR POSITIVE METASTATIC ADENOCARCINOMA PATIENTS: A RETROSPECTIVE COHORT STUDY IN HOSPITAL PULAU PINANG

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Background

A new era in the treatment of lung adenocarcinomas has been opened up by advances in molecular pathology and targeted therapies. EGFR mutations have a predilection for females, never-smokers, Asian ethnicity and are strong predictive biomarkers of the clinical efficacy of tyrosine kinase inhibitors (TKI) including gefitinib. We aim to evaluate the progression-free survival (PFS) of EGFR mutation-positive Malaysian patients with metastatic lung adenocarcinoma treated with gefitinib as the first-line treatment.

Methods

A retrospective cohort study was conducted by analyzing medical records from chest-oncology clinic of all adult Stage IV adenocarcinoma patients with EGFR-mutation positive from September 2018 to April 2023. All patients who received oral gefitinib 250 mg/day were followed retrospectively until disease progression. Primary and secondary endpoints were PFS and safety respectively.

Results

72 patients with median age 66.5 (42.0-82.0) years were included in the study. Seventy-one patients (98.6%) had adenocarcinoma and one (1.4%) had adenosquamous carcinoma. Fifty patients (69.4%) were never-smokers. Forty-five patients (62.5%) had Eastern Cooperative Oncology Group performance status of 0 and 1. Forty-six patients (63.9%) had EGFR-mutations in EXON 19, twenty-one (29.1%) patients had EXON 21 mutations and four (5.6%) patients had rare EXON mutations. Nineteen (26.4%) patients achieved progressive disease (PD). The median (IQR) PFS was 8 (9) months, ranging 1-53 months. Treatment remains ongoing in thirty-six patients. Forty-six (63.9%) patients had mild adverse reactions, most frequently rash or dermatitis acneiform (60.8%) and diarrhea (14.3%).

Conclusion

Malaysian patients with metastatic EGFR mutation-positive adenocarcinoma responded favorably to gefitinib in relation to median PFS and tolerability. These results are consistent with those of the IPASS study.

OPA10

PULMOLOGIST-LED TREATMENT EXPERIENCE WITH TYROSINE KINASE INHIBITORS IN EGFR MUTANT, LUNG ADENOCARCINOMA AT A TERTIARY CENTRE IN NORTHERN MALAYSIA

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Introduction: There is limited published real-world data on pulmonologist-led TKI treatment of Epidermal Growth Factor mutant (EGFRm) Non-Small Cell Lung Cancer (NSCLC).

Objectives: To study the characteristics and survival outcomes of the patients with EGFR positive lung adenocarcinoma.

Methodology: This is a retrospective, observational study of patients with EGFRm, lung adenocarcinoma who were started on first-line TKI between 2018 and 2023 at Hospital Sultanah Bahiyah. Data was analysed using R version 4.3.0[1].

Results :
30 patients were analysed. Majority of them were females (73.3%) and non-smokers (76.7%). The most prevalent mutations were exon 19 deletions (66.7%) and exon 21 mutations (30%). 16/30(53%) patients were on first-generation TKI (8 on Erlotinib, 8 on Gefitinib), 12/30(40%) and 2/30(6%) were on second-generation (Afatinib) and third-generation TKI (Osimertinib), respectively. 13/30(43 %) patients progressed after first line treatment. Following progression, 8/13(61%) patients received second line treatment, of which, 5/8(63%) patients were detected for T790M mutations and started on Osimertinib and 3/8(37%) patients received platinum-based chemotherapy. The median duration of treatment was 13.17 months for first-line treatment and 6.9 months for second line treatment. Three patients received third line treatment; two Osimertinib and one chemotherapy. The progression free survival (PFS) and overall survival (OS) of first-line TKI treatment was 14.7 and 29.6 months respectively, which is consistent with other studies. No significant difference was found with different TKIs. An OS benefit was observed in patients treated with Osimertinib in second or third-line treatment (8.5 months) compared to those who never received Osimertinib (4.5 months).

Conclusions:
Despite the small sample size, this study provides an outlook on the characteristics, treatment options and outcomes of EGFRm lung adenocarcinoma in our local setting.

OPA11

EMERGING DIAGNOSTIC TOOLS FOR EARLY DETECTION OF LUNG CANCER-RELATED PLEURAL EFFUSION

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Background and aims:

Thoracentesis and pleural biopsy are commonly used for diagnosing malignant pleural effusion (MPE), however their ability to provide a conclusive diagnosis is often hindered by a low positive rate, despite their high specificity. Therefore, additional tests such as cytology or immunohistochemistry are often required to complement these procedures and enhance diagnostic accuracy. Therefore, this study aims to investigate the level of serum CEA, CA 15-3 and CA 19-9 among various exudative pleural effusion (benign pleural effusion, MPE with lung cancer and other organ cancers).

Methodology:

A prospective observational study with a total of 50 patients were screened and collected from January 2022 until January 2023, in Hospital Sultan Idris Shah, Serdang. Outcomes were defined as MPE with lung cancer (MPELC), other organ cancers (MPEOO) associated with risk factors i.e., sociodemographic, comorbidity and level of the serum biomarker. $p < 0.05$ is determined as significance.

Result:

A total of 18 patients and 6 patients with a confirmed case of MPE Lung CA, and MPE others organ. A significant association was found in MPELC with serum CEA, CA15-3, CRP. A multivariate analysis of MPELC and MPEOO with confounding (demographic + comorbidity + laboratory measurement) in different models reported there were significant relationship of race, CRP, serum CEA, CA 19-9 and CA15-3 with MPELC. Study also reported the sensitivity and specificity of CEA=76.0%, CA19-9=55.7%, and CA15-3=62.8%.

Conclusion:

Our study shows that serum CEA, CA19-9 and CA15-3 were significantly associated with the lung cancer related pleural effusion. However, further analysis with multi-centrer is needed to determine the validation of these biomarkers as diagnostic purposes.

OPA12

BLEOMYCIN-INDUCED FIBROSIS AND EFFECTIVENESS OF CENTELLA ASIATICA AS TREATMENT

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Introduction: Treatment using plants has been used for thousands of years and was proven to be able to treat acute and chronic diseases. The functions of traditional plant Centella Asiatica were as an antimicrobial agent, anticancer, antioxidant, and therapeutic gene in wound healing and inflammation. Bleomycin-induced pulmonary fibrosis can progress to Chronic Pulmonary Disease which ends in tissue death if not treated immediately. This study aims to predict and explain the effect of Centella Asiatica extract as an anti-fibrinolysis or treatment on the lungs of rat models exposed to bleomycin.

Method: This is an analytical study with randomized in vivo experimental design. A total of 15 samples used were male wistar rats aged 10 weeks divided into 3 groups. Negative control group (K) with giving intratracheal bleomycin only. The positive group was given bleomycin intratracheal 4 mg/kg BW on days 0 and 21, plus induction of Centella Asiatica with a dose of 400 mg (P1) on days 15 to 49. The other positive group was given bleomycin intratracheal 4 mg/kg BW on days 0 and 21, plus induction of Centella Asiatica at a dose of 800 mg (P2) on days 15 to 49. Data was collected based on the results of histological analysis of the lungs of rat samples.

Results: The interalveolar septum group showed that there were differences in the results of Trichrome Masson staining in groups K and P1 with $p<0.05$ ($p=0.036$). The interalveolar septum group showed no difference in histopathological staining results in groups K and P2 ($p>0.05$).

Conclusion: Giving bleomycin 4 mg/kg/BW has been shown to cause fibrosis in rat lungs and the use of Centella Asiatica extract as treatment. Therefore, further research is expected on antifibrotic drugs that can significantly reduce fibrotic areas.

Keywords: Bleomycin, Pulmonary Fibrosis, Centella Asiatica, Treatment

OPA13

ENDOBRONCHIAL ULTRASOUND-GUIDED TRANSMEDIASTINAL CRYOBIOPSY IN PULMONARY DISEASE: NOVEL INSIGHTS FROM A SINGLE-CENTRE IN MALAYSIA

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Introduction

Endobronchial ultrasound-guided transbronchial mediastinal cryobiopsy (EBUS-TMC) is a novel alternative to endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) for obtaining larger and more representative tissue specimens for diagnosing lung and mediastinal diseases and performing molecular profiling for personalized lung cancer therapy.

Objective

To determine the utility and safety of EBUS-TMC

Method

Single-center retrospective analysis of EBUS-TMC cases over 6 months. A 1.1mm cryoprobe was used for EBUS-TMC. EBUS-TBNA was performed using either 19,21- or 22-gauge needle (depending on operator judgement) with 4 passes per lesion without rapid onsite cytology examination (ROSE).

Results

36 EBUS-TMC in 30 patients and 21 EBUS-TBNA on 27 lesions, with 80% of cases performed under moderate sedation. The number of EBUS-TMC was 3 (IQR 3-4) with an activation time of 6 seconds (IQR 6-8). The cumulative size of tissue retrieved was 6mm (IQR 5-8). The EBUS-TMC -positive yield was 86.1% (31 lesions) with an overall diagnostic yield of 83.3% (25 cases). The overall diagnostic yield of EBUS-TBNA was 76.2% (16 cases). Molecular profiling was successful in all successful EBUS-TMC samples (12 patients) proven non-small-cell lung carcinoma. The procedure time for EBUS-TMC versus TBNA performed on one lesion was 23.9 minutes (□10.8) versus 28.6 minutes (□14.2) (P=0.156). Mild bleeding was observed in 6 EBUS-TMC (16.7%), which did not require any intervention. Otherwise, no other complications were seen.

Conclusion

The diagnostic yield of EBUS-TMC was better to that of EBUS-TBNA with a comparable procedure time. Overall, EBUS-TMC appears to be a safe and promising adjunct to EBUS-TBNA when ROSE is unavailable.

OPA14

IMPACT OF ULTRATHIN CRYOPROBE ON CONVENTIONAL RADIALEBUS GUIDED TRANSBRONCHIAL CRYOBIOPSY OF LUNG NODULES

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Background The performance of conventional cryoprobe in difficult-to-reach areas of the lung such as apical upper lobe was frequently limited due to its larger caliber and stiffness. The flexible 1.1mm ultrathin cryoprobe may address this clinical dilemma.

Methods Retrospective review of rEBUS guided transbronchial cryobiopsy (TBLC) of lung nodules from April 2017 to December 2022. Data of ultrathin cryoprobe (Group A) was compared to historical 1.9mm cryoprobe (Group B).

Results 130 TBLC were performed during the study period using the ultrathin (Group A, n=47) and conventional cryoprobe (Group B, n=83). Large caliber bronchoscopes were used in all Group B cases while thin bronchoscopes were used in 66% of Group A cases. The target lesion was significantly smaller in the ultrathin group [2.10 (IQR 1.53-2.32) vs. 2.65 (IQR 2.20-3.67) cm, p<0.001] and was more peripherally situated (5^{th} vs. 3^{rd} median airway generation, p<0.001) with target to pleural distance of 1.85 (IQR 0.97-2.33) vs. 2.30 (IQR 1.81-3.14) cm, p<0.001. More target nodules were localized in the apical upper lobe in Group A (29.8% vs. 13.3%, p<0.05). The overall diagnostic yield was 81.5% with no difference between two groups (Group A 83.0% vs. Group B 80.7%, p>0.05). There was no severe bleeding encountered but mild to moderate bleeding was recorded in 41.6% which was no difference between two groups (Group A 51.1% vs. Group B 36.1%, p>0.05). One pneumothorax (0.8%) was encountered in our study.

Conclusion rEBUS guided TBLC with 1.1mm cryoprobe potentially allow access into smaller lung nodules in difficult-to-reach areas in the lung with non-inferior diagnostic yield and similar complication profile.

OPA15

TISSUE COAGULUM CLOT CELLBLOCK FROM EBUS-TBNA FOR THE DIAGNOSIS OF NECROTIC MEDIASTINAL LESIONS

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Introduction

Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) has a high diagnostic yield for the evaluation of mediastinal lesions. However, obtaining an adequate sample from necrotic mediastinal lesions (NML) can be challenging. Tissue coagulum clot cellblock (TCC-CB) increases the cellular yield of cell block (CB)[1] but its' utility in NML remains less certain.

Objective

To determine to determine the utility of TCC-CB.

Method

Single-center retrospective analysis of EBUS-TBNA cases over 24 months. Lesions demonstrating relative low attenuation (LA) on contrasted computed tomography were considered necrotic. EBUS-TBNA was performed using a 22G needle with 4 punctures per lesion. Samples were processed in cytology smears (CS), Cytoyt®fixation CB or TCC-CB. EBUS-TBNA was considered diagnostic if a definite cytological diagnosis was obtained.

Results

78 cases of EBUS-TBNA with 91 lesions targeted. Lesions comprised of 64 (70.3%) lymph nodes (LN), and 27 (29.7%) lung or mediastinal masses. 26 lesions had (28.6%) LA compared to 65 non-LA (71.4%). The overall diagnostic yield from CS was 53.8% (42 patients), combined CS and CB was 71.8% (56 patients), and 78.2% (61 patients) with TCC-CB. Molecular analysis was successful in 73.3% (22/ 30 patients); TCC-CB was preferred over CB for analysis in 15 patients. Sub-analysis of 41 cases where samples were processed in three methods showed the overall diagnostic yield for LA lesions was 73.3% (11/15 patients). Diagnostic yield for LA lesions using TCC-CB versus combined CS and CB was 46.7% (7 patients) versus 26.7% (4 patients) (P=0.045) respectively

Conclusion

TCC-CB is an option to increase the diagnostic yield of EBUS-TBNA, especially in NML.

Reference:

1. Yung RC et al. Cancer Cytopathol. 2012; 120(3):185–195

OPA16

SHIELDING LUNGS, DEFYING LIMITS: THE EFFECTIVENESS AND SAFETY OF IMMUNOSUPPRESSANT THERAPY IN INTERSTITIAL LUNG DISEASE – A RETROSPECTIVE STUDY

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Introduction: Interstitial lung disease (ILD) comprises a group of diverse lung disorders characterized by inflammation and fibrosis within the interstitial. Immunosuppressant (IS) medications are used to modulate the immune response and reduce the inflammatory processes driving ILD progression. Corticosteroids are frequently used as the first immunosuppressive medications; additional immunosuppressant is considered when treating ILD.

Objective: The study is to assess the treatment escalation, disease outcome and safety in IS treatment in ILD patients.

Method: This is a single-center retrospective cross-sectional study of patients diagnosed with ILD treated with IS at Institut Perubatan Respiratori (IPR) between January 1, 2016, and February 1st, 2023.

Results: Total of 106 ILD cases treated with IS being analyzed, 55% were females with mean age of diagnosis was 62-years with majority being non-smoker which was 79%. Based on race distribution, highest amongst the Indian (48%) followed by Malay and Chinese. The mean percent forced vital capacity (FVC) at diagnosis was 55% and the common ILD diagnosis was autoimmune (52%) and hypersensitivity pneumonitis (26%). All patients received corticosteroid therapy mainly Prednisolone, subsequently the most common immunosuppressant used was Azathioprine, 79% followed by Mycophenolate Mofetil, 19%. The percentage of patients progressed after 1st line IS was 44%, whilst 25% progressed after 2nd line IS. More than half (65%) tolerated the IS, commonest adverse drug reactions reported were transaminitis, gastrointestinal intolerance, infection, and hematological abnormalities.

Conclusion: This study suggests the majority of ILD patients had disease stabilization with IS. The findings provided the clinical rational of reserving anti-fibrotic use and healthcare cost involving anti-fibrotic treatment.

THEMATIC ORAL PRESENTATIONS (PAEDIATRIC)

OPP1	**BRONCHIAL ASTHMA DISCHARGE PLANNING: ARE WE DOING IT RIGHT?** **Neo Yan Yi[1]**, Idwan Humaidi[1], Lavinya Gogulanathan[1], Kalatheran Saishoo[2], Mithali Binti Abdullah[2] *[1]Paediatric Department, [2] Quality Unit, Hospital Kulim, Kedah, Malaysia*	**81**
OPP2	**LEGA-KID® EFFICACY AND SAFETY ON CHILDREN WITH PNEUMONIA IN AN INTENSIVE CARE SETTING** **Nur Izyani Abdul Halim[1]**, Syuhadah Abd Rahman[1], Nur Haziqah Mohamed@Hizam[2] , Sornaletchumi A/P Koran[2], Sahrinah Mohd Shahardin[2], Karuthan Chinna[1], Chong Jia Yueh[3], Pazlida Pauzi[3], Radhiyah Abdul Rashid[3], Hishamshah Mohd Ibrahim[4], Asiah Kassim[1,3] *1. Clinical Research Centre, Hospital Tunku Azizah, Kuala Lumpur, Malaysia* *2. Physiotherapy Department , Hospital Tunku Azizah, Kuala Lumpur, Malaysia* *3. Paediatric Department Hospital Tunku Azizah, Kuala Lumpur, Malaysia* *4. Deputy Director General Of Health (Research and Technical Support) Ministry Of Health Malaysia, Malaysia*	**82**
OPP3	**CHILDHOOD INTERSTITIAL LUNG DISEASE IN MALAYSIA-A RETROSPECTIVE STUDY FROM A SINGLE CENTRE** **N.Fafwati Faridatul Akmar[1]**, Shangari Kunaseelan[1], Che Zubaidah Che Daud[2], Sellymiah Adzman[3], Mohd Yusof Abdullah[4], Asiah Kassim[1]. *[1]Department of Paediatric, Hospital Tunku Azizah, Kuala Lumpur, Malaysia* *[2]Department of Radiology, Hospital Tunku Azizah, Kuala Lumpur, Malaysia* *[3]Department of Pathology, Hospital Kuala Lumpur, Malaysia* *[4]Department of Paediatric Surgery, Hospital Tunku Azizah, Kuala Lumpur, Malaysia*	**83**
OPP4	**PRE-DISCHARGE HOME VISIT ASSESSMENT FOR LONG-TERM RESPIRATORY SUPPORT** **Tan Yee Yen**, Shangari Kunaseelan, N. Fafwati Faridatul Akmar Mohammad, Asiah Kassim *Department of Paediatrics, Hospital Tunku Azizah, Kuala Lumpur.*	**84**
OPP5	**DIAGNOSTIC OPEN LUNG BIOPSY IN CHILDREN: A DESCRIPTIVE STUDY IN A TERTIARY CENTRE, MALAYSIA** Jie Cong YEOH [1], **Nur Izyani ABDUL HALIM [5],** Hamidah ISMAIL [2], N.Fafwati Faridatul Akmar MOHAMMAD(4), Shangari KUNASEELAN(4), Yusran OTHMAN [3],Mohd Yusof ABDULLAH (3), Zakaria ZAHARI (3) , Asiah KASSIM [4,5], *[1] Department of Anaesthesiology & ICU, Hospital Kuala Lumpur, MALAYSIA* *[2] Department of Anaesthesiology & ICU, Hospital Tunku Azizah, Kuala Lumpur, MALAYSIA* *[3] Department of Pediatric Surgery, Hospital Tunku Azizah, Kuala Lumpur, MALAYSIA* *(4) Department of Paediatric, Hospital Tunku Azizah, Kuala Lumpur, MALAYSIA* *(5] Clinical Research Centre, Hospital Tunku Azizah, Kuala Lumpur, MALAYSIA*	**85**
OPP6	**NEONATAL RESPIRATORY OUTCOMES AMONG PREGNANCIES WITH DIABETES MELLITUS** **Then Moli Othayamoorthy**, Nur Izyani Abdul Halim, Fatimah Az Zaharah Suhaimi, Lee Ching Hai, Chua Ker Yang, Udhaya Moorthy, Karuthan Chinna, Asiah Kassim *Hospital Tunku Azizah, Kuala Lumpur, Malaysia.*	**86**
OPP7	**A RETROSPECTIVE STUDY ON ADVERSE EFFECTS FOLLOWING COVID-19 VACCINATION AMONG CHILDREN AND TEENAGERS IN KLANG VALLEY** **Ching Hai Lee[1],** Amelia Alias [3], Hazilawati Hussin[4], Siti Syawanatul Zahraa' Mohamed Rahim[5], Rohani Khalid [3], Muhammad Kasyful Azim Yahya[2], Shamsul Anuar Kamarudin[2], Sabeera Begum Kader Ibrahim[3], Asiah Kassim [1,3] *1. Clinical Research Centre, Hospital Tunku Azizah, Kuala Lumpur* *2. Directors Office, Hospital Tunku Azizah, Kuala Lumpur* *3. Paediatric Department, Hospital Tunku Azizah, Kuala Lumpur* *4. Pathology Department, Hospital Tunku Azizah, Kuala Lumpur* *5. Occupational Safety and Health Unit, Hospital Tunku Azizah, Kuala Lumpur, Malaysia*	**87**

OPP8	**PERCEPTION OF ILLNESS, RECOGNITION OF EXACERBATION SYMPTOMS AND BURDEN OF CARE FOR CHILDREN WITH CHRONIC SUPPURATIVE LUNG DISEASE (CSLD): PARENTS/CARERS' PERSPECTIVE** **Stephanie ANG**[1], Sharmily C SAGRA[1], Zheyi LIEW[1] 1. *Paediatric Respiratory Unit, Department of Paediatrics, Hospital Sultanah Aminah Johor Bahru, Malaysia*	**88**

OPP1

BRONCHIAL ASTHMA DISCHARGE PLANNING: ARE WE DOING IT RIGHT?

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Introduction: Bronchial asthma carries a significant morbidity and mortality among paediatric population. Global Initiative for Asthma (GINA) has outlined several discharge plans for asthma patients which include to provide a personalized written asthma action plan and check on inhaler technique and adherence.

Objective: This clinical audit is to ensure all bronchial asthma patients receive a proper written asthma action plan.

Methods: A clinical audit was conducted in general paediatric ward Hospital Kulim from December 2022 to April 2023 to see if bronchial asthma discharge planning meets the GINA standard. All patients (100%) need to be assessed on inhaler technique and provided with written asthma action plan. Patient's notes were pulled and checked for the documented discharge plan. Patients were then given a phone call to double check for presence of written asthma action plan.

Results: Total subjects for initial audit and re-audit were 26 and 29, respectively. Initial audit and re-audit showed patients discharged with asthma action plan increased from 42% to 93%. The percentage of patients whom inhaler technique was checked prior to discharge increased from 77% to 100%. Reasons for shortfall in quality include lack of familiarity with asthma action plan, time pressure, poor documentation of asthma action plan completion, poor medical understanding of the importance of asthma action plan in safe discharge and lack of experience and confidence. Strategies to change include enhanced health care personnel training, feedback session, consensus meeting among the experts, creation of asthma action plan template.

Conclusion: Continuous audit and monitoring are necessary to facilitate improvement in bronchial asthma discharge planning for better patient care.

OPP2

LEGA-KID® EFFICACY AND SAFETY ON CHILDREN WITH PNEUMONIA IN AN INTENSIVE CARE SETTING

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Introduction

Chest physiotherapy (CPT) is used as an adjuvant treatment for pneumonia to clear tracheobronchial secretions. LEGA-Kid® is a device designed to aid physiotherapists during CPT.

Objective

The aim of the study was to determine the effectiveness of CPT with LEGA-Kid® device compared with manual CPT (mCPT) on children with pneumonia in an intensive care setting (PICU).

Methodology

In a randomized controlled study, children between 6 months to 5 years weighing 3-15kg admitted to PICU with acute pneumonia were recruited. A certified physiotherapist randomly assigns them to receive CPT either manually or using LEGA-Kid®. The child was evaluated at baseline, immediately, and three minutes after every CPT.

Results

8 patients from the PICU in Hospital Tunku Azizah participated in the study. There were 25 mCPT and 16 LEGA- Kid®. The mean age was 23 months (±7.251) for mCPT and 20 months (±9.481) for LEGA- Kid®. All subjects were intubated with artificial ventilation. The median length of stay for mCPT was 10 days (IQR 8.5-27.5) while LEGA- Kid® was 9 days (IQR 8-19). Each patient received up to 4 sessions with LEGA- Kid® and 1-6 sessions with mCPT. There were no significant differences between oxygen saturation (SaO2), heart rate (HR) respiratory rate (RR), and breath sound ($p > 0.05$) at baseline, immediate and three minutes after CPT. No side effects were recorded for both modalities.

Conclusion

The LEGA-Kid® is not inferior to mCPT among young children above 6 months old with pneumonia in an intensive care setting.

OPP3

CHILDHOOD INTERSTITIAL LUNG DISEASE IN MALAYSIA-A RETROSPECTIVE STUDY FROM A SINGLE CENTRE

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Introduction:

Childhood interstitial lung disease (chILD) is a rare chronic disease which comprises a large and heterogenous group of disorders characterized by diffuse pulmonary infiltrates, restrictive lung physiology and impaired gas exchange which leads to substantial morbidity and mortality. Most of these conditions are associated with abnormalities that are not confined only to the lung interstitium but also involve the alveolar and airway compartments.

Objective:

To describe the demographics, clinical features, management and outcomes of children with chILD.

Methodology:

Retrospective study of children less than 18 years old diagnosed with chILD in Hospital Tunku Azizah, Kuala Lumpur from August 2006 until December 2021. Data collected include demographics, clinical features, investigations, treatments and clinical outcomes.

Results:

Total of 44 patients included (29 boys and 15 girls). The median age at first symptom and diagnosis was at birth (IQ range 0-3months) and 5 months (IQ range 2-12.5 months) respectively. The clinical features were respiratory distress (44, 100%), hypoxia (44,100%) cough (20, 45.5%), failure to thrive (25, 56.8%) and crepitation (25,56.8%). All patients had abnormal imaging from first presentation with 38 (86.4%) had ground glass opacities, 14 (31.8%) had lung cysts and 12 (27.3%) had subpleural cysts. 36 (81.8%) patients underwent open lung biopsy and 20 (55.6%) were diagnosed with pulmonary interstitial glycogenosis. Majority of the patients received corticosteroid (36, 81.8%). The mortality rate was 6.8%.

Conclusion:

Albeit rare, diagnosis of chILD need to be considered which requires combination of clinical suspicion, CT imaging and histopathology report.

OPP4

PRE-DISCHARGE HOME VISIT ASSESSMENT FOR LONG-TERM RESPIRATORY SUPPORT

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Introduction

A suitable home is one of the main requirements for long-term respiratory support. Pre-discharge home assessment has been one of the main criteria before any child is discharged for long-term respiratory support like oxygen and ventilation therapy to ensure the safety of patients, family, and the surrounding area.

Objective

To describe pre-discharge home safety and suitability assessment in Klang Valley prior to discharge from 2015 till 2023 in Paediatric Respiratory Unit Hospital Kuala Lumpur and Hospital Tunku Azizah.

Methodology

Home visit checklist records from 2015 to 2023 were reviewed and recorded. The checklist consists of safety criteria including electrical, overcrowding, fire hazard, cleanliness and hygiene.

Results

A total of 189 home visits were performed and they were for long-term oxygen therapy (72%), non-invasive ventilation (NIV, 21%), and life-support ventilator (7%). The type of houses was landed property (40%), apartment (34%), and public housing flats e.g. Program Perumahan Rakyat (PPR) flats (26%). About 13% were found unsuitable and modification was required for inadequate individual electrical power points for the equipment (12), house flooring (4), fire hazards (1), unhygienic (2) and overcrowded house environment due to the number of furniture and its arrangement (5). None was completely not suitable requiring a new house.

Conclusion

The results showed that despite being situated in Klang Valley, there were still houses found not safe and suitable, especially the electrical supply and fire hazards requiring some modifications.

OPP5

DIAGNOSTIC OPEN LUNG BIOPSY IN CHILDREN: A DESCRIPTIVE STUDY IN A TERTIARY CENTRE, MALAYSIA

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Background

Diagnostic open lung biopsy is an option for children when the diagnosis is not available with standard investigations. Prior studies have cited morbidity rates of up to 30% and mortality rates ranging from 0.9% to 12% in adult patients.

Objective

To describe practices and complications related to diagnostic open lung biopsies in children.

Methods

This was a retrospective single-centre study on children aged 12 years old and below who underwent diagnostic open lung biopsy in this centre between 2009 and 2022.

Results

A total of 58 children had diagnostic open lung biopsies. Their median age was 9 months (1,133). Twenty-three of them were born prematurely, with a median gestation of 37 weeks (24, 40), males (36), and ventilated at birth (44.8%). There were 32 (55.2%) oxygen-dependent children from birth. The two main diagnoses were Childhood Interstitial Lung Disease, chILD (40), and Pulmonary Hemosiderosis (18). Surgical procedures were thoracotomy (4), thoracotomy with flexible bronchoscopy (42), thoracotomy, flexible bronchoscopy and gastrostomy (6), and thoracotomy, flexible bronchoscopy, and others (6). The median anesthesia duration was 130 minutes (65, 270). Intra-operative anesthesia complications were seen in 9 (15.7%) patients (8 had desaturations below 85%). Overall postoperative complications were 10% including the dislodged endotracheal tube (1), subcutaneous emphysema (1), anemia (1), fluid overload (1), nosocomial pneumonia (1), upper airway oedema (1), and blood transfusion reaction (1). There were no intraoperative surgical-related complications. Oxygen dependency prior to surgery did not show a significant association with the duration of anesthesia (p= 0.562) and intraoperative complications (p=0.464). No mortality related to the procedure was recorded. All except two patients had histological confirmation diagnoses.

Conclusion

Diagnostic open lung biopsy in children is an invasive procedure but has had low morbidity and mortality with a good diagnostic yield rate in this centre.

OPP6

NEONATAL RESPIRATORY OUTCOMES AMONG PREGNANCIES WITH DIABETES MELLITUS

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Introduction

Diabetes mellitus (DM) during pregnancy is classified as Type 1 or Type 2 pre-gestational diabetes mellitus (PGDM) and gestational diabetes mellitus (GDM). DM during pregnancy has been demonstrated in many studies to affect maternal and fetal outcomes.

Objective

To determine the Neonatal Respiratory outcomes of pregnancy with uncontrolled (UCDMs) and controlled (CDMs) based on maternal HbA1c levels.

Methodology

A retrospective study involving newborns of women with DM during pregnancy from 1st September 2019 until 29th February 2020. DM is classified as UCDM if HbA1c $\geq$ 6% and CDM if < 6%.

Results

A total of 171 pregnant women with DM; PGDM (39,22.5%) and GDM (134,77.5%) were included. About 76% were multigravida and they gave birth to 173 newborns. The median maternal age was 33 years (19, 45). Their treatment includes oral hypoglycemic (24.9%), insulin (12.7%), combined (24.3%), and diet control (38.2%). Median birth weight was 3085 grams (995, 5020). Apgar score less than 9 at 1 minute and less than 10 at 5 minutes were 17.9% and 13.9% respectively. About 74% had normal blood glucose in the first 24 hours of life but 1.7% had persistent hypoglycemia after 24 hours. Complications seen were Neonatal sepsis (4), IRDS (10), Congenital pneumonia (5), and Transient Tachypnea of the newborn (26). A total of 4 stillbirths and 3 neonatal deaths were observed. There were higher occurrences of preterm deliveries (29.3% vs 13.6%), neonates requiring ventilator support (22% vs 3%), neonates on oxygen therapy (29.3% vs 10.6%), and neonatal sepsis (7.5% vs 1.5%) in UCDMs compared to CDMs. UCDMs (4.9%) had more neonates hospitalized at 28 days than CDMs (0%). UCDMs also had higher neonatal mortality than CDMs.

Conclusions

Serious Neonatal Respiratory complications, neonatal mortality, and increased healthcare expenditures from prolonged stay can be prevented with good maternal diabetes mellitus control and management.

OPP7

A RETROSPECTIVE STUDY ON ADVERSE EFFECTS FOLLOWING COVID-19 VACCINATION AMONG CHILDREN AND TEENAGERS IN KLANG VALLEY

Ching Hai Lee[1], Amelia Alias [3], Hazilawati Hussin[4] , Siti Syawanatul Zahraa' Mohamed Rahim[5] , Rohani Khalid [3], Muhammad Kasyful Azim Yahya[2], Shamsul Anuar Kamarudin[2], Sabeera Begum Kader Ibrahim[3], Asiah Kassim [1,3]

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Introduction

The most effective way of controlling pandemic infection is prevention via vaccination. However, the safety of the Covid-19 vaccines among children and teenagers was a major parental and public concern.

Objective

To determine the adverse effects (AEs) of Covid -19 vaccine among children and teenagers in Klang Valley.

Methodology

A retrospective study involving 2 populations. First, were children aged 5 to 11 years old from 15th November 2021 until 30th May 2022 who received the Covid-19 Pfizer-BioNTech (BNT162b2) vaccine. Second were teenagers aged 12 to less than 18 years old who received the same vaccine from 1st September until 15th November 2021. Their parents and children above 5 years old were interviewed via telephone on the AE of vaccination after available consent.

Results

A total of 200 children and 300 teenagers were recruited with 283 (56.6 %) males and their mean age was 11.50 ± 3.35 years. During the first vaccination, 305 (61%) experienced local AEs (injection site pain, swelling and redness), 117 (23.4%) had general symptoms (fever, lethargy, giddiness, chills and flush) and 86 (17.2%) had systemic AEs during the first 48 hours. Between the second to seven days, 16 (3.2%) had local AEs, 12 (2.4%) had general symptoms, and 10 (2%) had systemic AEs. Almost all AEs resolved by the second week. For the second vaccination, 300 (60%) had local AEs, 94 (18.8%) had general symptoms, and 32 (6.4%) had systemic AEs within the first 48 hours. Less than 4% had AEs between the second to seventh day. Almost all AEs were resolved by the second week of vaccination. AEs were not related to their underlying medical problems, age or gender.

Conclusion

A common AEs following Covid-19 vaccination among children and teenagers was localised injection site pain within the first 48 hours. No serious AEs reported.

OPP8

PERCEPTION OF ILLNESS, RECOGNITION OF EXACERBATION SYMPTOMS AND BURDEN OF CARE FOR CHILDREN WITH CHRONIC SUPPURATIVE LUNG DISEASE (CSLD): PARENTS/CARERS' PERSPECTIVE

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Background:
Understanding the parents'/carers' perspective is imperative in the multidisciplinary management of CSLD in children. However, the data were scarce. We present a single-centre cross-sectional study in parents/carers of 25 children with CSLD conveying their voices relating to (a) perception and understanding of illness, (b) recognition of exacerbation symptoms, (c) burden of illness, and (d) main concerns.

Methods:
Parents/carers of patients with CSLD from the Paediatric Respiratory Clinic, Hospital Sultanah Aminah Johor Bahru (HSAJB), were interviewed, and records were reviewed. A validated, 8-item Parent Cough-Specific Quality of Life (PC-QOL-8) questionnaire translated into Bahasa Malaysia was administered. Data were analysed with SPSS v18.0.

Results:
Only 44% of our parents/carers (median age of 43) could accurately name/describe the diagnosis, whilst 36% described it as "scarred lungs". Mostly (72%) never received a written action plan but would seek treatment after 2 to 3 days of wet cough. Only 16% of them received 14 days of antibiotics during an exacerbation. 76% of parents recognised the increased frequency of cough as an exacerbation. Quality of life (QOL) was impaired (median PC-QOL-8 score 3.38). Primary concerns were breathlessness (32%), reduced exercise tolerance (28%), and frequent chest infection (28%).

Discussion:
Parents remained inconsistent in perceiving the illness well, correctly recognising the exacerbation, or receiving treatment promptly. The antibiotic duration was inadequate compared to international standard practice, whilst the parents' QOL was low, indicating more parental education work is required and identifying the parental concerns during routine management.

Conclusion: Voices of parents/carers should be heard, and parental CLSD education is essential to manage CSLD in children optimally.

CASE REPORTS (ADULT)

CRA1	**WILLIAM CAMPBELL PLUS SYNDROME: A NOVEL DISEASE ENTITY OR AN UNUSUAL PRESENTATION OF A RARE DISORDER?** **Chun Ian Soo1**, Wai Ling Leong2, Leng Cheng Sia1, Swee Wei Leong3, Boon Hau Ng4 *1. Division of Respiratory medicine, University of Malaya Medical Center, Kuala Lumpur, Malaysia* *2. Department of Biomedical Imaging, Universiti Malaya Research Imaging Centre, Universiti Malaya, Kuala Lumpur, Malaysia* *3. Department of Pulmonology, Serdang Hospital, Selangor, Malaysia.* *4. Respiratory unit, Universiti Kebangsaan Malaysia Medical Center, Kuala Lumpur, Malaysia*	**94**
CRA2	**INTRAPLEURAL STREPTOKINASE IN TRAUMATIC HEMOTHORAX: IS IT SAFE?** **Amir Asyraf Mohd Rushdan**, Chan Tha A Hing, Mohd Faizul Abu Samah, Arvindran Alaga *Respiratory Department, Hospital Sultanah Bahiyah, Alor Setar, Kedah*	**95**
CRA3	**A RARE CASE REPORT OF COLONIC METASTASIS FROM PRIMARY LUNG ADENOCARCINOMA** **Amir Asyraf Mohd Rushdan**, Chan Tha A Hing, Mohd Faizul Abu Samah, Arvindran Alaga *Respiratory Department, Hospital Sultanah Bahiyah, Alor Setar, Kedah*	**96**
CRA4	**SUBCUTANEOUS DRAINAGE FOR THE TREATMENT OF SURGICAL EMYPHYSEMA: IS IT FEASIBLE?** **Nur Fatin Syazana Binti Mat Husin**, Arvindran Alaga, Mohd Faizul Abu Samah, Chan Tha A Hing *Respiratory Department, Hospital Sultanah Bahiyah Alor Setar Kedah*	**97**
CRA5	**RARE CASE SERIES OF LUNG ADENOCARCINOMA WITH CHOROIDAL METASTASIS AS THE INITIAL PRESENTING COMPLAINT** **Che Athirah Che Azmi,** Chan Tha A Hing, Mohd Faizul Abu Samah, Arvindran Alaga *Respiratory Department, Hospital Sultanah Bahiyah, Alor Setar, Kedah, Malaysia*	**98**
CRA6	**THERAPEUTIC BENEFITS OF BENRALIZUMAB IN SEVERE ASTHMA PATIENTS: INITIAL CASE SERIES FROM NORTHERN MALAYSIA** **Izzatul Nadzirah Ismail1**, Amir Asyraf Mohd Rushdan1, Chan Tha A Hing1, Muhd Faizul Abu Samah1, Arvindran Alaga1 *1. Respiratory Department, Hospital Sultanah Bahiyah, Kedah, Malaysia*	**99**
CRA7	**I'M ONE IN A MILLION: A RARE CASE OF SYNCHRONOUS PLEURAL-PERITONEAL MESOTHELIOMA** Justin Yu Kuan Tan[1],**Nadiah Saqiinah Abdul Jalil[1]**, Nurul Majidah Abdul Razak[1], Azlina Samsudin[1], Fatin Muhamad Tamyez[2], Nurnadiah A Denil[3] Zuhanis abdul Hamid[4], Rozliana[5], Muthukkumaran Thiagarajan[6] *Respiratory Unit Hospital Sultanah Nur Zahirah, Terengganu, Malaysia*	**100**
CRA8	**A RARE CASE OF ACTINOMYCOSIS MEYERI & PARVIMONAS MICRA EMPYEMA** **Nadiah Saqiinah Abdul Jalil[1],** Rozanah Abd Rahman[1] *1.Respiratory Department, Hospital Sultanah Aminah, Johor Bahru, Malaysia*	**101**
CRA9	**A UNIQUE CHALLENGE - AIR LEAK IN A PREGNANT LADY** **Li Yee Yip**, Wang Jie Tan, Ashwini Chandrasekaran *Department of Respiratory, Hospital Seberang Jaya, Pulau Pinang, Malaysia*	**102**
CRA10	**A CASE OF PRIMARY PULMONARY HEPATOID ADENOCARCINOMA** **Yun Fei Liang[1]**, Suraya Samsudin[2], Raja Zubaidah[2], Haryati Husin[3], Adam Malik[4], May Feng Chen[5], May Ling Ong[1] *[1]Hospital Sultanah Nora Ismail, Batu Pahat, Malaysia* *[2]Hospital Sultanah Aminah, Johor Bahru, Malaysia* *[3]Hospital Pakar Sultanah Fatimah, Muar, Malaysia* *[4]Hospital Umum Sarawak, Sarawak, Malaysia* *[5]Hospital Sultan Ismail, Johor Bahru, Malaysia*	**103**
CRA11	**ORGANISING PNEUMONIA – RARE COMPLICATION OF MYCOBACTERIUM TUBERCULOSIS** **Alia Anis Yahya,** JustinTan, Nurul Majidah A.Razak, Azlina Samsuddin ,Wan Aireene W.Ahmad *Respiratory Unit, Hospital Sultanah Nurzahirah, Kuala Terengganu, Malaysia* *Department of Radiology School of Medical Sciences, Universiti Sains Malaysia*	**104**

CRA12	**UNRAVELLING THE ENIGMA: UNILATERAL PULMONARY VENOUS ATRESIA AS AN UNCOMMON CAUSE OF HEMOPTYSIS IN A YOUNG MALE PATIENT** **Z.Sanusi[1],** U.N.Daut[1] *[1]Department of Medicine, Hospital Sultan Abdul Aziz Shah - Serdang (Selangor) (Malaysia)*	**105**
CRA13	**A PATIENT'S JOURNEY: CONFRONTING INVASIVE ASPERGILLOSIS WITH COPD** **A.Priyadarsini**, ND.Ummi *Hospital Sultan Abdul Aziz Shah, Selangor, Malaysia.*	**106**
CRA14	**PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN NON- HIV, IMMUNOCOMPROMISED PATIENTS: CASE SERIES** **SH Tey,** TS Ismail, Shamsul AI *KPJ Tawakkal Specialist Hospital, Kuala Lumpur, Malaysia* *KPJ Damansara Specialist Hospital, Selangor, Malaysia* *KPJ University College, Negeri Sembilan, Malaysia*	**107**
CRA15	**ADVANCED STRATEGIES IN EBUS-GUIDED BIOPSIES FOR CHALLENGING CASES** **Chun Ian Soo[1],** Wong Chee Kuan[1] *[1.] Division of Respiratory medicine, University of Malaya Medical Center, Kuala Lumpur, Malaysia*	**108**
CRA16	**UNRAVELING THE ENIGMA: RECURRENT POST-TRAUMATIC PLEURAL EFFUSION - A CASE OF FLUID CHALLENGES** **Sze Kye Teoh[1],** Kah Kheng Tan[2], Amirah Aziz[2], Suzila Che Sayuti[2], Mat Zuki Mat Ja'eb[2], Azza Omar[2] *[1]Sarawak General Hospital, Kuching, Sarawak.* *[2]Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan.*	**109**
CRA17	**A RARE CASE OF MASSIVE HAEMOPTYSIS - UNVEILING PULMONARY ARTERIOVENOUS MALFORMATION** **Siti Nabilah Azman[1],** Syahrinnaquiah Samsuddin[1], Wan Jen Lye[1] *[1] Department of Internal Medicine, Hospital Selayang, Selangor.*	**110**
CRA18	**BEYOND LUNGS AND BONES: UNVEILING THE VEILED INTRIGUE OF PLEURAL EFFUSION IN ANTI-SYNTHETASE SYNDROME** **Sze Kye Teoh[1],** Ming Choo Loh[2], Nor Mardiah Mohd Yusof[2], Suzila Che Sayuti[2], Mat Zuki Mat Ja'eb[2], Azza Omar[2] *[1]Sarawak General Hospital, Kuching, Malaysia* *[2]Hospital Raja Perempuan Zainab II, Kota Bharu, Malaysia*	**111**
CRA19	**SYSTEMIC AMYLOIDOSIS DIAGNOSED VIA LUNG BIOPSY** **Noor Eliana Rozani,** Zamzurina Abu Bakar *Institut Perubatan Respiratori, Kuala Lumpur, Malaysia*	**112**
CRA20	**HYPERSENSITIVITY PNEUMONITIS: ANTIGEN DIVERSITY AND DISEASE IMPLICATIONS** **Subramaniam Ponnuvelu**, Sarvin Vignesh *Hospital Queen Elizabeth, Kota Kinabalu, Sabah, Malaysia*	**113**
CRA21	**PERSISTENT THYROTOXICOSIS AFTER DUPILUMAB IN A CASE OF SEVERE EOSINOPHILIC ASTHMA** **Leng Cheng Sia[1],** Chee Kuan Wong[1,2], Chun Ian Soo[1,2], Nur Husna Ibrahim[1] *[1]Department of Medicine, University Malaya Medical Centre, Kuala Lumpur (Malaysia).* *[2]Department of Medicine, Faculty of Medicine, University of Malaya (Malaysia).*	**114**
CRA22	**MILLIARY NODULES: NOT ALWAYS TUBERCULOSIS (CASE SERIES)** **Zul Amali Che Kamaruddin[1],** Noor Izyani Zakaria[1], Suzila Che Sayuti[1], Mat Zuki Mat Jaeb[1], Azza Omar[1], Mohd Raduan Bin Mat Ghani[1] *[1]Respiratory Unit, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan*	**115**
CRA23	**OUTCOME OF EVEROLIMUS AND PLEURODESIS IN TUBEROUS SCLEROSIS ASSOCIATED LYMPHAGIOLEIOMYOMATOSIS WITH RECURRENT PNEUMOTHORAX: A CASE REPORT** **Zul Amali Che Kamaruddin[1],** Noor Izyani Zakaria[1], Nurul Izzah Mohd Sukri[1], Suzila Che Sayuti[1], Mat Zuki Mat Jaeb[1], Azza Omar[1], Nurhidayah Mukhtar[1] *[1]Respiratory Unit, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan*	**116**
CRA24	**A CASE OF SEVERE ALLERGIC BRONCHIAL ASTHMA AND LYMPHOCYTIC PLEURAL EFFUSION: IS IT A RARE CORRELATION?** **Zul Amali Che Kamaruddin[1],** Noor Izyani Zakaria[1], Suzila Che Sayuti[1], Mat Zuki Mat Jaeb[1], Azza Omar[1], **Rajiv Subramaniam[1]**	**117**

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CRA25	**PLEUROPULMONARY COMPLICATIONS OF AMOEBIC LIVER ABSCESS: A CASE REPORT** **Zul Amali Che Kamaruddin[1],** Noor Izyani Zakaria[1], Suzila Che Sayuti[1], Mat Zuki Mat Jaeb[1], Azza Omar[1], **Mohd Faiz Rosli[1] ,** Mohd Raduan Mat Ghani[1] [1]*Respiratory Unit, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan*	**118**
CRA26	**A RARE MANIFESTATION OF BULLOUS PEMPHIGOID SECONDARY TO ISONIAZID AND RIFAMPICIN IN PULMONARY TUBERCULOSIS MANAGEMENT** **Bazli Bahar,** Rozanah Abd Rahman *Department of Respiratory Medicine, Hospital Sultanah Aminah Johor Bahru, Malaysia*	**119**
CRA27	**WITHDRAWN**	**120**
CRA28	**DIFFUSE LARGE B CELL LYMPHOMA(DLBCL) ASSOCIATED MALIGNANT PLEURAL EFFUSION(MPE): A CASE REPORT** **Lily Ding,** Nai-Chien Huan, Subramaniam P *Respiratory Department, Hospital Queen Elizabeth, Kota Kinabalu, Sabah*	**121**
CRA29	**AORTIC ANEURSYM AND PLEURAL EMPYEMA: THE CHICKEN OR THE EGG FIRST?** **FUI BEE WOO[1], NAI CHIEN HUAN[1], KUNJI KANNAN SIVARAMAN[1]** [1]*RESPIRATORY DEPARTMENT, QUEEN ELIZABETH HOSPITAL, KOTA KINABALU*	**122**
CRA30	**BRONCHIECTASIS AND GRANULOMATOUS SKIN LESIONS IN A YOUNG ADULT- A CASE REPORT OF BARE LYMPHOCYTE SYNDROME** **Jun Lyn Low1**, Hema Ramarmuty1, Nai-Chien Huan1, Sangeetha Siniah2, Lock Hock Ngu3 *1 Respiratory Department, Hospital Queen Elizabeth, Kota Kinabalu, Sabah* *2 Paediatric Infectious Disease and Immunology Unit, Hospital Tunku Azizah, Kuala Lumpur* *3 Genetic Department, Hospital Kuala Lumpur, Kuala Lumpur*	**123**
CRA31	**PULMONARY AMYLOIDOSIS MIMICKING METASTATIC LUNG NODULE: A CASE REPORT** **Ranjitha Chandran[1]**, Lam Yoke Fong[1] *Department of Respiratory, Hospital Raja Permaisuri Bainun[1]*	**124**
CRA32	**CASE SERIES OF ACUTE AND ACCELERATED SILICOSIS** **Mathivanan Suppiah [1]**, Chan Tha Hing [1,] Lalitha Pereirasamy[1] *1. Respiratory department, Hospital Pulau Pinang, Penang Malaysia*	**125**
CRA33	**WHEN SMOKE TAKES ITS TOLL: A RARE DISEASE WITH RECURRENT PNEUMOTHROAX** **Mathivanan Suppiah[1]**, Siti Rohani Mohd Yakop[2], **Syazatul Syakirin Sirol Aflah[1]** [1]*Institut Perubatan Respiratori,Kuala Lumpur* [2]*Hospital Kuala Lumpur*	**126**
CRA34	**PRIMARY ADENOID CYSTIC CARCINOMA (ACC) OF LUNG MIMICKING BRONCHIAL ASTHMA IN PREGNANCY – A CASE REPORT** **Teegeena Jeeva Kumar**; Arvindran Alaga *1.Medical and Radiology Department Hospital Sultanah Maliha* *2.Respiratory and Histopathology Department Hospital Sultanah Bahiyah* *3.Institute Kanser Negara*	**127**
CRA35	**BROWN PLEURAL EFFUSION SUSPICIOUS FOR BILOTHORAX IN A PATIENT WITH LUNG ADENOCARCINOMA** **Yu Wei CHEAH,** Nai-Chien HUAN, Subramaniam PONNEVELU *Department of Respiratory Medicine, Hospital Queen Elizabeth 1, Kota Kinabalu, Sabah, Malaysia*	**128**
CRA36	**MAKING A POINT WITH HYDRO-POINT** **Mohd Jazman Che Rahim[1,2], Mohamed Faisal Abdul Hamid[3], Andrea Ban Yu-Lin[3]** [1]*Universiti Sains Malaysia Health Campus, Kota Bharu, Malaysia;* [2]*Hospital Universiti Sains Malaysia, Kota Bharu, Malaysia;* [3]*Faculty of Medicine Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.*	**129**
CRA37	**THE ROLE OF COLOUR DOPPLER AND M-MODE ULTRASOUND IN LUNG COLLAPSE AND PLEURAL EFFUSION** **Mohd Jazman Che Rahim[1,2]**, Mohamed Faisal Abdul Hamid[3], Andrea Ban Yu-Lin[3] [1]*Universiti Sains Malaysia Health Campus, Kota Bharu, Malaysia;* [2]*Hospital Universiti Sains Malaysia, Kota Bharu, Malaysia;* [3]*Faculty of Medicine Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia.*	**130**
CRA38	**COMPLEX PARAPNEUMONIC EFFUSION: MORE THAN MEETS THE EYE**	**131**

	Mohd Jazman Che Rahim[1,2], Wan Aireene Wan Ahmed[1,2], Mohamed Faisal Abdul Hamid[3], Andrea Ban Yu-Lin[3] *[1]Universiti Sains Malaysia Health Campus, Kota Bharu, Malaysia; [2]Hospital Universiti Sains Malaysia, Kota Bharu, Malaysia; [3]Faculty of Medicine Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia*	
CRA39	**MASSIVE HEMOPTYSIS FOLLOWING RASMUSSEN'S ANEURYSM** **Guat Yee Lim[1]**, Yen Shen Wong[2], Bushra Johari[2], Aisya Natasya Musa[2] *[1]Department of Internal Medicine, Hospital Selayang, Batu Caves, Malaysia* *[2]Faculty of Medicine, University Teknologi MARA (UiTM) Sg Buloh, Selangor, Malaysia*	**132**
CRA40	**KRUKENBERG TUMOUR AS THE INITIAL MANIFESTATOIN OF LUNG ADENOCARCINOMA** **Guat Yee Lim[1],** Yen Shen Wong[2], Zarah tawil[3], Roqiah Fatmawati Abdul Kadir[4], Aisya Natasya Musa[2] *[1]Department of Internal Medicine, Hospital Selayang, Batu Caves, Malaysia* *[2]Faculty of Medicine, University Teknologi MARA (UiTM) Sg Buloh, Selangor, Malaysia* *[3]Department of Pathology, Hospital Selayang, Batu Caves, Malaysia* *[4]Department of Radiology, University Teknologi MARA (UiTM) Sg Buloh, Selangor, Malaysia*	**133**
CRA41	**HEPATOID ADENOCARCINOMA OF THE LUNG WITH HARD PALATE METASTASIS: REVIEW OF A RARE PRESENTATION OF LUNG CANCER** **Am Basheeri Alias[1]**, Yen Shen Wong[1], Mohd Shazwan Shahrudin[1],Harrissa Husainy Hasbullah[2], Aisya Natasya Musa[1] *[1]Faculty of Medicine, University Teknologi MARA (UiTM) Sg Buloh, Selangor, Malaysia* *[2]Oncology Unit, Faculty of Medicine, UiTM sg Buloh, Selangor, Malaysia*	**134**
CRA42	**OVERCOMING THE CHALLENGES OF HIGH-ALTITUDE TRAVEL WITH LUNG DISEASE: REFLECTIONS ON A SOUTH CHINA SEA JOURNEY** **Yen Shen Wong[1]**, Ummul Nurkhairiyah Sulaiman[1], Aisya Natasya Musa[1], Fauziah Ahmad[1], Am Basheeri Alias[1] *[1]Faculty of Medicine, Universiti Teknologi MARA, Sungai Buloh, Malaysia*	**135**
CRA43	**ANTI KU-ASSOCIATED INTERSTITIAL LUNG DISEASE** Justin Yu Kuan Tan, **Nurul Majidah Abdul Razak**, Azlina Samsudin *Respiratory Unit Hospital Sultanah Nur Zahirah, Terengganu, Malaysia*	**136**
CRA44	**A CURIOUS CASE OF MALIGNANT PLEURAL MESOTHELIOMA** **Sumithra Appava[1],** Deepa Priya Naidu Subramaniam[1], Lee Fong Wan[2], Tan Ai Lian[3], Lalitha Pereirasamy[1], Irfhan Ali Hyder Ali[1], Gary Lee[4], Celia Green[5] *Respiratory Department, Hospital Pulau Pinang, Pulau Pinang, Malaysia* *Pathology Department, Hospital Pulau Pinang, Pulau Pinang, Malaysia* *Oncology Department, Hospital Pulau Pinang, Pulau Pinang, Malaysia* *Respiratory Department, Sir Charles Gairdner Hospital, Australia* *Pathology Department, Sir Charles Gairdner Hospital, Australia*	**137**
CRA45	**PRIMARY EWING SARCOMA OF THE LUNG: A RARE CAUSE OF HEMOTHORAX IN A YOUNG GIRL** **Aina Salihah binti Shahruniza[1],** Nga Hung Ngu[1], Chan Sin Chai[1], Sze Kye Teoh[1], Sze Shyang Kho[1], Swee Kim Chan[1], Siew Teck Tie[1], Mei Ching Yong[1], Jenny Tung Hiong Lee[2] *[1]Respiratory Medicine Unit, Medical Department, Sarawak General Hospital, Kuching, Malaysia* *[2]Pathology Department, Sarawak General Hospital, Kuching, Malaysia*	**138**
CRA46	**CASE REPORT: MASSIVE HEMOPTYSIS IN NORMAL CHEST RADIOGRAPHY** **Syafiqah Najmi Khalid,** Nadiah Saqiinah Abdul Jalil, Ahmad Adib Mohd Nasir, Nurul Majidah Abd Razak, Azlina Samsudin *Respiratory Unit, Hospital Sultanah Nur Zahirah, Kuala Terengganu*	**139**
CRA47	**IDIOPATHIC HYPEREOSINOPHILIC SYNDROME IN A TEENAGER** **Subramaniam Ponnuvelu,** Ayas Ali *Hospital Queen Elizabeth, Kota Kinabalu, Sabah*	**140**
CRA48	**I CAN'T SIT UP!** **Mohd Fathhi Fadzli[1],** Nadiah Saqiinah A.Jalil[2], Nurul Majidah A.Razak[3] ,Azlina Samsudin[4] *Respiratory Unit, Hospital Sultanah Nur Zahirah, Kuala Terengganu, Malaysia*	**141**
CRA49	**PULMONARY ENTERIC ADENOCARCINOMA** **Ayas Ali,** Aizat *[1] Respiratory Department, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia*	**142**
CRA50	**CANCER CHAMELEON: DECODING PULMONARY SCLEROSING PNEUMOCYTOMA - A TUMOUR OF MANY FACES**	**143**

	Sze Kye Teoh, Sze Shyang Kho, Siew Teck Tie *Sarawak General Hospital, Kuching, Sarawak*	
CRA51	**ENDOBRONCHIAL HAMARTOMA: THE SURPRISING CULPRIT BEHIND FOCAL BRONCHIECTASIS** **Shan Kai ING**[1] MD shankai1992@gmail.com Yih Hoong LEE[1] MD yihhoong1992@gmail.com Kelly Kee Yung WONG[2] MD kellywky83@gmail.com Teresa Fuh Guang CHUA[3] MD teresa.chua@hotmail.com Khai Fatt CHAO[1] MD chao_85@yahoo.com Sze Shyang KHO[4] MD khosze@moh.gov.my *[1]Department of Medicine, Sibu General Hospital, Ministry of Health Malaysia, Sibu, Sarawak, Malaysia.* *[2]Department of Radiology, Sibu General Hospital, Ministry of Health Malaysia, Sibu, Sarawak, Malaysia.* *[3]Department of Pathology, Sarawak General Hospital, Ministry of Health Malaysia, Kuching, Sarawak, Malaysia.* *[4]Division of Respiratory Medicine, Department of Medicine, Sarawak General Hospital, Ministry of Health Malaysia, Kuching, Sarawak, Malaysia.*	**144**

CRA1

WILLIAM CAMPBELL PLUS SYNDROME: A NOVEL DISEASE ENTITY OR AN UNUSUAL PRESENTATION OF A RARE DISORDER?

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Introduction

Williams-Campbell Syndrome (WCS) is a rare congenital condition characterized by the absence or defect of bronchial wall cartilage in the subsegmental bronchi. This leads to the collapse of distal airways beyond the third-order bronchi, resulting in complications such as bronchiectasis.

Case report

A 40-year-old man with an 8-pack-year smoking history presented with worsening productive cough and dyspnea (mMRC scale 2). There was no significant past medical history. A computed tomography (CT) scan of the thorax revealed cystic bronchiectasis changes in both upper, lingula and right middle lobe. On dynamic CT images, these cystic bronchiectasis, affecting the 4th to 6th order subsegmental bronchi, collapsed during expiratory acquisition. An intriguing finding was the accompanying expiratory collapse of the trachea and central bronchi. Additionally, bullous emphysematous changes were observed in both lower lobes. Other congenital causes of bronchiectasis were screened and excluded. There was no airway diverticulum on bronchoscopy inspection. Pulmonary function testing demonstrated a severe obstructive ventilatory defect (FEV1 of 30% predicted, and FEV1/FVC ratio of 53%). The patient was initiated on bronchodilators, vaccination, and a regular pulmonary rehabilitation program.

Discussion

The distinct features that differentiate WCS from Mounier-Kuhn syndrome (MKS) lies in the normal calibre of the trachea and central bronchi in WCS. MKS is characterized by a dilated central tracheobronchus with airway malacia during expiration. This is the first reported case of collapsed of distal cystic bronchiectasis combined with central tracheobronchus on biphasic CT. These findings could suggest the possibility of a novel disease entity, which we termed "William Campbell Plus Syndrome."

CRA2

INTRAPLEURAL STREPTOKINASE IN TRAUMATIC HEMOTHORAX: IS IT SAFE?

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Introduction

Traumatic hemothorax, characterised by blood or blood clot accumulation in the pleural cavity, can be effectively managed through enzymatic debridement, which is often overlooked as a treatment option. Previous studies have demonstrated that administering streptokinase directly into the pleural space promotes fibrinolysis and facilitates the resolution of blood clots. Although tube thoracostomy is commonly emplyoed as an initial management approach, it exhibits a notable failure rate 5% to 30% leading to the formation of a clotted hemothorax.

Methodology

We present the case of a 63-years old male who presented with a one-week history of cough, reduced oral intake, and lethargy. Physical examination revealed reduced breath sound on the left side, while a chest x-ray confirmed the presence of a left pleural effusion. Diagnostic tapping revealed hemoserous exudative fluid, prompting further investigation through pleuroscopy. A pleuroscopic examination revealed the presence of fresh blood and blood clots. A chest tube was inserted, and a CTA thorax performed, which confirmed no active extravasation from intercostal vessels.

Since the patient has multiple comorbidities and is on high-flow mask, he is deemed to be at high risk for surgical evacuation of blood clots. We decided to give low dose intrapleural streptokinase to dissolve the clots. Following 3 days of administration, the chest x-ray improved, the patient was able to wean off to room air, and the pleural fluid changed from frank blood to serous in colour

Conclusion

Low dose intrapleural streptokinase can be used safely for traumatic hemothorax, which reduces the need for surgical intervention but also leads to shorter hospital stays and improved patient outcomes.

CRA3

A RARE CASE REPORT OF COLONIC METASTASIS FROM PRIMARY LUNG ADENOCARCINOMA

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Introduction

Lung cancer is among the most prevalent cancers in Malaysia and is known for its role in cancer-related mortality. Metastases to the colon from primary adenocarcinoma of the lung is a rare occurrence. Gastrointestinal tract metastasis from lung cancer is rare, documented cases have shown a prevalence rate ranging from 0.5% to 14%

Methodology

We report a rare case of a 65-year-old woman who experienced chronic coughing, anorexia, left-sided abdominal pain, and right neck swelling. Upon physical examination, a mass was discovered in her left iliac fossa, and a trucut biopsy of the right cervical lymph node revealed metastatic adenocarcinoma originating from the lung.

The patient was referred to the surgical team for further assessment of the left iliac fossa mass that raised the possibility of a synchronous tumour. A colonoscopy revealed a tumour in the descending colon, while a computed tomography scan of the abdomen confirmed the presence of a mass that originated from the colon. Histopathological analysis of the colonic mucosa shows that the metastatic adenocarcinoma originated in the lung.

Conclusion

This case shows the uncommon occurrence of colonic metastasis from lung cancer as well as the significance of taking gastrointestinal metastasis into account in lung cancer patients who have abdominal symptoms

CRA4

SUBCUTANEOUS DRAINAGE FOR THE TREATMENT OF SURGICAL EMYPHYSEMA: IS IT FEASIBLE?

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Introduction

Surgical (subcutaneous) emphysema is a condition caused by the accumulation of air in subcutaneous tissue, which can track along the fascia. It is a complication of intercostal diaphragm insertion. Surgical emphysema can be treated either conservatively or by a simple intervention, such as subcutaneous drainage via an intercostal drain.

Methodology

We present a case series of patients who have been treated for surgical emphysema by using subcutaneous drainage and ended up with an excellent outcome.
The first patient, a 33-year-old male, was diagnosed with pulmonary tuberculosis smear-positive, complicated by a left pneumothorax. After chest tube insertion, he developed surgical emphysema, which extended until the abdomen; thus, a subcutaneous drain was inserted. After 10 days, the emphysema improved, and the subcutaneous drain was removed.
The second patient is a 45-year-old smoker diagnosed with left-sided pneumothorax and surgical emphysema. Chest tube inserted; left pneumothorax was improving. However, surgical emphysema was worsening. Thus, a subcutaneous drain was inserted; subsequently, symptoms improved, and both drains were removed within 3 days.

Conclusion

The use of subcutaneous drainage for the treatment of surgical emphysema has a favorable outcome and is safe.

CRA5

RARE CASE SERIES OF LUNG ADENOCARCINOMA WITH CHOROIDAL METASTASIS AS THE INITIAL PRESENTING COMPLAINT

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Introduction

The incidence of lung cancer with intraocular metastasis is extremely low, and it is rarely identified prior to the diagnosis of primary malignancy. Eye examinations and extensive investigations should be performed to identify primary malignancies.

Methodology
We present a case series of choroidal eye metastasis as initial presentation of lung adenocarcinoma.

1st case
A 44-year-old Malay lady presented with left eye metamorphosis and blurring of vision for 3 months, progressing to complete loss of vision. She had a massive right pleural effusion. Computed tomography of the orbit shows dislocation of the left eye lens and focal choroidal detachment. Pleuroscopy was done, and a tissue biopsy showed lung adenocarcinoma. She completed 6 cycles of Carboplatin/Pemetrexed followed by 10 cycles of single Pemetrexed. Now she is on nivolumab as a second-line chemotherapy. Currently she is well.

2nd case
A 46-year-old Chinese lady presented with left eye blurring and worsening vision for 2 weeks. Examination of the left eye revealed choroidal pigmentary changes, a 'Leopard Spot', drusens, and retinal oedema. She complained of right neck swelling, and a biopsy of the right supraclavicular lymph node revealed metastatic lung adenocarcinoma with EGFR positive exon 19. The patient was started on Osimertinib with a dose of 80mg OD. Currently she is well.

Conclusion
In conclusion, orbital metastases of lung adenocarcinoma are highly rare and require a high index of clinical suspicion, especially in females, to detect and manage lung carcinoma.

CRA6

THERAPEUTIC BENEFITS OF BENRALIZUMAB IN SEVERE ASTHMA PATIENTS : INITIAL CASE SERIES FROM NORTHERN MALAYSIA

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Introduction

Severe asthma is a heterogeneous condition and divided into type-2(T2) high or T2-low inflammatory airway disease requiring multiple inhalers including systemic corticosteroids. Frequent exacerbations increase the healthcare burden and cost. Patients and healthcare systems would benefit from the availability of clinically effective therapies for severe asthma.

Objectives

This case series is to assess treatment outcomes of adding biologics for treatment of severe asthma.

Methodology

We present a case series about two Malay ladies with severe eosinophilic bronchial asthma under follow-up in the Respiratory Department, Hospital Sultanah Bahiyah, Kedah, Malaysia. Both patients had been diagnosed with bronchial asthma for more than 10 years and were on optimal inhaler therapy and oral montelukast, but still had frequent exacerbations about twice per month. Both patients were started on subcuteneous benralizumab (30 mg) once every 4 weeks for 3 doses, then once every 8 weeks thereafter. Efficacy was monitored via annual asthma exacerbation rates, the asthma control test (ACT), and safety.

Results

In case 1, eosinophil counts reduced from baseline 960-1630 cells/mL to 0 cells/mL while in case 2 eosinophil counts improved from baseline 210-820 cells/mL to 0 cells/mL. Annual exacerbations improved from baseline 23 and 25 exacerbations/year to 1 and 2 exacerbations/year respectively post initiation of biologics. We also observed a significant improvement in ACT score from 13/25 to 22/25 in case 1 and 11/25 to 17/25 in case 2. Improvements can be seen as early as 1 week post starting biologics.

Conclusion

Benralizumab significantly reduced exacerbation rates, hospitalization, and improved ACT score in severe asthma patients.

CRA7

I'M ONE IN A MILLION: A RARE CASE OF SYNCHRONOUS PLEURAL-PERITONEAL MESOTHELIOMA

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Introduction

Mesothelioma is a rare tumor that arises from the mesothelial tissue lining found mainly in the pleural, pericardium, peritoneal, and testis. It is aggressive and carries a poor prognosis[1], Mesothelioma in situ (MIS) is considered premalignant. There is very little literature describing synchronous pleural peritoneal mesothelioma in situ. We report a case of synchronous pleuro-peritoneal mesothelioma without asbestos exposure.

Case Report

A 47-year-old who presented with subacute cough with no constitutional symptoms. Chest X-ray showed right pleural effusion and she was treated for right parapneumonic effusion. Her pleural analysis showed an exudative picture. Pleuroscopy found a small cluster of nodules over the posterior parietal pleural and scattered nodules over the diaphragm. Histopathology examination revealed mesothelioma in situ, immunohistochemistry (IHC) shows positive calretinin, Podoplanin, and Wilms' tumor 1 (WT-1), whereas negative for Thyroid transcription factor 1(TTF-1), BRCA1 associated protein1 (BAP-1), and Claudin-4. A CT-TAP with FDG-PET shows irregular pleural thickening at the right upper lobe, right hydropneumothorax with no FDG uptake, small subcentimeter nodule at prehepatic and moderate ascites with no FDG uptake. She underwent diagnostic laparotomy to biopsy the peritoneal nodule which showed mesothelioma in situ. Her case was discussed in a Multidisciplinary team (MDT) discussion with a respiratory physician, oncologist, thoracic surgeon, and thoracic radiologist where the diagnosis consensus was synchronous pleuro-peritoneal mesothelioma and chemotherapy cisplatin-pemetrexed. She is currently undergoing chemotherapy.

Conclusion

We highlight the rarity of this synchronous pleural-peritoneal mesothelioma. A comprehensive approach to the diagnosis with MDT discussion can determine optimal treatment in the face of this rare disease.

CRA8

A RARE CASE OF ACTINOMYCOSIS MEYERI & PARVIMONAS MICRA EMPYEMA

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Introduction

Actinomycosis meyeri was first cultured from an empyema patient in 1911 but it is a very rare pathogen. P*arvimonas micra* is an anaerobic Gram-positive cocci that has been associated with polymicrobial infections. Only one prior case has been reported as a mixed infection of *Actinomyces odontolyticus* and *Parvimonas micra* in a patient with lung abscess.

Case Report

A 78 year old man presented with a two week history of shortness of breath and cough. He presented acutely ill. An arterial blood gas showed type 1 respiratory failure. Chest radiograph revealed left sided pleural effusion with consolidation. The patient was intubated and ventilated for four days. A chest tube was inserted and drained purulent like fluid. Pleural fluid analysis was exudative with an LDH of 8814. Pleural fluid cultures grew *Actinomycosis meyeri* & *Parvimonas micra*. Cultures from sputum and blood samples were also negative for tuberculous, bacterial or fungal infection. The patient was treated with IV Ampicillin/ Sulbactam (3g every 6 hours) for 14 days of IV antibiotics. Chest drain was removed after 6 days with a total drainage of 1600 cc. The patient was discharged well and completed a four month course of oral antibiotics and remained well on subsequent follow up.

Discussion & Conclusion

Actinomycosis meyeri and *Parvimonas micra* are rare causes of empyema. Conventional therapy is high-dose intravenous penicillin at a dosage of 18–24 million U/day for 2–6 weeks, followed by oral penicillin or amoxicillin for a period of 6–12 months. *A. meyeri* & *Parvimonas micra* as a source of intrapleural infection is rare but important to identify as it requires a prolonged course of antibiotics.

CRA9

A UNIQUE CHALLENGE - AIR LEAK IN A PREGNANT LADY

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Introduction: Pulmonary tuberculosis (PTB) is a well-known cause of secondary spontaneous pneumothorax. However, in case of persistent air leak, the timing and the indication for surgical intervention is individualized depending on patient's symptoms and surgical risk.

Objectives: This case report aimed to discuss the options of management in spontaneous pneumothorax secondary to pulmonary tuberculosis in patient with high surgical risk.

Methodology: Patient's case was retrieved from follow-up record

Results: A 24-year-old Burmese lady, in her second trimester of pregnancy, was treated as active PTB on day 11 of intensive phase of TB treatment, she presented to the emergency department with cough and shortness of breath. Chest radiograph revealed right pneumothorax and chest drain was inserted but unfortunately complicated with extensive subcutaneous emphysema post chest drain insertion and required intubation for impending respiratory collapse. She was extubated 3 days later however there was persistent air leak of Cerfolio grade I and residual right pneumothorax on chest radiograph. The challenge of management was between conservative management versus surgical intervention in protecting mother and baby wellbeing. The pneumothorax completely resolved after 1 month of inpatient care with anti-tuberculosis and supportive treatment. Patient was discharged home well on day 15 of maintenance phase and was able to continue her pregnancy. There was no recurrence of pneumothorax in the subsequent follow up.

Conclusions: Underlying causes of persistent air leak in secondary spontaneous pneumothorax should be considered in direction of management as spontaneous pneumothorax related to pulmonary tuberculosis should be allowed more time to achieve complete resolution without requiring surgical intervention.

CRA10

A CASE OF PRIMARY PULMONARY HEPATOID ADENOCARCINOMA

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INTRODUCTION

Hepatoid Adenocarcinoma (HAC) is a rare malignancy with aggressive behaviour. The most common site for HAC is gastric. Hepatoid adenocarcinoma of the lung (HAL) is extremely rare, it was reported to account for 2.3% of all HACs, with an incidence of less than 5% among cases of malignant lung tumour. Its microscopic features resembling Hepatocellular Carcinoma (HCC), thus, immunohistochemical (IHC) examination plays a significant role in distinguishing HAL form metastatic HCC.

CASE REPORT

58 years old gentleman, presented to us with shortness of breath, associated with cough and loss of weight. Chest radiograph showed right lung mass with pleural effusion. Lung biopsy histopathological examination showed features consistent with primary pulmonary hepatoid adenocarcinoma: microscopy showed adenocarcinoma, immunohistochemical (IHC) studies revealed diffuse and strong positive CEA, CK7, HepPar1; negative CK20, Napsin A, TTF 1, CD34, p40, Glypican 3, ALK (D5F3). Serial imaging showed fast growing right lung mass. Unfortunately, this gentleman succumbed to disease two months after he first presented to our centre.

DISCUSSION

This patient suffered from a fast-growing lung malignancy. Histopathological examination showed adenocarcinoma with strong positive CEA, CK7 and HepPar1 while negative for other markers, this finding coincide with the diagnosis of HAL.

CONCLUSION / KEY LEARNING POINT

Lung mass which showed microscopic features similar to HCC will need to distinguish from rare malignancy HAC. In HAC, IHC staining will be positive to HepPar1, Cytokeratin 7 (CK7) and CEA. In HCC, while HepPar1 and CEA would stain positive, CK7 would be negative.

CRA11

ORGANISING PNEUMONIA – RARE COMPLICATION OF MYCOBACTERIUM TUBERCULOSIS

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INTRODUCTION:

Tuberculosis remains a prevalent infection worldwide, due to its various mixed clinical findings and poses multiple complications that lead to mortality. However, organizing pneumonia is a rare complication of Mycobacterium infection. Here, we present a case of Severe Pulmonary Tuberculosis with organizing pneumonia.

CASE SUMMARY:

A 16 year old lady without comorbidity, came with prolonged fever, weight loss, cough and progressive breathlessness. Clinical examination does not reveal any autoimmune features or finger clubbing however she had severe respiratory distress with lungs revealed coarse crepitations bilaterally. She was immediately started on NIV however deteriorated thus intubated with high setting ventilator. Serial chest radiographs show progression from tiny miliary nodules to diffuse consolidations complicated with pneumomediastinum, pneumothorax and extensive subcutaneous emphysema. CT Thorax reveals diffuse ground glass densities with numerous tiny cysts within and consolidations with perilobular and arch-like pattern. The autoimmune and Infective screening were negative, however, ETT MTB Genome detection positive . She was started on anti TB, however she succumbed to death.

DISCUSSION:

Organising pneumonia is a result of inflammatory process of the airways, which can be caused by a number of viruses and bacterias, however very few cases reported for mycobacterium tuberculosis. In this case, the serial chest radiographs and CT Thorax reveals a progression from diffuse miliary nodules to features of acute lung injury with organizing pneumonia pattern. These findings coupled with positive TB Genome Detection made the diagnosis of secondary OP is more likely.

CONCLUSION:

Due to its rarity, high clinical suspicion required as early detection will prevent the disease progression.

CRA12

UNRAVELLING THE ENIGMA: UNILATERAL PULMONARY VENOUS ATRESIA AS AN UNCOMMON CAUSE OF HEMOPTYSIS IN A YOUNG MALE PATIENT

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Introduction

Hemoptysis is a common symptom in clinical practice that can stem from a variety of causes, ranging from benign to life-threatening, necessitating prompt and tailored treatment. Pulmonary Venous Atresia is a seldom-reported cause of hemoptysis, particularly in adults.

Case Report

In this case report, a 30-year-old Malay male who had been an active smoker for a decade and vaped for 2-3 years prior presented with hemoptysis. He was referred to a clinic for TB work-up and was subsequently admitted to the hospital due to a persistent cough with blood for two weeks, chest tightness, and a sensation of mucus stuck in the throat. Although he reported feeling lethargic, there are no other significant symptoms. The patient had no history of blood-thinning medication.

The patient underwent several tests, including a Mantoux test, bronchoscopy, and subsequent BAL investigations, all of which showed negative results. A CTA Thorax was performed, revealing the absence of the right pulmonary veins, a smaller right pulmonary artery, and a dilated and tortuous right bronchial artery with no apparent communication between the arterial branches and veins. A Multidisciplinary Meeting was held to discuss the possible aetiology of the patient's condition, and it was determined that the findings suggested pulmonary venous atresia.

The patient's echocardiogram showed normal right ventricular function, no significant mitral regurgitation or stenosis, no tricuspid, aortic, or pulmonary valve abnormalities, and normal pulmonary artery size. The interventricular and atrial septums were also intact, and the tricuspid regurgitation peak gradient was measured at 4.8mmHg, which was considered trivial. The patient's symptoms have since resolved, and he is currently undergoing conservative management and monitoring.

Discussion

Improving clinicians' recognition and prompt diagnosis of this rare condition is crucial, as it expands the aetiology spectrum of hemoptysis in young patients, especially if patients come with a history of recurrent hemoptysis. While pulmonary angiography is typically used for definitive diagnosis, current multislice CT scanners may obviate the need for such invasive procedures.

CRA13

A PATIENT'S JOURNEY: CONFRONTING INVASIVE ASPERGILLOSIS WITH COPD

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Background
Evidence of COPD with risk of invasive pneumonia aspergillosis (IAP) is growing. These patients presented with multiple episodes of infective exacerbations. Prompt diagnosis is important to provide the maximum chance of successful treatment.

Case report
This a case of a 67-year-old man, heavy smoker presented with frequent COPD exacerbations. He underwent multiple rounds of antibiotics which showed no improvement. HRCT showed consolidation around the bronchovascular region with bronchiectasis in the left upper lobe. A bronchoscopy was performed and bronchoalveolar lavage showed aspergillosis. He was prescribed with Voriconazole and his symptoms began to improve remarkably. Subsequent imaging showed positive changes, and he currently receives ongoing care and support at the respiratory clinic.

This case highlights the crucial of early detection of IAP in high-risk COPD patients by bronchoalveolar lavage (BAL), or bronchial washings or brushings for culture which has good yield of cultures. Initiating antifungal therapy promptly can significantly prevent life-threatening complications associated with IAP thus achieving better outcomes. Healthcare professionals must maintain vigilance, recognizing the possibility of fungal infections when COPD patients exhibit unyielding symptoms.

CRA14

PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN NON- HIV, IMMUNOCOMPROMISED PATIENTS: CASE SERIES

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Background: Pneumocystis Carinii Pneumonia (PCP) is a fungal infection that normally affects those who are immunocompromised. These include, but are not restricted to patients with AIDS, autoimmune diseases and those who are on immunosuppressive therapies.

It can cause a fever, cough, exertional dyspnoea and in severe cases, respiratory failure with very few chest signs. It is airborne. Asymptomatic lung colonization occurs in immunocompetent individuals which can be spread to those who are immunocompromised.

Case Presentation: The first case report involved a 62- year-old female with a Systemic Lupus Erythematosus (SLE). She was on hydroxychloroquine and low dose prednisolone for eight years. She was initially treated with IV Levofloxacin and Meropenem for a Haemophilus Parainfluenzae, Pseudomonas Aeruginosa and Stenotrophomonas Maltophilia infection. However, her clinical condition deteriorated. Her bronchoalveolar PCR was positive for PCP. She improved with Co- Trimoxazole and was discharged home.

In the second case report, a patient with a Type 1 autoimmune hepatitis was treated for a bilateral lower staphylococcus aureus pneumonia in neutropenic shock. He was on azathioprine and prednisolone. However, his condition deteriorated despite being on IV Meropenem and Azithromycin. His Sputum PCR revealed PCP.

Conclusion: PCP can be severely debilitating and fatal if not detected promptly. Clinicians should be wary of its presence, especially in immunocompromised patients who have failed to respond to broad spectrum antibiotics from comprehensive culture and sensitivity reports. An early, exhaustive Respiratory Panel PCR test, although not routinely performed in this country due to its cost, has proven to be lifesaving.

Key Words: Non- HIV related Opportunistic Infections, Pneumocystis Carinii Pneumonia, Dyspnoea

CRA15

ADVANCED STRATEGIES IN EBUS-GUIDED BIOPSIES FOR CHALLENGING CASES

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Introduction

Endobronchial ultrasound (EBUS)-guided biopsies are commonly used for diagnosis of various mediastinal conditions. In this report, we present four unique and highly challenging cases. All cases performed under conscious sedation.

Case series

Case 1

A 27-year-old woman with a history of grey zone lymphoma (DLBCL + Hodgkin's), right empyema lung abscess and a complete right main bronchus occlusion from TB stenosis in 2022. After completing treatment, a PET-CT scan in May 2023 showed worsening mediastinal lymphadenopathy (LN), most active at pre-aortic area (SUVmax4.4/1.0cm). EBUS guided-transmediastinal cryobiopsy (EBUS-TMC) was performed under high-flow nasal cannula oxygen therapy. The histopathology (HPE) results confirmed the absence of lymphoma recurrence (Reactive LNs).

Case 2

A 67-year-old woman completed treatment for left-sided breast carcinoma (pT3N3M1) since 2011. A surveillance PET-CT scan in March 2023 showed lung nodule at posterior segment of the right upper lobe (SUVmax 2.5/1.2 cm). Using combine radial and linear EBUS, EBUS-transbronchial needle aspiration (EBUS-TBNA: anterior approach) was performed. Cytopathology results confirmed metastatic breast carcinoma.

Case 3

A 51-year-old man successfully completed treatment for stage III nasopharyngeal carcinoma and achieved remission in 2019. During surveillance PET-CT in April 2023, multiple hypermetabolic mediastinal and hilar LNs were detected. The largest LN at right hilar (SUV 8.6 /1.6cm). EBUS-TMC performed at multiple stations (11R, 4L and 7). HPE results of all samples confirmed reactive LNs.

Case 4

A 67-year-old male smoker presented with chronic cough, and a right-sided lung mass (3.4x 5.2cm) along with mediastinal LNs. Two CT-guided lung biopsies and bronchoscopies were unable to establish a definitive diagnosis. Following massive hemoptysis, the patient was stabilized. HPE from EBUS-TMC (anterior approach) guided by elastography confirmed lung adenocarcinoma.

Discussion

This case series unveils a diverse array of techniques and devices employed to enhance the diagnostic capabilities of EBUS-guided biopsies.

CRA16

UNRAVELING THE ENIGMA: RECURRENT POST-TRAUMATIC PLEURAL EFFUSION - A CASE OF FLUID CHALLENGES

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Introduction:

Post-traumatic lymphocytic pleural effusion is a rare condition that is likely associated with subpleural trauma. It's worth noting that not all cases of post-traumatic pleural effusion exhibit a high eosinophil count in fluid cytology. To date, there are no established definitive guidelines or follow-up procedures for this condition due to its rarity.

Objectives:

Our primary objective was to describe the clinical presentation and treatment response in patient with recurrent post-traumatic pleural effusion.

Methodology:

In this report, we present a rare case of rapid, recurrent non-eosinophilic post-traumatic pleural effusion in a 31-year-old female who sustained multiple rib fractures on the right lung as a result of road traffic accident. The pleural fluid analysis showed a transudative effusion based on Light's criteria (serum/pleural LDH: 0.21 and serum/pleural fluid protein: 0.03). Pleural fluid cytology revealed reactive mesothelial cells and predominantly lymphocytic inflammatory cells. Medical thoracoscopy was performed, which revealed normal parietal and visceral pleura without any focal areas of pleural thickening or hematoma. Due to the rapid rate of re-accumulation, chest drainage was ineffective.

Results:

Following the exclusion of infection, the patient underwent talc pleurodesis. She was closely monitored with serial chest radiographs post-discharge, which showed no radiological evidence of fluid re-accumulation.

Conclusions:

In cases where pleural effusion compromises the airway, pleural drainage is the immediate course of action as a short-term measure. However, for recurrent post-traumatic pleurisy, pleurodesis (chemical or surgical) can be considered. As an alternative treatment option, the use of an intrapleural catheter may be considered, but a thorough assessment of risks and benefits is necessary.

CRA17

A RARE CASE OF MASSIVE HAEMOPTYSIS - UNVEILING PULMONARY ARTERIOVENOUS MALFORMATION

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Case Report:
A 49-year-old gentleman, with a history of hepatitis C, recurrent pulmonary tuberculosis (PTB) and an ischaemic stroke, presented with a short history of persistent haemoptysis causing hemodynamic instability. Imaging revealed multiple collaterals from descending thoracic aorta and pulmonary veins along with multiple vascular aneurysmal dilatations. Patient underwent embolotherapy by coiling over distal branches of intercostal artery and left bronchial artery. Post procedure, hemoptysis resolved and chest x-ray showed improvement.

Discussions:
Pulmonary arteriovenous malformations (PAVMs) are abnormal direct vascular communications between pulmonary arteries and veins, bypassing capillary beds creating low-resistance, high-flow continuous intrapulmonary right-to-left shunts. Majority of PAVMs are congenital, associated with hereditary hemorrhagic telangiectasia (HHT). Acquired cause are trauma, infection, metastatic disease and rarely, tuberculosis. Common symptoms include dyspnoea, epistaxis, haemoptysis and associated with stroke due to paradoxical emboli. Surgical resection used to be the treatment for bleeding PAVM, but recently, embolotherapy has been shown to be superior. Embolotherapy utilizing either Amplatzer vascular plugs (AVP) or coiling, has demonstrated a 100% success rate. The choice of method depends on the size of feeding artery, the location of PAVM and feasibility. In this case, the patient underwent coiling over two distal branches of intercostal and bronchial artery.

Conclusions:
This case highlights the rare association of PTB with PAVM, and previous stroke history may be attributed to paradoxical emboli since a cardioembolic cause has been ruled out. Embolotherapy is considered a superior approach compared to surgical resection for managing haemoptysis. It reduces the risks associated with general anaesthesia and avoid pulmonary parenchymal insults.

CRA18

BEYOND LUNGS AND BONES: UNVEILING THE VEILED INTRIGUE OF PLEURAL EFFUSION IN ANTI-SYNTHETASE SYNDROME

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Introduction:

Anti-synthetase syndrome is a rare immune-mediated condition characterized by presence of anti-aminoacyl-transfer RNA synthetase antibodies, primarily associated with interstitial lung disease, arthritis, and myositis.

Objectives:

Our primary objective was to elucidate the clinical presentation and treatment response in patients with pleural effusion associated with anti-synthetase syndrome.

Methodology:

We present a case of left pleural effusion in a 24-year-old male diagnosed with anti-synthetase syndrome in 2019 (positive for Anti-MDA-5 and anti-PL7 antibodies). Initially, he received treatment with a tapering dose of prednisolone (40mg) until 2021, after which he continued with Azathioprine (100mg OD). He remained asymptomatic until six months later when he presented to the hospital with a weight loss of 7kg and left pleural effusion. The pleural fluid revealed exudative effusion (serum/pleural LDH: 0.98 and serum/pleural fluid protein: 0.84). Cytology showed mature lymphocytes. Medical thoracoscopy revealed diffused thickening of pleural cavity with bridging septa. Histopathological examination demonstrated chronic inflammatory lymphocytes, plasma cells, reactive fibroblasts, and histiocytes. Pleural fluid ADA was measured at 34.5 (>29.5 suggestive of tuberculosis, as per local practice guidelines). Anti-TB treatment was initiated while awaiting TB culture results, which eventually came back negative, and patient's effusion worsened.

Results:

The patient was subsequently initiated on prednisolone (1mg/kg/day) with Mycophenolate Mofetil (1g BD). After one month, chest radiographs revealed complete resolution of effusion, allowing tapering of prednisolone dose.

Conclusions:

Pleural effusion in the setting of anti-synthetase syndrome is an extremely rare manifestation. Extensive investigations are necessary to confirm the disease-related nature of the effusion in order to establish an optimal treatment regimen.

CRA19

SYSTEMIC AMYLOIDOSIS DIAGNOSED VIA LUNG BIOPSY

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Systemic amyloidosis is a rare, serious and life-threatening disorder with a poor prognosis. It is caused by a build-up of an abnormal protein called amyloid in the organs and tissues throughout the body. Accurate and early diagnosis of the condition is very importance as early initiation of therapy improves the prognosis and survival rate.

A 60-year-old gentleman with underlying diabetes mellitus, hypertension and coronary artery diseases initially presented with chronic back pain. MRI spine showed bulging disc with protrusion over L2/L3, L4/L5 and L5/L6. During admission, there was an incidental finding of diffuse reticulonodular opacities on the chest x ray. CT thorax contrast showed reticulonodular opacities throughout the lung field with multiple lung nodules scattered in both lungs. Bronchoscopy was normal so we proceeded with CT guided biopsy of the lung nodule. HPE was suggestive of amyloidosis. He also had hyperglobulinaemia however urine bence jones and free light chain were not detected. Full blood picture had marked rouleaux formation and serum protein electrophoresis revealed raised polygonal gamma globulin beta 2 globulin which support the diagnosis of primary systemic amyloidosis.

This case highlights a rare case of systemic amyloidosis diagnosed via lung biopsy. Given its systemic nature, early diagnosis and complications screening may benefit patients for targeted treatment.

CRA20

HYPERSENSITIVITY PNEUMONITIS: ANTIGEN DIVERSITY AND DISEASE IMPLICATIONS

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Introduction: Hypersensitivity pneumonitis (HP) is an immune-mediated syndrome triggered by inhalation of a wide variety of allergens, to which an individual has been sensitized previously. The acute form of HP, with both early detection and immediate removal of causal antigens, usually leads to an excellent prognosis. In the chronic form, partial recovery is still possible; however, some cases may progress to fibrosis, even after the removal of the source.

Methods: We report 4 cases of hypersensitivity pneumonitis which varies from non-fibrotic HP to fibrotic HP. The first case reported is of a non-fibrotic HP whereby the inciting antigen has been removed, leading to a static lung function and radiological improvement. We then proceed to a case of progressive fibrotic HP without an identifiable inciting agent. Anti-fibrotic therapy was initiated and the patient has shown improvement in symptoms. A second case of fibrotic HP is reported whereby the inciting antigen was removed. However, the patient had no significant improvement and required oxygen support since could not afford anti-fibrotic therapy. The final case reported is one with a delayed diagnosis and subsequent intolerance to immunosuppressive treatment and anti-fibrotic therapy, have led to the progression of the disease.

Discussion: Hypersensitivity pneumonitis is a complex and heterogeneous disease. Making a diagnosis of HP can be challenging and it may not be possible to identify a causative agent. The presence of lung fibrosis on HRCT is important for prognosis and management. Patients with HP should be regularly monitored to assess for progression of the disease. Immunosuppression is commonly used in the treatment of HP but has not been shown to slow the progression of fibrotic disease. Anti-fibrotic therapy should be considered in patients with progressive fibrosing ILD.

CRA21

Persistent thyrotoxicosis after Dupilumab in a case of severe eosinophilic asthma

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Introduction: Anti-interleukin 4 receptor alpha antibody (Anti-IL-4Rα ab), dupilumab is indicated for moderate to severe eosinophilic asthma, atopic dermatitis, and chronic rhinosinusitis. The reported adverse reaction include dermatologic reactions such as urticaria, angioedema, injection site reaction, pharyngitis, and conjunctivitis. Only two cases in the literature reported the occurrence of transient subacute thyroiditis after dupilumab.

Objective: We herein presented a case of persistent thyrotoxicosis after being given dupilumab in severe eosinophilic asthma.

Methodology: A 51-year-old lady with a history of adult-onset severe eosinophilic asthma and chronic rhinosinusitis with nasal polyps was evaluated for uncontrolled symptoms despite on maximum medical therapy She had a previous diagnosis of thyrotoxicosis, which was successfully managed with anti-thyroid drugs. The serial investigation demonstrated a high eosinophil count of 1070/L, a high fraction excretion of nitric oxide of 67 ppb, and serum IgE of 50 iu/ml.

Result: She was initially started on benralizumab. However, it was stopped after she developed moderate exacerbation of bronchial asthma. The biologic was shifted to dupilumab six weeks after the last dose of benralizumab. Her Asthma Control Test (ACT) score improved from 14 to 24. Coincidently, she developed symptoms of thyrotoxicosis, which were easily irritability, tremors, palpitation and heat intolerance. Her TSH was 0.01 mIU/L and free T4 of 65 pmol/L. Her anti-thyroid peroxidase and anti-thyroglobulin antibody were normal. Thyroid ultrasound demonstrated the normal size of thyroid lobes with heterogenicity and hypervascularity. She was subsequently started on carbimazole 30 mg OD and she became euthyroid subsequently with a TSH of 1.87 mIU/L. She required a dose of 10 mg to maintain a euthyroid state despite after one year of treatment. Importantly, her asthma remained well-controlled even though her last dose of dupilumab was administered one year ago.

Conclusion: Thyrotoxicosis may be a feature to watch out for after dupilumab. The pathophysiology of this condition is unclear.

CRA22

MILLIARY NODULES: NOT ALWAYS TUBERCULOSIS (CASE SERIES)

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Introduction: Miliary shadows on chest imaging have wide differential diagnoses. The most common etiology is infectious, such as miliary tuberculosis (TB), but miliary shadows can be the presentation of sarcoidosis, pneumoconiosis, and secondary metastasis.

Case 1: A 19-year-old Malay male, active smoker who presented with a 1-month history of dry cough and shortness of breath. Chest imaging showed diffuse bilateral miliary nodules. The initial impression was that of miliary pulmonary TB. HRCT – multiple scattered military nodules in both lung fields with enlarged hilar and mediastinal lymph node. Subsequent VATS showed multiple nodular lesions spread over entire lung parenchyma, and lung biopsy confirmed the diagnosis of pulmonary mucinous adenocarcinoma.

Case 2: A 44-year-old male, ex- smoker who presented with prolonged cough associated with shortness of breath. The initial chest radiographs this patient demonstrates diffuse micronodules involving both lungs, in a pattern recognized as miliary. High-resolution chest computed tomography revealed bilateral diffuse micronodules with mediastinal lymphadenopathy. Proceed with VATS -Histopathological showing numerous well-formed partly coalescing granulomas in distribution along lymphovascular bundles including subpleural, the granuloma is well defined and fairly well circumscribed interstitial collection of giants cell, epithelioid histiocytes with some contains asteroid body in favor with pulmonary sarcoidosis. Tuberculosis and fungal infection were excluded. The levels of angiotensin-converting enzyme in the blood were elevated.

Conclusion: Although miliary tuberculosis is the most known cause of miliary infiltrates on chest imaging, other differential diagnoses including pneumoconiosis, fungal infections, sarcoidosis, histoplasmosis, primary lung cancer, and hematogenous spread of non- pulmonary malignancies can mimic this radiographic finding.

CRA23

OUTCOME OF EVEROLIMUS AND PLEURODESIS IN TUBEROUS SCLEROSIS ASSOCIATED LYMPHAGIOLEIOMYOMATOSIS WITH RECURRENT PNEUMOTHORAX: A CASE REPORT

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Introduction:

Tuberous sclerosis complex (TSC) is a rare, multisystem disorder which caused by autosomal dominant mutations in the TSC1 and TSC2 tumour suppressor genes. The pathogenesis is due to hyperactivation of the mammalian target of rapamycin (mTOR) signalling pathway causing abnormalities in cell differentiation and proliferation. Tuberous sclerosis-associated lymphangioleiomyomatosis (TSC-LAM) is a major pulmonary manifestation in tuberous sclerosis patient. Here, we report successfully treated case of TSC-LAM with recurrent pneumothorax after multiple pleurodesis and mTOR inhibitor.

Case report:

27 years old lady with recently confirmed TSC, evidence by shagreen patches, angiofibromas, multiple renal cyst, angiomyolipoma, and cystic lung disease. She presented with recurrent bilateral pneumothorax. First presentation is in 2017 for left pneumothorax. High resolution CT Thorax showed multiple bilateral uniform cyst. She was treated as primary spontaneous pneumothorax and subsequently was lost to follow up before further investigation being done. She was then readmitted in 2022 total of three episodes (interval one to two months) for secondary spontaneous right pneumothorax requiring chest tube drainage. Pleurodesis performed on the first two episodes of pneumothorax using talc slurry and blood patch pleurodesis. On the third episode of pneumothorax, she was discharged with pneumostat for two weeks followed by talc slurry pleurodesis again. Everolimus being started with dose optimization during third episode of pneumothorax. With mTOR inhibitor and multiple episodes of pleurodesis within 5 months periods, no more further admission for spontaneous pneumothorax. Her functional status and lung function test (FVC) both improved.

Conclusion:

Recurrent pneumothorax as complication of TSC-LAM showed significant major pulmonary involvement in this patient. Aggressive intervention of pneumothorax is very important and initiation of mTOR inhibitor should be done as early as possible to improve morbidity and possible mortality.

CRA24

A CASE OF SEVERE ALLERGIC BRONCHIAL ASTHMA AND LYMPHOCYTIC PLEURAL EFFUSION: IS IT A RARE CORRELATION?

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Introduction:

Diagnosing severe allergic asthma is a real challenge to pulmonologists nowadays. However with the presence of multiple biologics, managing severe asthma cases showing remarkable outcome. Here we reporting unexplained co-existence of severe allergic asthma with recurrent lymphocytic pleural effusion.

Case:

64-year-old female patient with severe allergic asthma was presented to our hospital with recurrent left pleural effusion. Her main symptom is dyspnea, wheezing and recurrent asthma exacerbation for the last one year. She was on triple therapy and high dose steroid. Serum IgE was elevated to 364UI/ml and fractional exhaled nitric oxide was 60ppb. Chest radiograph and CT thorax revealed bilateral pleural effusion predominantly left sided. There was no other lung parenchymal abnormality. Pleuroscopy of left pleural revealed hypervascularity on parietal pleural. Histopathology examination showed multiple highly fragmented fibrofatty tissue mixed with blood and fibrin and heavily infiltrated by heterogenous population of small mature lymphocytes with few plasma cells in keeping with chronic inflammation with reactive lymphoid follicles. Fluid cytology had predominant lymphocytic infiltrates with presence of eosinophils. There was no evidence of malignancy, connective tissue disease and chronic infection. Anti Ig-E, subcutaneous Omalizumab was started for severe allergic asthma. During follow up, her Asthma Control Test (ACT) score and pleural effusion improved remarkably. We are able to reduce the inhaler numbers and also the dosage of steroid usage.

Conclusion:

The emergence of multiple biologics in treating severe asthma have been proven in treating severe asthma. However, there is no reported and explainable hypothesis to correlate severe asthma as airway disease with pleural effusion and how Anti IgE works in this patient in regards to resolution of pleural effusion.

CRA25

PLEUROPULMONARY COMPLICATIONS OF AMOEBIC LIVER ABSCESS : A CASE REPORT

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Introduction:

Extraintestinal manifestation of amoebiasis caused by Entamoeba histolytica, manifests in multiple organ including liver, pleura, and pericardium[1]. Involvement of the pleuropulmonary may occur due to inflammatory reaction of liver abscess towards adjacent thoracic structure, hematogenous or lymphatic spread and also inhalation of cyst. Approximately, pleuropulmonary complications occur in 10% of patients with amoebic liver abscesses. Here, we report a case of lung empyema in amoebic liver abscess, complicated with bronchopleural fistula.

Case report:

A 26 years old male working as toilet cleaner, presented with fever for 2 weeks and right hypochondriac pain. Ultrasound hepatobiliary and contrasted CT scan thorax abdomen revealed evidence of ruptured right liver abscess and right lung empyema. Right lung empyema subsequently being drained via percutaneous pigtail insertion. Amoebic serology was positive and PCR test from pleural pus sample confirmed positivity of amoebic infection. Treatment commenced with Metronidazole followed by Paromomycin as per guidelines. However, despite we manage to control the infection with antimicrobial, the disease complicated further with bronchopleural fistula during follow up imaging. He underwent video-assisted thoracoscopy and fistula repair. Intraoperative findings revealed a fistula at the right lower lobe. Patient was discharged on postoperative day 3 after showing further clinical and radiological improvement.

Conclusion:

Multiorgan involvement of amoebiasis with pleuroparenchymal complication and bronchopleural fistula is a rare condition. It requires multidisciplinary team involving pulmologist, infectious disease physician, radiology, serology, and surgical interventions for optimal and accurate management of the patient.

1. Outcomes of a conservative approach to management in amoebic liver abscess. Kale S, Nanavati AJ, Borle N, et al. *J Postgrad Med.* 2017;63:16–20.

CRA26

A RARE MANIFESTATION OF BULLOUS PEMPHIGOID SECONDARY TO ISONIAZID AND RIFAMPICIN IN PULMONARY TUBERCULOSIS MANAGEMENT

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Introduction:
Adverse cutaneous drug reaction related to anti-tuberculosis medication has been well documented; however, bullous pemphigoid secondary to isoniazid and rifampicin has been relatively rare. We discussed a case of a patient developing bullous skin lesions after initiation of anti-tuberculosis medication.

Case presentation:
A 33 years-old man with no previous medical illness was diagnosed with smear positive pulmonary tuberculosis and started on tablet Akurit-4 4 tablets daily and pyridoxine 10mg daily. Baseline blood investigations were normal. He presented 1 week later with generalized painless bullous skin lesions. Anti-tuberculosis was withheld. Patient was treated as immunobullous disease and started on tablet prednisolone 10mg daily. Three weeks after clearance of the lesion, during rechallenge with isoniazid patient developed recurrence of the bullae. Skin biopsy performed, immunofluorescence show linear deposition of IgG and C3 along the basement membrane confirming diagnosis of bullous pemphigoid. Autoimmune screening was negative. Further rechallenge with rifampicin resulted in similar bullous formation. After successful drug desensitization, anti-tuberculous regime which includes pyrazinamide, ethambutol and ofloxacin were given, along with prednisolone 10mg daily. Subsequently patient able to complete treatment after 1 year.

Discussion:
Anti-tuberculous adverse drug reaction (ADR) commonly associated with cutaneous eruption. It may present as maculopapular rash which varies from mild to severe. However bullous reaction such as bullous pemphigoid is relatively rare. Few cases reported association with rifampicin and isoniazid separately. The development of blistering skin lesion after rechallenged in our patient suggest both drugs as the etiology.

Conclusions:
Bullous pemphigoid is a rare manifestation of anti-tuberculous adverse drug reaction which require prompt discontinuation and gradual reintroduction to identify offending agent.

CRA27 - WITHDRAWN

CRA28

DIFFUSE LARGE B CELL LYMPHOMA(DLBCL) ASSOCIATED MALIGNANT PLEURAL EFFUSION(MPE): A CASE REPORT

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Introduction
MPE is a common clinical problem in patients with neoplastic disease. Although MPE is well recognized in patient with lymphoproliferative disease, it is poorly reported in literature. Medical thoracoscopy(MT) has emerged as a valuable tool for biopsy that enables early diagnosis.

Case report
A 74-year-old man, an ex-smoker with history of hypertension, dyslipidemia and gout presented to the hospital with chronic cough, night sweat and weight loss. He had close contact with a Tuberculosis(TB) case, otherwise no history of HIV infection. Initial examination and imaging suggested left pleural effusion. Pleural fluid analysis revealed lymphocytic effusion, lactate dehydrogenase(LDH) 954U/L, protein 52g/L, adenosine deaminase(ADA) 12.34U/L and squamous epithelial cell on cytology whereas all tuberculosis work-up were negative. A computerized tomography of the thorax, abdomen, and pelvis (CT TAP) demonstrated generalized intra-abdominal lymphadenopathy and left adrenal lesion. Multiple parietal and diaphragmatic nodules as well as mass at the diaphragm were seen during medical thoracoscopy. Several biopsies were taken from the from parietal nodules. He also underwent laparoscopy tissue biopsy of intra-abdominal lymph node(LN). Both pleural and LN biopsy are in keeping of the diagnosis of DLBCL, non-GC subtype. He was treated with Rituximab, Cyclophosphamide, Doxorubicin, Vincristine and Prednisolone as per hematology team protocol following which repeated imaging showed regression of left pleural effusion and LN size.

Discussion
Lymphoma with pleural involvement is usually, but not invariably, a poor prognostic sign. This case underlines the importance of diligent diagnostic workup including tissue biopsy to determine the definite cause of pleural effusion hence enables early definitive treatment.

Conclusion
Lymphoma should be one of the differential diagnoses when patient presents with lymphocytic pleural effusion and high LDH level.

CRA29

AORTIC ANEURSYM AND PLEURAL EMPYEMA: THE CHICKEN OR THE EGG FIRST?

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Introduction: Ruptured aortic aneurysm has been reported to present catastrophically as acute hemothorax, however it sometimes present in a subacute manner causing clinical confusion. We report a rare case of ruptured descending aortic aneurysm presenting as Group B Streptococcus left pleural empyema.

Case description: A 60 years old gentleman with ESRF presented with left sided pleuritic chest pain for 1 week associated with fever and dyspnoea. Initial blood workup showed Hb 13g/dL, WBC 22,000, CRP 282. CXR revealed left pleural effusion. Patient was hemodynamically stable since presentation. Diagnostic thoracocentesis was done draining turbid fluid with pleural fluid C&S growing Streptococcus agalactiae. Thoracocentesis for source control was not successful due to poor window. A CT thorax was done which revealed a contained rupture descending aortic aneurysm. Patient was counselled for endovascular repair with hematoma drainage however not keen due to high perioperative risk. After a multidisciplinary meeting, patient was planned for 8 weeks course of antibiotics.

Discussion: The relation between aortic aneurysm and pleural empyema is often thought provoking- as it can happen in both directions. Aortic aneurysm rupture can cause slow leak into the pleural space, which gets secondarily infected causing lung empyema. On the other hand, some virulent organisms are known to cause mycotic seeding leading to rupture, especially in pre-existing atherosclerotic plaques. Literature review shows 10 cases of GBS associated mycotic aneurysm, however none presented as isolated empyema. The likelihood of which comes first requires multidisciplinary discussion between ID, respiratory and cardiothoracic surgery based on clinical experience. On an extra note, rupture aortic aneurysm might not always present catastrophically. Strong clinical suspicion and evaluation is necessary to clinch the diagnosis.

CRA30

BRONCHIECTASIS AND GRANULOMATOUS SKIN LESIONS IN A YOUNG ADULT – A CASE REPORT OF BARE LYMPHOCYTE SYNDROME

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INTRODUCTION

Bronchiectasis is a chronic lung disease characterized by abnormal airway dilatation and chronic productive cough with recurrent exacerbations. Here, we discuss a young adult with bronchiectasis and granulomatous skin lesions.

CASE DESCRIPTION

A 24-year-old gentleman presented with recurrent community-acquired pneumonia requiring multiple hospitalizations over 1 year. He reported frequent upper respiratory infections during childhood but never required hospitalizations. There was no family history of similar illnesses. Examination showed finger clubbing, coarse crepitation at lung bases and hyperpigmented, papular skin lesions over the right lower limb. Chest radiography and HRCT thorax done showed extensive cystic bronchiectasis bilaterally predominantly involving lower lobes. Screening for tuberculosis, human immunodeficiency virus and autoimmune diseases were negative. Immunoglobulin counts were normal. Biopsy of the skin lesions on his right lower limb showed chronic granulomatous inflammation. He eventually had a full genome sequencing done which confirmed a diagnosis of bare lymphocyte syndrome, type I (primary immunodeficiency).

DISCUSSION

Bare lymphocyte syndrome is a rare autosomal recessive disease involving the major histocompatibility complex (MHC) class I and is a form of primary immunodeficiency. Patients frequently present with recurrent respiratory infections leading to bronchiectasis, and tend to have granulomatous skin lesions. However, this condition is often underdiagnosed due to lack of resources for testing, and poor understanding of the disease.

CONCLUSION

In a young adult presenting with skin lesions and bronchiectasis, we recommend performing a biopsy of the skin lesion, and to consider consulting an immunologist on further investigation for primary immunodeficiency.

CRA31

PULMONARY AMYLOIDOSIS MIMICKING METASTATIC LUNG NODULE: A CASE REPORT

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Background
Amyloidosis consist of a heterogenous group of disorder resulting from abnormal extracellular deposition of misfolded protein. Pulmonary amyloidosis can be a part of a systemic amyloidosis or limited to only lung. There are 3 different forms of pulmonary amyloidosis: tracheobronchial, diffuse alveolar-septal and nodular pulmonary amyloidosis. Diagnosis is often challenging as the constellation of symptoms are variable and non-specific.

Case History
74 years old nonsmoker female patient was referred to respiratory clinic for abnormal x-ray findings. Patient presented to emergency department multiple times with complaint of joint pain. She had no active respiratory complaint. Upon examination, physical findings were unremarkable. Chest radiograph showed multiple lung nodules. CT thorax showed bilateral lung and pleural nodules that could represent metastasis deposit. Patient underwent CT guided biopsy of the lesion for concern of malignancy. Histopathology examination of biopsy specimen revealed it to be nodular pulmonary amyloidosis. Further workup showed patient also has seropositive rheumatoid arthritis hence referred to rheumatology for further management. As patient is asymptomatic from respiratory symptoms, decision was made to keep the patient under regular follow up and observation.

Conclusion
Nodular pulmonary amyloidosis can mimic other common pulmonary disease which consist of pulmonary nodules or masses such as granulomatous and neoplasm. Therefore, the differential diagnosis of pulmonary amyloidosis should be included in the work up for pulmonary nodules.

CRA32

CASE SERIES OF ACUTE AND ACCELERATED SILICOSIS

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Introduction: Excessive exposures to airborne crystalline silica have been known for over 100 years as a serious health hazard. Continuous inhalation of crystalline silica can result in progressive and irreversible physical impairment due to silicosis, a diffuse pulmonary interstitial disease. Accelerated silicosis develops within 3–10 years of exposure to silica dust. It is associated with a higher level of exposure and a greater risk of progressive massive fibrosis.

Objective: These cases were presented due to the rarity of accelerated silicosis and its known complication - silico-tuberculosis, and to demonstrate that even young, healthy patients exposed to silica particles of higher purity and reduced size (spherical silica fillers) for relatively short durations can develop the disease rapidly

Result: Three male patients between the ages of 26 and 28 who had worked same in a factory producing silica fillers for the previous six years presented with dyspnoea and cough. All three showed typical CT characteristics of pulmonary silicosis. Bronchoscopy, a video-assisted lung biopsy, and an EBUS TBNA of the mediastinal lymph node were performed on two patients. The first patient's HPE suggests silicosis; the second patient revealed numerous microscopic, polarised crystals and a necrotising granuloma, both indicative of silico tuberculosis. Subsequently, one of them was diagnosed with silico tuberculosis. Patient with silicotuberculosis was started on anti-tuberculous drug and responded well

Conclusion: Direct exposure to silica particles can result in acute and accelerated silicosis, even in healthy patients. The association between silicosis and an increased risk of tuberculosis makes this condition more hazardous. Prevention is the cornerstone of treatment.

CRA33

WHEN SMOKE TAKES ITS TOLL: A RARE DISEASE WITH RECURRENT PNEUMOTHROAX

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Introduction: Recurrent pneumothorax is a challenging and a potential life-threatening condition. One of the causes is Pulmonary Langerhans cell (LC) histiocytosis (PLCH) which a rare neoplastic idiopathic disorder, characterized by the infiltration of bone marrow-derived LCs in the lungs and various organs. It is more frequently a distinct entity in young adult smokers without any gender predominance.

Objective: We report a case to highlight the clinical features, diagnostic challenges, treatment strategies, and outcome in managing this complex and rare condition.

Result: A former smoker 19-year-old male student with underlying diabetes insipidus on treatment under endocrinologist, history of pulmonary tuberculosis presented with 3 episodes of pneumothorax which occurred in almost 3 consecutive months. The high-resolution computed tomography (HRCT) thorax revealed various sizes of lung cysts with irregular bizarre-looking shapes. He had a video-assisted thoracotomy and bullectomy done due to the recurrent pneumothorax. The histology diagnosis confirmed PLCH from the surgical lung biopsy specimen, with immunohistochemical staining for CD1a, S100, and CD 68 were positive. Further genetic testing showed negative for BRAF V 600 mutation. He was not on any specific medical therapy and was referred for lung transplantation evaluation.

Discussion:
This case highlights a high index of suspicion for PLCH in cases of recurrent pneumothorax particularly in young smokers can lead to early diagnosis and improved patient outcomes. Early recognition of PLCH is crucial to initiate appropriate management strategies, including smoking cessation and surgical interventions when necessary.

CRA34

PRIMARY ADENOID CYSTIC CARCINOMA (ACC) OF LUNG MIMICKING BRONCHIAL ASTHMA IN PREGNANCY – A CASE REPORT

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INTRODUCTION

Malignancy complicates one in a thousand pregnancies. Tumours of respiratory origin are very uncommon during pregnancy. To our knowledge, this is the seventh reported case of ACC complicating pregnancy. It's often misdiagnosed as bronchial asthma due to its non-specific presentations like coughing and wheezing.

OBJECTIVES

We report a rare case of ACC mimicking bronchial asthma in pregnancy and the challenges in managing this patient.

RESULTS

A 34-year-old lady at 22 weeks of gestation presented with a worsening cough for 2 weeks associated with shortness of breath. Previously, she had been admitted at 9 and 14 weeks of gestation and treated for bronchial asthma exacerbation. On current admission, she was breathless with reduced breath sounds and rhonchi over her right lungs. Chest radiography revealed a right lung collapse with a right mediastinal shift. She was intubated and treated for pneumonia. CT Thorax revealed right upper lobe collapse and consolidation and an urgent bronchoscope revealed endobronchial lesions occluding the right upper bronchus. A biopsy taken during bronchoscopy was reported as adenoid cystic carcinoma. She was extubated to room air after a course of antibiotics. Oropharyngeal examinations revealed no primary salivary gland lesions. At 28 weeks of gestation, she underwent LSCS. She underwent radiotherapy and was subsequently reassessed with CECT TAP, which reported resolution of the right upper lobe mass.

CONCLUSION

Tracheal malignancies in pregnancy impose a great clinical challenge, considering the risk to mother and foetus. Approaching such malignancies in a field with limited evidence requires multidisciplinary team discussion to ensure a good maternal and foetal outcome.

CRA35

BROWN PLEURAL EFFUSION SUSPICIOUS FOR BILOTHORAX IN A PATIENT WITH LUNG ADENOCARCINOMA

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Introduction

Brown pleural effusion can be due to various underlying causes, in which bilothorax is one of the differential diagnosis. Bilothorax is defined as a raised pleural fluid bilirubin level and a pleural fluid-serum bilirubin ratio >1. In this case report, we present a patient with brown pleural effusion initially suspicious for bilothorax, however thorough work-up revealed a lung carcinoma.

Case report

This case describes a 64-year-old lady, presented with chronic cough for 8 months, anorexia, loss of weight and worsening breathlessness for 1 month. She has no fever and TB contact. She has raised CEA and CA-125. Her CT scan shows massive right pleural effusion with mediastinal shift, no suspicious lung or solid intrabdominal lesion. Subsequent pleurocentasis revealed a brown pleural effusion, pleural fluid analysis confirmed an exudative bilothorax (pleural fluid bilirubin 62.7 and serum bilirubin17.1, ratio: 3.67), no organisms were cultured. An MRCP demonstrated no pleurobiliary fistula. Diagnostic pleuroscopy demonstrated inflamed, erythematous right parietal pleural covered with fibrin. Pleural biopsy revealed atypical cells in favour of metastatic carcinoma, primarily originated from lung.

Discussion / Conclusion:

Brown pleural effusion is a non-specific finding - possible causes include empyema, chylothorax, and bilothorax. Bilothorax is characterized by accumulation of bile in the pleural space, usually related to surgical conditions. Bile is thought to enter the pleural cavity either directly across diaphragmatic defect(s) and communications or indirectly via a lymphatic route through pleuro-peritoneal lymphatic connections. In an event when bilothorax is suspected, a negative workup for biliary leakage (MRCP) should prompt the clinician to consider alternative differentials such as malignancies, which can mimic the colour of a bilious pleural fluid.

CRA36

MAKING A POINT WITH HYDRO-POINT

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Pneumothorax and pleural effusion may occur together. We describe a case of hydropneumothorax and the relevant ultrasound features. A 44-year-old smoker presented to our clinic with a dry cough and right-sided pleuritic chest pain. He was treated for severe smear-positive PTB (pulmonary tuberculosis) which was improving after 4 months of treatment. Physical examination was suggestive of a right pneumothorax. Lung POCUS (point-of-care ultrasound) showed a right lower zone (R4 and R6 region) pleural effusion with an absent jellyfish sign. There was an absent lung sliding over the rest of the lung zones. A chest drain was inserted over the right side with subsequent bubbling of the water seal chamber. The chest radiograph confirms the presence of a right hydropneumothorax. Pleural effusion and pneumothorax share several ultrasound features. The presence of the hydro-point (the interface between pleural effusion and pneumothorax), the absence of the jellyfish sign (collapsed lung surrounded by pleural effusion) and the presence of other ultrasound features of pleural effusion and pneumothorax indicate a hydropneumothorax. Identifying the ultrasound characteristics of these co-occurring conditions allows clinicians to decide on immediate patient management and avoids incorrect chest drain placement.

CRA37

THE ROLE OF COLOUR DOPPLER AND M-MODE ULTRASOUND IN LUNG COLLAPSE AND PLEURAL EFFUSION

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Hyperechoic pleural effusion can be confused with lung hepatization. We describe how we used colour Doppler and M-mode of lung POCUS (point-of-care ultrasound) to differentiate these two pathologies. A 53-year-old smoker presented with worsening dyspnoea and weight loss for 2 months. Physical examination showed a cachexic male with clinical signs suggestive of a massive right pleural effusion. Chest radiograph showed a total opacification of the right hemithorax with a right-sided tracheal deviation. Lung POCUS showed a massive hyperechoic structure with absent plankton sign and air bronchogram. Colour Doppler and M-mode of the structure showed absent vascular enhancement and absent lung pulse, respectively. Further scanning of the right hemithorax revealed a severely collapsed lung at the anterior and posterior upper zones (R1 and R5 zone). We aspirated non-coagulable haemorrhagic effusion on thoracocentesis. An immediate pleuroscopy was done. Subsequently, a diagnosis of stage 4 lung adenocarcinoma with malignant pleural effusion was made.
Differentiating a collapsed lung (seen as lung hepatization on ultrasound) and a hyperechoic pleural effusion is important as the initial investigation method of these two conditions are different. B-mode lung ultrasound findings can be deceiving. Colour Doppler allows visualization of patent pulmonary vessels easily seen in a collapsed lung. Lung pulse on M-mode indicates an intact visceral-parietal pleura interface. The absence of these signs suggests a pleural effusion instead of a lung collapse.

CRA38

COMPLEX PARAPNEUMONIC EFFUSION: MORE THAN MEETS THE EYE

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Complex pleural effusion requires urgent drainage. We report the usage of lung POCUS (point-of-care ultrasound) using a handheld ultrasound machine which changed the immediate management of a complex parapneumonic effusion. A 50-year-old diabetic presented with fever, dyspnoea and left pleuritic chest pain for 2 weeks. Physical examination suggests a left lower zone pleural effusion which was confirmed on chest radiograph. Lung POCUS done by a trained physician using a handheld ultrasound machine showed 2 locules of hypoechoic pleural effusion with fibrin strands, one is superficial and one deep between the lung and the mediastinum. An immediate CT thorax was done which confirmed the ultrasound findings. Due to the organized nature of the complex pleural effusion, an upfront VATS (video-assisted thoracoscopy) was done. Methicillin-sensitive *Staphylococcus aureus* was grown from the drained pus. The patient was subsequently discharged well with prolonged antibiotic treatment. International guidelines suggest surgical drainage of empyema only after failure of tube thoracostomy and intrapleural fibrinolytics with DNAse (recombinant deoxyribonuclease). Early identification of patients that need urgent VATS is necessary to prevent treatment failure and further complications. Lung POCUS done by a trained physician serves as a useful tool in deciding the immediate management of empyema patients. Modern handheld ultrasound machines can identify and characterize pleural effusions.

CR3A9

MASSIVE HEMOPTYSIS FOLLOWING RASMUSSEN'S ANEURYSM

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Introduction: Rasmussen's aneurysm is a rare complication of pulmonary tuberculosis, more commonly noted in the presence of chronic cavitary tuberculosis. Rasmussen's aneurysm is a pseudo-aneurysm of a branch of pulmonary artery that is adjacent to the tuberculous cavity, and it can lead to life threatening hemoptysis. Herein, we present a case of Rasmussen's aneurysm in a man with newly diagnosed tuberculosis, whom successfully went through pulmonary artery embolization.

Case Report: A 61-year-old active smoker presented with constitutional symptoms for 1 month and hemoptysis for 1 day. Computed tomography angiography (CTA) of thorax revealed focal saccular dilatation of vessel adjacent to right upper lobe cavity, suggestive of Rasmussen's aneurysm. Pulmonary artery embolisation was done early during the same admission, and patient was able to discharge home well with no more hemoptysis.

Conclusion: Radiological imaging and intervention have evolved to become so crucial in the diagnosis and treatment of hemoptysis, and play an important role prevent massive hemoptysis and ensure good treatment outcome. Hence, whenever possible, early radiological imaging and intervention should be performed in cases of hemoptysis.

CRA40

KRUKENBERG TUMOUR AS THE INITIAL MANIFESTATOIN OF LUNG ADENOCARCINOMA

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Introduction: Krukenberg tumors are unusual metastatic tumors of ovary with primary tumors from the stomach, breast and gastrointestinal malignancies. Krukenberg tumor from pulmonary malignancy represents an extremely rare situation. This is an elaboration of a case of young women with Krukenberg tumor rising from lung adenocarcinoma.

Case Report: A 38-year-old woman presented with progressive abdominal distention for the past two-years. Computed tomography (CT) of thorax, abdomen and pelvis revealed a huge ovarian mass with left lung nodules and left-sided pleural effusion. A detailed immunohistochemical staining on pleural fluid cytology confirmed the diagnosis of metastatic adenocarcinoma of lung origin. She underwent doublet platinum chemotherapy as molecular testing for oncogenic mutation was negative. The patient responded well to chemotherapy with a significant reduction in ovarian tumor size.

Conclusion: Early identification for the primary source of Krukenberg tumor is paramount to avoid invasive diagnostic surgical intervention for ovarian metastasis.

CRA41

HEPATOID ADENOCARCINOMA OF THE LUNG WITH HARD PALATE METASTASIS: REVIEW OF A RARE PRESENTATION OF LUNG CANCER

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Introduction: Hepatoid adenocarcinoma is a is rare malignant tumour with a pathological features of hepatocellular carcinoma with no evidence of liver tumour or other primitive site of neoplasm. Here we discuss a case of hepatoid lung adenocarcinoma with initial presentation of hard palate mass.

Case report: A 71-year- old Malay gentleman with a background history of hypertension and dyslipidaemia, presented with fungating mass growth over the site of the tooth extraction. Upon examination, There was multiple oral masses noted; measuring around 2cm x 6 cm. CT TAP reviewed spiculated mass at right upper lobe, with metastasis to liver, gall bladder, bone and hard palate. Biopsy of the hard palate mass showed pseudoglandular structures and trabecular pattern. The malignant cells are diffusely and strongly positive for CK AE1/AE3, CK7 and HepPar1, suggestive of hepatoid adenocarcinoma of lung. He was referred to oncology team to initiate radiotherapy of right hip and oral mass.

Discussion: The overall survival of hepatoid lung adenocarcinoma remain poor (13 months). Chemotherapy would be an of treatment if results are negative for oncogenic mutation study.

CRA42

OVERCOMING THE CHALLENGES OF HIGH-ALTITUDE TRAVEL WITH LUNG DISEASE: REFLECTIONS ON A SOUTH CHINA SEA JOURNEY

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Introduction:
Individuals with pulmonary disorders are at risk of developing hypoxemia and pneumothorax at altitude. This is an elaboration of successful aircraft transfer for a patient with pulmonary tuberculosis and pneumomediastinum.

Case Report:
A 23-year-old female presented with recurrent massive hemoptysis and collapsed upon presentation, requiring cardiopulmonary resuscitation for 25 minutes. A mild left pneumomediastinum was observed, which resolved spontaneously. Computed tomography angiogram showed a tortuous left internal mammary artery, and emergency embolization was performed. She was treated as smear positive tuberculosis. Unfortunately, the patient develops hypoxic-ischemic brain injury and her family members requested transfer back to hometown for further treatment and rehabilitation. The patient was successfully transferred with the accompany of medical personnel after a four hours of flight journey via Royal Malaysian Airforce C-130.

Discussion:
The reduction of ambient barometric pressure in high altitude will lead to expansion of trapped air in lung cysts and lead to higher risk of pneumothorax[1]. To address the risk of hypoxemia during flight, it is also important to consider the significant change in barometric pressure at high altitude, leading to a decrease in inspired oxygen partial pressure[2]. The total amount of oxygen tank requirement during the journey is calculated based on boyle's law[3]. A decision regarding suitability for air travel should also consider flight duration and timings, medications list and ensuring equipment will operate effectively at high altitude. A travel may be safely carried out provided a thorough pre-travel evaluation and adequate prophylactic measures to prevent potential altitude related complications.

CRA43

ANTI KU-ASSOCIATED INTERSTITIAL LUNG DISEASE

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Introduction:
Anti-Ku-associated interstitial lung disease (ILD) is a very rare ILD accounting for 8% to 43% of reported lung involvement.

Case Report:
A 55-year-old housewife, nonsmoker, presented with chronic cough and mild dyspnea for 7 years. She has no constitutional symptoms, muscle weakness, connective tissue disease symptoms, significant occupational exposure, and examinations revealed fine crepitation bilateral lower zone, other examinations were unremarkable. Chest X-ray (CXR) shows interstitial nodular opacity over bilateral lower zones. Autoimmune screening and rheumatoid factor were negative, but Creatinine Kinase (CK) was 652 U/L. High-resolution computer tomography (HRCT) of the thorax shows consolidation and peri lobular density over posterior segment of the right upper lobe, and consolidation over peribronchovascular area with traction bronchiectasis, which consistent with non-specific interstitial pneumonia (NSIP) pattern with predominant organizing pneumonia (OP) pattern. She defaulted follow-up due to the Covid-19 pandemic and came back middle of 2022 with similar symptoms. Repeated HRCT thorax showed no interval changes. CK remained raised and with HRCT changes of NSIP with OP. Myositis panel was performed and the result came back as anti-Ku positive. A multidisciplinary discussion with an interstitial lung disease expert and thoracic radiologist concluded as anti-KU associated ILD and the consensus for treatment was a slow tapering dose of 0.5mg/kg prednisolone with azathioprine aiming for 2mg/kg dosage.

Conclusion:
In patients with interstitial lung disease changes with raised CK and OP changes, it is worthwhile to pursue a myositis panel as shown in this case.

CRA44

A CURIOUS CASE OF MALIGNANT PLEURAL MESOTHELIOMA

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INTRODUCTION: The 2021 WHO classification of pleural tumors classifies mesothelial tumors into benign/preinvasive tumors and mesotheliomas. We present a case of malignant pleural mesothelioma (MPM) mimicking a (benign) well differentiated papillary mesothelial tumour (WDPMT).

CASE SUMMARY: A 30 year old man with no previous asbestos exposure, presented with one month cough, reduced effort tolerance and weight loss. CXR showed massive left pleural effusion which was exudative on thoracocentesis. Pleuroscopy showed nodules of varying sizes and a papillary tumor arising from the left parietal pleura. Pleural fluid AFB and MTB C+S were negative for tuberculosis and the biopsies revealed benign mesothelial hyperplasia. CECT Thorax showed coalescing sub-pleural nodules in the left lower hemithorax. PET scan revealed hypermetabolic left pleural lesions consistent with malignant pleural disease. Cardiothoracic team proceeded with VATS and wedge biopsy of the tumor. Histopathological examination of the tumor showed retained BAP1, and was reported as WDPMT with invasive foci. However due to the rarity of WDPMT, a second opinion was sought from Australian pleural experts. The final diagnosis was malignant pleural mesothelioma and patient was given chemotherapy with alimta and cisplatin.

DISCUSSION: MPM is an aggressive and incurable disease, usually associated with previous asbestos exposure, and has a period of about 40 years between exposure and disease presentation. Although our patient's tumor retained BAP1, there is no diagnostic biomarker that offers high diagnostic sensitivity and specificity for MPM. This makes diagnosis of MPM challenging and in such cases, collaboration with global experts may be required to clinch the diagnosis.

CRA45

PRIMARY EWING SARCOMA OF THE LUNG: A RARE CAUSE OF HEMOTHORAX IN A YOUNG GIRL

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Introduction:
Ewing sarcoma is a common bone malignancy among children and young adults. However, primary pulmonary Ewing sarcoma is extremely rare. We report a case of unusual presentation of Ewing's Sarcoma in a young girl who presented with pulmonary mass and left haemothorax.

Case presentation:
A 13-year-old girl presented with 1 month history of pleuritic chest pain and progressive dyspnoea. Chest radiograph was suggestive of left lower lobe mass with pleural effusion. Computer tomography of the chest revealed a large left lower lobe heterogenous lobulated soft tissue mass with calcification within, erosion of adjacent posterior rib and pleural effusion. She underwent left pleural tapping and pleuroscopy that confirmed haemothorax, but unfortunately pleural biopsy was unable to yield a diagnosis. Histological diagnosis was confirmed by ultrasound guided biopsy which showed undifferentiated small cell sarcoma. immunochemistry staining were suggestive of Ewing's sarcoma. She was started on chemotherapy under the care of paediatric oncologist.

Discussion:
The first case reported for primary pulmonary Ewing's sarcoma was in 1989. In Malaysia only one case is reported, coincidentally with similar age group and presentation. This case highlights the uncommon presentation of haemothorax associated with primary pulmonary Ewing's sarcoma. Non-traumatic haemothorax is rare and generally occurs due to vessel erosion caused by pathological lesion.

Conclusion:
Primary pulmonary Ewing's sarcoma presented with clinical features of haemothorax is extremely rare. Although rare, it should be considered in the differential diagnosis of young patients presented with large lung mass.

CRA46

CASE REPORT: MASSIVE HEMOPTYSIS IN NORMAL CHEST RADIOGRAPHY

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Introduction:
Hemoptysis is the expectoration of blood from the lower respiratory tract. It is common and may be the presenting symptom of various diseases. Massive hemoptysis is considered when the bleeding causes significant morbidity or mortality regardless of the volume. Such bleed may be life threatening hence prompt investigation and management is important. Herein, we a report a case of hemoptysis due to leaking thoracic aorta aneurysm (TAA).

Case Presentation:
A 65 years old gentleman with background history of diabetes mellitus, hypertension and ischaemic heart disease post bypass surgery presented with prolonged cough for one month with hemoptysis. His blood investigation during initial admission revealed hypochromic microcytic anaemia. Respiratory examination was unremarkable and chest radiograph only showed hyperinflated lung without any lesion. Patient was investigated for infection including endobronchial pulmonary tuberculosis which were negative. He also underwent both esophagogastroduodenoscopy (OGDS) and colonoscopy which showed presence of altered blood with clot but no source of bleeding identified. CT angiography (CTA) of thorax revealed features of descending thoracic aorta succular aneurysm with evidence of slow hemorrhagic leak into the posterior mediastinum. There was no evidence of abdominal aortic aneurysm or dissection in CTA abdomen.

Discussion:
Hemoptysis can result from various aetiologies including infections, autoimmune diseases, vascular pathology and malignancy. Our case showed that haemoptysis can also be caused by other than lung pathology. Detailed history taking with physical examination will provide lead to possible causes, followed by imaging modalities.

CRA47

IDIOPATHIC HYPEREOSINOPHILIC SYNDROME IN A TEENAGER

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Introduction: Hypereosinophilic syndrome (HES) is a group of disorders marked by the sustained overproduction of eosinophils in which eosinophilic infiltration and mediator release cause damage to multiple organs. In idiopathic hypereosinophilic syndrome (IHES), the underlying cause of hypereosinophilia remains unknown despite thorough etiologic workup.

Case presentation: A 16-year-old teenager with underlying attention deficit hyperactivity disorder (ADHD) presented with pneumonia symptoms. Laboratory investigations were notable for leukocytosis of 17.1 x 10^3/uL with 28.7% eosinophils, almost doubled to 41.6% after admission. CT chest showed diffuse consolidations in both lungs with upper lobe and peripheral predominance. Bronchoalveolar lavage investigations are negative. Treated as Eosinophilic pneumonitis and started on iv hydrocortisone 100mg tds for 3 days. The patient responded well, hence, changed to prednisolone 30 mg Od (0.5mg/kg) for 1 month and planned for gradual taper down for 6 months. Patient defaulted during fourth month of treatment. A month later, presented with acute abdomen and diagnosed with gastric outlet obstruction (GGO) with eosinophils 12.6 %. CT scan showed segmental regions of wall thickening at the gastric antrum, proximal jejunum, distal ileum, and minimal right pleural effusion. While waiting for OGDS and biopsy, the eosinophil counts raised to 32.6%, and developed massive right pleural effusion. Right chest drain inserted and pleural fluid sent for investigations. OGDS noted D1, D2 Duodenitis with edema, biopsies are taken and sent to private. Biopsies revealed chronic eosinophilic duodenitis. Pleural fluid cytology demonstrated eosinophilic effusion. Started IV Hydrocortisone 100 mg tds due to rapidly increasing eosinophil counts and symptoms. Bone marrow aspirate, immunophenotyping, and trephine biopsy showed hypereosinophilia with no evidence of hematological malignancy. Since responded rapidly to hydrocortisone, changed to prednisolone 1mg/kg/day and was discharged with tapering down regime while waiting for biologics.

CRA48

I CAN'T SIT UP!

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INTRODUCTION:

Hepatopulmonary syndrome is a rare lung complication of liver disease. It consists triad of chronic liver disease, gas exchange abnormalities and intrapulmonary vascular dilatations leading to arterial deoxygenation.

CASE SUMMARY:

A 41 years old male prisoner, underlying chronic hepatitis C complicated with liver cirrhosis presented with history of shortness of breath and reduced effort tolerance for past three months. On clinical examination, he is mild tachypneic and desaturation of spo2 under room air with evidence of stigmata chronic liver disease. He was started on non-invasive ventilation and subsequently able weaned down to high flow oxygen 15L/min. Arterial blood gas shows type one respiratory failure with obvious discrepancy of PaO2 when changing from supine to upright position. Serial imaging including CTPA showed no evidence of consolidation, pulmonary embolism, or pulmonary hypertension. Agitated saline test echocardiography showed right to left shunt with a delayed opacification (>3 cardiac cycles). He fulfilled diagnosis of hepatopulmonary syndrome, currently treated conservatively in view of his incarceration and intravenous drug user status thus not a suitable candidate for liver transplantation.

DISCUSSION:

Hepatopulmonary syndrome is uncommon condition involves a respiratory complaint in advanced liver disease patient however the cause remain unknown. Clinical features of hypoxia, platypnea and orthodexia associated with advanced liver diseases may raise a suspicion of hepatopulmonary syndrome. Echocardiography agitated saline test is a preferred screening tool for identifying intrapulmonary vascular dilatations which helps to differentiate between intrapulmonary and intracardiac shunting and aids the diagnosis. Currently no effective medical therapy has been found and liver transplantations is only mainstay treatment.

CONCLUSION:

Hepatopulmonary syndrome is an important complication in patients with liver cirrhosis and long-term survival rates are poor.

CRA49

PULMONARY ENTERIC ADENOCARCINOMA

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INTRODUCTION

Pulmonary enteric adenocarcinoma (PEAC) is an extremely rare type of non-small cell lung cancer (NSCLC) with a histologic pattern that mimics metastatic colorectal cancer (MCC). The main clinical symptoms in PEAC patients are dyspnoea, coughing, hemoptysis, and chest and back pain. The first article about PEAC appeared in 1991 in the form of a case report. As a variant of invasive lung carcinoma, only a small number of case reports and clinical research studies have been carried out, and the only one guidance on diagnosis and treatment is the WHO Tumor Classification book. It is important for doctors to distinguish PEAC from MCC to extend survival time and improve the quality of life.

CASE DESCRIPTION

75 years old, male , chronic smoker, with underlying COAD, History of PTB completed treatment, and hypertension. Presented with complaint of chronic cough , dyspnea and constitutional symptoms. His CECT thorax reported as heterogenous left lower lobe mass like consolidation suspicious of malignancy. Biopsy from the mass reported as poorly differentiated tumour mucinous differentiation, suspicious of non small cell carcinoma favouring adenocarcinoma, TTF-1,CK-20, and napsin-A negative.CECT abdomen did not shows any obvious gastrointestinal mass,however there is a left adrenal gland lesion seen likely represent metastasis. His colonoscopy shows only sessile nice 2 polyps at the descending colon, HPE reported as tubular adenoma, low grade dysplasia.

DISCUSSION

As a variant of invasive pulmonary adenocarcinoma, PEAC has malignant characteristics in imaging, pathology, and IHC, as well as a poor prognosis. Taking advantage of imaging examinations might help to prolong the patient survival times through early diagnosis and treatment.

CONCLUSION

To make precise diagnosis and treatment, carcinoma markers (such as CEA, CA125, and CA199), pathology, and IHC (including CK7, TTF-1, CK20, CDX2, villin, Napsin A, and MUC2) are needed. There are no specific guidelines for management of patients with PEAC, but general principles for typical lung adenocarcinoma are still applicable. The current therapies for PEAC are mainly derived from those used to treat classical adenocarcinoma of the lung. Specific treatment options for PEAC have not yet been developed. Therefore, much more research on this type of carcinoma must be carried out.

CRA50

CANCER CHAMELEON: DECODING PULMONARY SCLEROSING PNEUMOCYTOMA - A TUMOUR OF MANY FACES

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Introduction:
Pulmonary sclerosing pneumocytoma is a rare benign tumor, but it can transform into malignancy, even leading to extrapulmonary metastasis and life-threatening situations. Managing the condition at presentation can be challenging since pulmonary sclerosing pneumocytoma often mimics various types of tumors, such as carcinoid tumors, adenocarcinoma, and mucoepidermoid carcinoma.

Objectives:
Our primary objective was to describe the clinical presentation and emphasize the importance of tumor resection for both diagnostic and therapeutic purposes, given its tendency to progress into malignancy.

Methodology:
In this case report, we present the case of a 52-year-old female who was diagnosed with a right middle lobe nodule in 2017 and underwent annual surveillance. Initial CT-thorax revealed a well-defined, heterogeneously enhancing lesion at the lateral segment of the right middle lobe, measuring 3.3 x 3.3 x 3.3 cm, which remained stable in size until 2023 when it showed a marginal increase to 3.6 x 3.6 x 3.6 cm. The patient was asymptomatic. A transbronchial cryo lung biopsy was performed at RB4-a using radial endobronchial ultrasound and fluoroscopy guidance. Immunohistochemistry (IHC) results showed positive staining for CAM5.2, CKAE1/AE3, TTF-1, and INSM-1, consistent with a grade 1 carcinoid/neuroendocrine tumor.

Results:
The patient underwent a right middle lobe lobectomy. Lymph node sampling from stations 2, 4, 7, 8, 9, 11, and 12 showed no malignancy. The lobectomy specimen revealed a well-circumscribed, encapsulated nodule composed of sclerotic stroma, consistent with pulmonary sclerosing pneumocytoma.

Conclusions:
Sclerosing pneumocytoma is a rare lung tumor with malignant potential. It often mimics other types of tumors, particularly when the biopsy sample is inadequate. Surgical resection is recommended as a curative approach and provides better diagnostic accuracy.

CRA51

ENDOBRONCHIAL HAMARTOMA: THE SURPRISING CULPRIT BEHIND FOCAL BRONCHIECTASIS

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Bronchiectasis, a chronic and debilitating disease, is becoming increasingly prevalent worldwide and causing a growing burden on healthcare systems. This condition can be categorized as diffuse or focal depending on the underlying cause. Endobronchial hamartomas are a potential cause of recurrent post-obstructive pneumonia with focal bronchiectasis. In this report, we present a case of recurrent pneumonia with right middle lobe bronchiectasis despite receiving courses of antimicrobial therapy. CT thorax showed an oval-shaped endoluminal lesion with popcorn calcifications and fat within the right middle lobe bronchus associated with right middle lobe bronchiectasis. Subsequent flexible bronchoscopy revealed a round, smooth, yellowish intraluminal lesion obstructing the distal airway of the right middle lobe. We are able to recanalize the airway by removing the endobronchial lesion completely and the HPE was consistent with endobronchial hamartoma. However, the distal airway was already bronchiectatic. This case emphasizes the importance of having a strong clinical suspicion for intraluminal obstruction when focal bronchiectasis is encountered. Bronchoscopy plays a crucial role in obtaining tissue diagnosis and is essential for its therapeutic benefits.

CASE REPORTS (PAEDIATRIC)

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CRP11	**CASE SERIES OF INFANTILE SUBGLOTTIC HAEMANGIOMA** **Tan Yee Yen**, Shangari Kunaseelan, N.Fafwati Faridatul Akmar Mohammad, Asiah Kassim *Department of Paediatrics, Hospital Tunku Azizah, Kuala Lumpur.*	**157**
CRP12	**VASCULAR RING, A CAUSE OF MALACIC AIRWAY IN NEONATES: A CASE REPORT** **S.S.M. Hamdan, Goh C.B, Nur Rashidah.M.Z** *Paediatric Department, Hospital Shah Alam.*	**158**

CRP1

THE DIFFERENT FACES OF PULMONARY TUBERCULOSIS IN CHILDREN

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Introduction: Pulmonary tuberculosis (PTB) is an airborne disease. There has been an increasing incidence of tuberculosis diagnosed in Malaysia over the past 10 years. However, the diagnosis of PTB in children remains a challenge due to the atypical presentation and paucibacillary disease.

Case Report: We describe 3 children, all females, who presented with intermittent fever, and marked weight loss. Chronic wet cough only surfaced with further history taking. The first patient was a 9-year-old with right lung empyema. Serial sputum and pleural fluid cultures were negative for *Mycobacterium tuberculosis*. She underwent surgical decortication and her pleural tissue showed necrotizing granulomatous inflammation with acid-fast bacilli seen. The second patient was a 13-year-old who also had chronic diarrhea. She was confirmed to have both pulmonary and gastrointestinal tuberculosis. After the initiation of anti-tuberculous medication, her illness was complicated by immune reconstitution inflammatory syndrome (IRIS) that required non-invasive ventilation (NIV) and intensive care unit support. The last patient was a 10-year-old with mediastinal lymphadenopathy and left lung collapse. Acid-fast bacilli were seen in the sputum. Prednisolone was started due to the possibility of airway compression from mediastinal lymphadenopathy. Bronchoscopy showed severe left main stem bronchial stenosis. All these children are responding well to standard anti-tuberculosis treatment. However, the first two patients require home positive-airway pressure support due to severe restrictive lung disease.

Conclusion: Pulmonary tuberculosis can present in different ways, without cough as a significant symptom. A high index of suspicion is important to clinch the diagnosis.

CRP2

CASE SERIES OF CYSTIC FIBROSIS IN CHILDREN: HOSPITAL MELAKA EXPERIENCE

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Introduction: Cystic fibrosis (CF) is an autosomal recessive disease commonly found in Caucasian population, less common among the Asian population. But recent reports suggest that CF does occur in Asia. The availability of sweat test and increasing experience have made it possible to diagnose more cases of CF.

Case series: We report 7 cases of children who were diagnosed with cystic fibrosis in Hospital Melaka from year 2014 to 2023.There were 3 boys and 4 girls with a median age of 9 years old (7 months to 14 years old) at diagnosis.The median duration of first symptom to diagnosis was 41 months (IQR 7-102 months). Their clinical presentations were recurrent pneumonia (5), failure to thrive (6), bronchiectasis (4), pseudo-bartter syndrome (1), malabsorption (1). Six of them were diagnosed by sweat test, while one was diagnosed by CFTR gene while investigated for metabolic condition. Respiratory organisms detected were *Pseudomonas aeruginosa*, *Haemophilus influenzae* and *Burkholderia pseudomallei*. Four of them had abnormal CXR and HRCT thorax showed bronchiectasis. Two children had positive stool fat globules. All of them were on symptomatic treatment. On follow up, they are all alive and responded to treatment.

Conclusion: CF is increasingly being diagnosed over the past 2 decades in Asian countries. It is a chronic disease that worsen with time. There is a need to create awareness among physicians to further investigate CF in suspected patients with unconfirmed disease conditions with CF symptoms. And to develop regional/country specific protocol and tools for the diagnosis and treatment of children with CF. Early respiratory management may delay the progression of this disease.

CRP3

CONGENITAL CYTOMEGALOVIRUS PNEUMONITIS

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Introduction: Cytomegalovirus (CMV) infection is the most frequent congenital infection affecting worldwide ~1% of all livebirths. CMV infection acquired perinatally is far more frequent than those acquired transplacentally, accounting for an incidence of 10–60% through the first 6 months of life. Pneumonitis is a common clinical manifestation of CMV infection in immunocompromised children and in premature neonates, whereas it is a rare complication in immunocompetent children.

Case: We report a 4 month old girl who presented to us with persistent cough, hypoxaemia and failure to thrive since 1 month of age. Cytomegalovirus were proven from urine and blood investigations, including mother's blood. Other immunologic findings were normal.

Conclusion: A clinical diagnosis of CMV lung infection is challenging in children and often requires a high-index of suspicion, especially in immunocompetent patient. Although there is no establish protocol in perinatal CMV infection, Ganciclovir therapy may be effective in selected immunocompetent infant.

CRP4

CONGENITAL TRACHEAL STENOSIS: OFTEN A MISSED DIAGNOSIS

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Introduction:
Congenital tracheal stenosis (CTS) is a spectrum of disorder which involves tracheal narrowing of variable length, severity and location. The true incidence is unclear because many infants with CTS may die without a diagnosis.

Case report:
We report two infants born term with good birth weight. Infant A had stridor at birth while infant B had a history of difficult intubation at day 5 of life. Infant A was admitted at day 1 of life in view of tachypnoea and intermittent stridor. Initial upper airway assessment by the otorhinolaryngology team revealed mild laryngomalacia. At day 10 of life, he developed worsening respiratory distress requiring endotracheal intubation. It was noted that the endotracheal tube could not advance beyond 10cm and ventilation was difficult. An urgent bedside flexible bronchoscopy revealed complete ring tracheal stenosis. A contrast enhanced computed tomography (CECT) of thorax showed a long segment tracheal stenosis and left pulmonary artery sling. He required high ventilatory settings and demised before any definitive surgery.
Alternately, infant B was asymptomatic at birth with no stridor or respiratory distress, however noted to have difficult intubation during elective intubation at day 5 of life for gastrointestinal surgery for malrotation. It was a difficult intubation, requiring smaller sized endotracheal tube. A bedside upper airway assessment was normal. Flexible bronchoscopy at 1 month old revealed complete ring tracheal stenosis. A CECT thorax also showed a left pulmonary artery sling with tracheal stenosis. Unlike infant A, the severity of the tracheal stenosis in infant B is mild as she remains asymptomatic when well, other than mild stridor during intercurrent illness and saturates well in room air and thriving well, therefore watchful waiting is currently the management plan for her.

Conclusion:
Any stridor or difficult airway in the neonatal period should be investigated with high vigilance. A thorough upper and lower airway assessment is vital especially when a simple bedside upper airway assessment reveals no abnormality.

CRP5

CASE REPORT: A CHALLENGING CASE OF TRACHEOBRONCHIAL FOREIGN BODY IN DISTAL AIRWAY

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Introduction

Tracheobronchial foreign body aspiration is commonly found in children. Prompt diagnosis and high index of suspicious are crucial. Early and successful removal of the foreign body is essential to reduce morbidity and mortality. In endoscopic era, bronchoscopic removal was reported successful in almost 90% of cases. However, in failed attempts either via rigid or flexible bronchoscopy, open surgery is considered for removal of foreign body.

Case Presentation

We described a case of 6 years old boy with a right bronchus foreign body whereby bronchoscopic removal was unsuccessful. Open thoracotomy and bronchotomy was required to remove foreign body.

Discussion

Bronchoscopy is the gold standard in foreign body removal. However, it is less effective in removing distal and deeply impacted foreign body. Other modalities such as therapeutic bronchoscopic cryotherapy can be considered if the option is available. Bronchotomy is the last resort where all else fails.

CRP6

CASE REPORT: PULSE INTRAVENOUS METHYLPREDNISOLONE IN REFRACTORY STAGE 5 ALLERGIC BRONCHOPULMONARY ASPERGILLOSIS (ABPA) WITH CYSTIC FIBROSIS (CF)

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Introduction
Allergic bronchopulmonary aspergillosis (ABPA) is a complex pulmonary disorder characterized by hypersensitivity reaction towards *Aspergillus fumigatus*. It is almost exclusively seen in patients with cystic fibrosis (CF) and asthma. Treatment of ABPA with steroid and antifungal demonstrated varied outcomes.

Case presentation
We present a case of a 17 years old girl, who has ABPA with CF. Throughout the years, her disease has progressed to stage 5 (end stage) despite adequate and prolonged oral steroid therapy. Monthly pulsed intravenous methylprednisolone for 6 months was prescribed in view of steroid dependency. Result showed improvement in term of clinical, biochemical and radiological outcomes.

Conclusion
Intravenous methylprednisolone pulse therapy is safe and effective alternative treatment for steroid dependence and steroid toxicity in ABPA with CF. It may delay progression to end stage pulmonary disease. More studies should be carried out to explore long term outcomes.

CRP7

I CAN'T BREATHE: A CASE SERIES OF VASCULAR SLINGS AND RINGS IN HOSPITAL PULAU PINANG

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Introduction

Vascular rings and slings are rare disease entities with anomalous or aberrant congenital vascular anomalies that lead to airway or esophageal compression. Their presentations are varied in degree of respiratory symptoms and feeding difficulties. Clinical diagnosis is challenging due to diverse manifestations.

Case Presentation

We present six cases with symptomatic vascular rings and slings (four left pulmonary artery slings and two vascular rings- double aortic arch with atresia). They are ranging from 4 months old to to 7 years old with various presentations. Half of the cases are associated with Down syndrome and VACTREL association. 2 of the cases has undergone intervention. There is no mortality reported so far.

Conclusion:

Vascular rings and slings have a wide spectrum of clinical manifestations. Although rare, it should always be considered as differential diagnosis in children with persistent biphasic stridor and recurrent croup-like episodes. Thorough history, physical examination, imaging and bronchoscopy are crucial in diagnosis.

CRP8

A CASE STUDY OF LONG TERM PULMONARY IMPACT OF BRONCHOPULMONARY DYSPLASIA

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Background:
Bronchopulmonary dysplasia (BPD) is a chronic lung disease most commonly seen in premature infants. BPD and long term respiratory consequences are poorly defined. Long term follow up studies raise concerns for persistent pulmonary dysfunction and significant long term pulmonary sequalaes and represent growing burden on health systems.

Objective:
To describe long term respiratory symptoms, morbidity and pulmonary function tests of individuals with preterm birth affected by BPD.

Methodology
A cross sectional study of hospital records from 2010 till 2020 of a total of 101 eligible preterm infants with BPD was conducted. Outcome variables were compared with levels of disease severity. The difference in various characteristics between different BPD severity were analysed using One Way ANOVA, Kruskal Wallis test, Pearson chi-suqared test and Fisher Exact test. All test was two-sided and statistical significance was denoted by $P < 0.05$.

Results:
Outcomes after initial hospitalization that were associated with the initial severity of BPD were as follows: small for age, hospital readmission, required home ventilation after readmission. Although it did not show association of severity of BPD and lung function test, those with severe BPD had poorer lung function compared to no BPD.

Conclusion:
BPD severity was an important predictor of childhood health care.

CRP9

SUCCESSFUL OUTCOME FOLLOWING AORTOPEXY FOR THE TREATMENT OF SEVERE TRACHEOMALACIA: A CASE REPORT OF A 4-MONTH OLD INFANT WITH SIGNIFICANT TRACHEOMALACIA AND REPAIRED TRACHEO-ESOPHAGEAL FISTULA

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Introduction: Tracheomalacia is a condition characterised by structural abnormality of the tracheal cartilage causing excessive collapse or narrowing. Significant respiratory distress, including sudden death can occur. Different surgical interventions, such as aortopexy, have been employed in other countries to manage the life-threatening spectrums of tracheomalacia especially when medical management is inadequate.

Case Presentation: We present a case of a 4-month-old infant who developed recurrent cyanotic spells, despite her tracheo-esophageal fistula being repaired on first day of life and serial dilatations done for the anastomotic site stricture. Both the flexible bronchoscopy and dynamic airway study confirmed her having severe tracheomalacia at the level above the tracheo-esopageal pit with an estimated >75 percent slit-like occlusion.

She underwent aortopexy successfully via partial sternotomy approach after multidisciplinary consensus. This procedure involving anterior fixation of aorta to the sternum to increase mediastinal space and to relieve external compression on the trachea, hence improving tracheomalacia.

Post-operatively, she experienced marked improvement in her respiratory symptoms and thrived with the nocturnal CPAP support with no observed adverse effects. Follow-up bronchoscopy demonstrated significantly improved tracheal stability with minimal collapse.

Discussion: It is essential to look for associated airway abnormalities in patients with trachea-esophageal fistula. This case study also demonstrated successful surgical management of severe tracheomalacia using aortopexy. Therefore, surgical option should be considered in handling severe tracheomalacia cases, particularly those who experience cyanotic spells and associated morbidities.

CRP10

CASE REPORT OF RECURRENT CHYLOTHORAX ASSOCIATED WITH GENERALISED LYMPHATIC DYSPLASIA WITH PIEZO1 MUTATION

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Introduction:

Chylothorax is a rare case of pleural effusion in children and, clinically, challenging to solve and can cause significant morbidity and mortality. The majority of the etiologies were following cardiothoracic surgery, followed by congenital chylothorax and other causes. Recurrent chylothorax in children is even rarer, with few cases reported in the literature.

Case presentation:

We present a 2-year-old boy who was diagnosed with chylothorax post-partum day 44. He received treatments including chest drains and octreotide, which led to symptom resolution following three episodes of chylothorax during the first admission. He was re-admitted for a repeated right-sided chylothorax in January 2023. The chylothorax was drained, a fat-free diet was initiated, and his symptoms resolved. Given that the repeated presentations were unusual, we pursued a genetic whole exome sequencing which identified a PIEZO1 mutation, a likely pathogenic variant associated with autosomal recessive Lymphatic Malformation 6. He is being monitored regularly for recurrent chylothorax while maintaining a fat-free diet.

Discussion:

PIEZO1 is required for lymphatic valve formation, and several lymphatic abnormalities such as neonatal hydrops, lymphedema involving various body regions, and chylothorax have been reported. Persistent or recurrent chylothorax has been infrequently described in association with pathogenic variants in the PIEZO1 gene. This case highlighted the importance of finding the diagnosis of recurrent chylothorax and understanding the molecular foundation, pathophysiology, and lymphatic malformation treatment. Medical treatment remains the mainstay of the treatment over surgical options such as thoracic duct ligation. Recognition and understanding of lymphatic malformation, especially prognosis and treatment options, require further research.

CRP11

CASE SERIES OF INFANTILE SUBGLOTTIC HAEMANGIOMA

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Introduction

Subglottic haemangioma is a rare condition with potentially life-threatening complications. Although it is treatable, unfortunately, the diagnosis is often delayed after the development of complications.

Case series

We present 6 cases of subglottic haemangioma diagnosed at this centre. They were all boys and presented before one year old. There were three distinct patterns of presentation: recurrent croup since 9 months old (2), persistent tachypnoea with NIV dependence since 2 months old (2), and neonatal presentation with recurrent apnoea(1) and severe upper airway obstruction (1). Other co-morbidities were ex-prematurity (2), laryngomalacia (3), and cardiomyopathy (1). All of them had bedside flexible nasopharyngolaryngoscopy which was reported as normal or laryngomalacia. The diagnosis of subglottic haemangioma was made via flexible bronchoscopy (FB) under general anaesthesia. The main finding was abnormal fullness and pinkish colour at the vocal cords. None had cutaneous haemangioma or elsewhere in the body. Five of them were started on Propranolol, while one patient was conservatively managed by the primary team. Three NIV-dependent cases were weaned off respiratory support by 3 to 6 weeks after the commencement of Propranolol. One patient had a tracheostomy prior to subglottic hemangioma diagnosis and succumbed following severe pneumonia. One case required long-term CPAP, for co-existing laryngomalacia. For the 2 patients who have completed treatment with Propranolol for a total of 9 to 10 months, they have remained asymptomatic on follow-up.

Conclusion

Making the diagnosis of subglottic hemangioma in infants is challenging and dependent on the clinician's suspicion and recognition. However, the outcome of treatment is good.

CRP12

VASCULAR RING, A CAUSE OF MALACIC AIRWAY IN NEONATES: A CASE REPORT

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Background:
A vascular ring is an uncommon anomaly that encompasses <1% of congenital cardiac defect .It is a condition in which both the trachea or /and the oesophagus are encircled by vascular structures or its remnants. Extrinsic airway compression (EAC) and malacia are common complications of vascular rings. Respiratory morbidity related to external airway compression is a major concern in children affected by vascular rings

Case Presentation:
A term baby developed respiratory distress after delivery and was intubated at 4 hours of life. There were multiple failed extubations and she was noted to have biphasic stridor with obstructed breathing pattern. A bedside flexible nasopharyngoscope done by ENT team at day 5 of life showed trachiomalacia 1.5cm above carina. CT angiography and CT neck at day 13 of life showed presence of double aortic arch which formed vascular ring. The vascular ring was found to be compressing the trachea, causing significant luminal narrowing 0.6cm in length.This was later confirmed by echocardiography and direct laryngeoscopy,tracheoscopy, suppraglottoplasty and bronchoscopy at day 25 of life showed an upper border of malacic segment 3.8cm from vocal cord, which was a C-shaped cartilage and not a complete ring.
At day 35 of life, the baby underwent left arch division, PDA division through left thoracotomy. She was intubated for total of 41 days, extubated at day 42 of life to non-invasive ventilation and currently still required CPAP support on peep 5 air, awaiting for home CPAP arrangement.

Conclusion:
Vascular ring is a rare congenital anomalies in neonate which commonly cause respiratory airway compression and malacic airway.

POSTER PRESENTATIONS

PP1	**TUBERCULOUS PLEURAL DISEASE UNDER THE EYES OF MEDICAL THORACOSCOPY(MT): THE MANY FACES OF AN OLD ENEMY** **Lily Ding**, Chong-Rui Toh, NC-Huan, Subramanian.P, SM-Lo,RL-Ho, Meryl GL, Larry EN, Hema Yamini.R, Kunji Kannan *Respiratory Department, Hospital Queen Elizabeth, Kota Kinabalu, Sabah*	**161**
PP2	**CPAP COMPLIANCE AMONG OSA PATIENTS AND ITS ASSOCIATED FACTORS** **Syahrinnaquiah Samsuddin[1],** Affida Ahmad[1], Norashikin Saidon[1], Aisya Natasya Musa[1], Mohd Arif Mohd Zim[2] *[1] Department of Internal Medicine, Universiti Teknologi MARA, Sungai Buloh, Selango.* *[2] Department of Internal Medicine, KPJ Damansara Specialist Hospital 2, Kuala Lumpur.*	**162**
PP3	**FROM REFERRAL TO REVELATION: STEERING THE DIAGNOSIS OF CYSTIC LUNG DISEASE IN SINGLE CENTER EXPERIENCE** **Normaszuhaila Ab Hamid1**, Syazatul Syakirin Sirol Aflah1 *1Institut Perubatan Respiratori, Kuala Lumpur, Malaysia*	**163**
PP4	**INDWELLING PLEURAL CATHETERS FOR RECURRENT PLEURAL EFFUSION: A 2- YEAR EXPERIENCE FROM A SINGLE CENTRE** **Izzatul Nadzirah Ismail[1]**, Yeh Kuan Yau[1], Chan Tha A Hing[1], Muhd Faizul Abu Samah[1], Arvindran Alaga[1] *1. Respiratory Department, Hospital Sultanah Bahiyah, Kedah, Malaysia*	**164**
PP5	**DIAGNOSTIC VALUE AND SAFETY OF MEDICAL THORACOSCOPY IN A LARGE TERTIARY HOSPITAL IN SABAH** **Chong-Rui Toh,** Lily Ding, NC-Huan, Kunji Kannan, Hema Yamini.R, Subramanian P, SM-LO, RL-HO, Meryl GL, Larry EN *Respiratory Department, Hospital Queen Elizabeth, Kota Kinabalu, Sabah*	**165**
PP6	**TREATMENT OUTCOME FOR PATIENTS WITH PLEURAL EFFUSION REFERRED TO RESPIRATORY SERVICE IN HOSPITAL TUANKU JAAFAR SEREMBAN (HTJS)** **Fatin Liyana, Han Loong Tan, Raymund Dass, Xiang Ying Lee** *Respiratory Unit, Department of Internal Medicine, Hospital Tuanku Ja'afar Seremban, Malaysia.*	**166**
PP7	**UTILITY OF K-BILD QUESTIONNAIRE IN RA-ILD PATIENTS – DATA ON A TERTIARY RHEUMATOLOGY CENTRE IN MALAYSIA** **Aisya Natasya Musa[1],** Suhaili Shariffudin[2], Hazlyna Baharuddin[1], Roqiah Fatmawati Abdul Kadir[1], Shereen Ch'ng[2], Azmillah Rosman[2], Mohammad Hanafiah[3] *[1] Universiti Teknologi MARA (UiTM), Sungai Buloh* *[2] Hospital Selayang, Selayang* *[3] Sunway Medical Centre, Bandar Sunway*	**167**
PP8	**SPECTRUM OF SLEEP-DISORDERED BREATHING IN CHILDREN WITH PRADER-WILLI SYNDROME AND ITS IMPLICATION** **Yee Ting Tan[1],** Mohamad Shafiq Azanan [1], Shih Ying Hng [2], Kah Peng Eg[1], Muhammad Yazid Jalaludin [1], Meow Keong Thong [1], Nurshadia Samingan [1], Sok Kun Tae [1], Azriyanti Anuar[1], Jessie Anne de Bruyne[2], Anna Marie Nathan [1] *[1]University of Malaya, Kuala Lumpur, Malaysia* *[2]University of Malaya Medical Centre, Kuala Lumpur, Malaysia*	**168**
PP9	**EMPYEMA THORACIS IN CHILDREN: DETERMINING THE AETIOLOGY AND EFFECTIVENESS OF MANAGEMENT STRATEGIES** **Mohamed Mustakim Jalunis[1],** Shih Ying Hng [2], Kah Peng Eg[1,2], Jessie de Bruyne [2], Nadia Fareeda Muhammad Gowdh [1], Anna Marie Nathan[1,2] *[1]University of Malaya, Kuala Lumpur, Malaysia* *[2]University of Malaya Medical Centre, Kuala Lumpur, Malaysia*	**169**
PP10	**THE TREND OF HOSPITAL ADMISSIONS DUE TO RESPIRATORY ILLNESSES TO GENERAL PAEDIATRIC WARDS DURING PRE, INTRA AND POST-COVID-19 PANDEMIC IN A TERTIARY HOSPITAL**	**170**

	Sze Chiang Lui[1], Fauziah Ripin[1], Maria Kamal[1], Sabeera Begum Kader Ibrahim[1], Shamsul Anuar Kamarudin[1], Asiah Kassim[1] *[1]Hospital Tunku Azizah, Kuala Lumpur, Malaysia*	
PP11	**RESPIRATORY OUTCOMES OF SPINAL MUSCULAR ATROPHY CHILD POST GENE THERAPY** **Swee Wei Tan,** Anna Marie Nathan, Kah Peng Eg, Shih Ying H'ng, Meow Keong Thong, Soo Kun Tae *Department of Paediatrics, University Malaya Medical Center, Malaysia*	**171**
PP12	**CONGENITAL TRACHEAL STENOSIS ASSOCIATED LEFT PULMONARY ARTERY SLING AND ITS RESPIRATORY OUTCOME POST TRACHEOPLASTY** **Swee Wei Tan[1],** Nor Diyana Ismail[1], Hasliza A Razak[1], Dayang Zuraini Sahaban[1], Koh, Ooi Yin Khurn[1], Saraiza Abu Bakar[2], Siti Laura Mazalan[3] *[1]Department of Paediatrics, Hospital Sultan Idris Shah, Serdang, Selangor, Malaysia* *[2]Paediatric otorhinolaryngology Unit, Hospital Sultan Idris Shah, Serdang, Selangor, Malaysia* *[3]Paediatric Cardiothoracic Unit, Hospital Sultan Idris Shah, Serdang, Selangor, Malaysia*	**172**
PP13	**NEWLY DIAGNOSED ASTHMA IN PAEDIATRIC RESPIRATORY CLINIC** **Yen Yin Lim, Boon Hai Tan,** Thimesha Vigneswaran, Yee Yen Tan, Shangari Kunaseelan, N. Fafwati Faridatul Akmar Mohammad, Asiah Kassim *Hospital Tunku Azizah, Kuala Lumpur*	**173**

PP1

TUBERCULOUS PLEURAL DISEASE UNDER THE EYES OF MEDICAL THORACOSCOPY(MT): THE MANY FACES OF AN OLD ENEMY

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Introduction

Tuberculous pleural effusion(TPE) is the second most common form of extrapulmonary tuberculosis(TB). It poses a diagnostic challenge due to its variable clinical presentations.

Objectives

To evaluate various visual features of TPE seen through MT, its safety and complication rate.

Methodology

This is a retrospective chart analysis of all patients (n=59) who received the diagnosis of TPE from January 2022 to June 2023 in Hospital Queen Elizabeth Kota Kinabalu following histopathological examination(HPE) evidence of caseating granuloma, and/or Acid fast bacilli(AFB) on Ziehl-Neelsen(ZN) and/or Mycobacterium *tuberculosis*(MTB) culture and/or Polymerase chain reaction(PCR) positive. There were 72.88%(n=43) males and 27.12%(n=16) females with mean age of 54 years(range 18-84). Mean pleural fluid Adenosine deaminase(ADA) and Lactate dehydrogenase(LDH) level were 31.67U/L(range 7.45-81) and 371U/L(40-1929) respectively.

Results

The features observed during MT included the following: (1)Fibrin/Adhesion 66.10%(n=39), (2)Nodules 62.71%(n=37), (3)Hyperemic pleura 30.51% (n=18), (4)Sago-like nodule 8.47%(n=5) and (5)Mass 3.39% (n=2). Following MT and biopsy, 91.53%(n=54) cases showed presence of caseating granuloma, 10.17%(n=6) cases positive for AFB, whereas MTB were cultured in 6.78%(n=4) cases and 1.69%(n=1) MTB PCR positive. 1 case developed re-expansion pulmonary oedema requiring intubation following the procedure but subsequently recovered well. There was no other major complication e.g. major bleeding, injury to major organs or death.

Conclusion

The exploration of undiagnosed exudative pleural effusion through MT reveals a diverse array of visual presentation. It is a safe and effective procedure that can be utilized to evaluate various conditions affecting the pleural space and it enhances treatment confidence especially when initial results are inconclusive.

PP2

CPAP COMPLIANCE AMONG OSA PATIENTS AND ITS ASSOCIATED FACTORS

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Background and objective: OSA is a common disease treated with CPAP to ameliorate symptoms and complications. However, compliance remained a barrier. This study aims to determine the prevalence of CPAP compliance and its associated factors among OSA patients in a tertiary respiratory clinic in Malaysia.

Methods: This cross-sectional study of OSA patients treated with CPAP aged over 18 years in the Respiratory Outpatient Clinic UITM was conducted from June 2022 to November 2022. Baseline demographic data, medical records data, and a questionnaire on compliance were collected.

Results: 80 OSA patients on CPAP treatment were recruited in this study. The mean age was 54 □ 1.4 years old, and the mean AHI at diagnosis was 44.77 □ 20.70/hour. The prevalence of CPAP treatment adherence was 48.8% (n=39). Patients with MSS class III/IV had more than five times increased odds of compliance (p-0.0333). Factors that were found to have reduced the odds of compliance were nasal pillow mask type (OR=0.01, p=0.015), mask loose fit (OR=0.07, p=0.042), inability to breathe easily (OR=0.07, p=0.032) and presence of nasal blockage (OR=0.03, p=0.002). Sociodemographic background, OSA severity, and types of machines were not associated with CPAP compliance.

Conclusions: CPAP adherence in our population remains poor, and factors such as identification of the severity of MSS, presence of nasal congestion, MRSEs (mask fit and ability to breathe while on CPAP), and the correct interface should be addressed to improve CPAP compliance in our patients.

Keywords: Obstructive sleep apnea, continuous positive airway pressure machine, compliance, mask interface, nasal pillow

PP3

FROM REFERRAL TO REVELATION: STEERING THE DIAGNOSIS OF CYSTIC LUNG DISEASE IN SINGLE CENTER EXPERIENCE

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Introduction: The diagnosis of cystic lung disease poses significant challenges due to its diverse etiology, variable clinical presentations, and overlapping radiological features. A comprehensive evaluation is used for diagnosis, which includes a thorough clinical history, physical examination, high resolution computed tomography (HRCT) thorax, and occasionally, histopathology examination. For a precise diagnosis and effective treatment, cystic lung lesions must be identified and characterized.

Objective: The study is to assess the presentation and diagnosis of cystic lung disease made in our hospital.

Method: This is a single-center retrospective cross-sectional study of patients diagnosed with cystic lung disease at Institut Perubatan Respiratori (IPR) between January 1, 2016, and December 31, 2022.

Results: Out of 21 patients, there are 16 female patients (76.2%), and majority are Malay (47.6%). 86.5% were symptomatic in which half with pneumothorax and another half with only respiratory symptoms, remaining 13.5% were asymptomatic. About one third of the patients (38%) have extrapulmonary involvement which were 5 patients with renal angiomyolipoma and 3 with skin nodules. Multidisciplinary meeting was conducted for majority of patients (95.2%) and only 3 patients (14.3%) had biopsy taken. Of these, 7 patients were diagnosed with lymphangioleiomyomatosis (LAM), 6 patients with lymphocytic interstitial pneumonitis (LIP), 5 patients with Birt Hogg Dube (BHD) and 3 patients with pulmonary Langerhan Cell Histocytosis(PLCH). Only 7 patients are currently receiving treatments. 16 patients are still under our follow-up, 1 patient was discharged and unfortunately another 4 patients had defaulted appointment.

Conclusion: The diagnosis of cystic lung disease has provided valuable insights into the diagnostic challenges and outcomes. Nevertheless, a multidisciplinary approach has proven essential in navigating these challenges and improving diagnostic

PP4

INDWELLING PLEURAL CATHETERS FOR RECURRENT PLEURAL EFFUSION: A 2-YEAR EXPERIENCE FROM A SINGLE CENTRE

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Introduction

Recurrent pleural effusions are divided into malignant pleural effusion (MPE) and non-malignant pleural effusion (NMPE), which significantly impair patients' quality of life. Indwelling pleural catheters (IPC) are increasingly used to alleviate symptoms and may lead to autopleurodesis.

Objectives

This study is to assess the efficacy and safety of IPC insertion for both MPE and NMPE.

Methodology

This is a retrospective observational study involving patients who underwent IPC insertion from January 2021 to December 2022 under Respiratory Department, Hospital Sultanah Bahiyah, Kedah, Malaysia. Efficacy is monitored via hospitalisation rates and complications.

Results

12 patients (3 males and 9 females) were included in this study where 11 had MPE and 1 had NMPE. The mean age was 62.5 + 8.7 years old. MPE causes included lung adenocarcinoma (58%), cervical squamous cell carcinoma (8.4%), papillary thyroid carcinoma (8.4%), renal cell carcinoma (8.4%), and ovarian carcinoma (8.4%), while NMPE was caused by idiopathic liver cirrhosis (8.4%). Procedure performed as inpatient for 10 patients (70% discharged within 1 day after IPC training, 30% kept due to other reasons: chemotherapy, pleural tapping on the opposite site, subcutaneous emphysema), while 2 patients done via daycare setting. Hospitalisation duration improved from a mean of 16.4 + 20.6 days to 1.6 + 2.5 days post-IPC. There were low complication rates, with 1 subcutaneous emphysema (resolved spontaneously) and 3 recurrent infections (IPC removed). Two patients achieved autopleurodesis with IPC removed within 6 months.

Conclusion

In the treatment of recurrent pleural effusions, IPC is very effective and secure. IPC reduces the length of hospital stays with few complications. Larger trials are needed, especially to determine how this intervention would affect quality of life and cost-effectiveness.

PP5

DIAGNOSTIC VALUE AND SAFETY OF MEDICAL THORACOSCOPY IN A LARGE TERTIARY HOSPITAL IN SABAH

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Introduction

Exudative pleural effusion poses diagnostic challenges hindering prompt management. Medical thoracoscopy (MT) is an increasingly captivating diagnostic approach, characterized by minimal invasiveness and impressive diagnostic efficacy.

Objectives

To evaluate the diagnostic value and safety of MT for undiagnosed exudative pleural effusion by analyzing visual features.

Methodology

This study included 130 patients who underwent MT using an Olympus LTF-H290 pleuroscope. Demographic data, clinical background, and pleural fluid analysis including the histopathological examination(HPE), acid-fast bacilli(AFB) identification on Ziehl-Neelsen(ZN) stain and/or mycobacterium tuberculosis(MTB) identification were evaluated. The cases were reviewed from January 2022 to June 2023 at Hospital Queen Elizabeth, Kota Kinabalu Sabah.

Results

Out of 130 cases, 122 were analyzed (excluding 1 loss to follow-up and 7 non-diagnostic), resulting in a diagnostic yield of 93.85%. 59(45.38%) were tuberculous pleural effusion(TPE), 39(30%) malignant pleural effusion(MPE), 12(9.23%) complicated parapneumonic effusion(CPPE), 7(5.38%) ureamic effusion, 4(3.07%) normal and 1(0.77%) lymphoma. The MT findings include (i)Nodules, which were the most common visual features in both TPE(n=37, 28.46%) and MPE(n=31, 23.84%), (ii)fibrin/septation which was more prevalent in TPE(n=39, 30%) and less common in MPE(n=10, 7.69%), (iii)hyperemic pleura in TPE(n= 18, 13.85%) and MPE(n=11, 8.46%), (iv)mass, TPE(n=2,1.54%) and MPE(n=1,0.77%) and lastly (v)sago-like nodule appearance was exclusively found in TPE cases(n=5, 3.85%). 1 patient developed re-expansion pulmonary edema requiring intubation post-procedure but recovered well. Otherwise, no other major complications eg. death, major bleeding, or injury to major organs were observed.

Conclusion

MT is a safe and effective procedure for the diagnosis of unexplained pleural effusions

PP6

TREATMENT OUTCOME FOR PATIENTS WITH PLEURAL EFFUSION REFERRED TO RESPIRATORY SERVICE IN HOSPITAL TUANKU JAAFAR SEREMBAN (HTJS)

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Introduction

Commonest cause of pleural effusion (PE) in Malaysia is tuberculosis followed by malignancy. Various guidelines have been established to improve the care of patients with PE, as it has a high mortality rate.

Objectives

To examine the pleural fluid pattern and treatment outcome of those who were referred to HTJS respiratory service, and compare them to the standard of care.

Methodology

A retrospective study evaluating patients' medical records who were admitted with PE and referred to our respiratory services between 1/2/23 to 31/5/23. Pleural fluid pattern necessitating pleural intervention and treatment outcome including length of hospital stay (LOS), intensive care admission and mortality were analysed.

Results

39 hospitalised patients with PE were referred to HTJS respiratory services during the study period. Their mean age is 59 years old with predominant male(25/39, 64%). 92%(36) had exudative effusion based on the Light's criteria. Half(51%) had malignant effusion, followed by parapneumonic effusion(36%) and TB pleura(7.7%). Patients required intensive care for malignant effusion and infection were 6 and 3 respectively, subsequently resulted to 5 demises. Non-malignant mortality constituted 6.7 % of all non-malignant pleural effusions, while 21% mortality was found within the subset of malignant PE. The median LOS is 15 days, but shorter with early referral within 7 days of admission to the respiratory service. Patients who kept the chest drain <5days compared to >5days, had significantly reduced mean LOS (12 versus 19 days, p=0.01) and inpatient mortality rate (10% versus 20%).

Conclusion

Based on collected data, our non-malignant mortality is comparable with literature. Prompt referral to respiratory service is associated with shorter LOS. Shorter duration of keeping the chest drain also significantly reduce LOS and inpatient mortality.

PP7

UTILITY OF K-BILD QUESTIONNAIRE IN RA-ILD PATIENTS – DATA ON A TERTIARY RHEUMATOLOGY CENTRE IN MALAYSIA

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Introduction
ILD is one of the systemic manifestations in Rheumatoid Arthritis patients and causes significant mortality and morbidity. With the potential treatment of RA-ILD such as intensification of DMARDs and use of antifibrotics, the assessment of RA-ILD is important.

Objectives
To assess the utility of K-BILD questionnaire in RA-ILD and to assess the associated factors.

Methodology
This is a cross-sectional study of 156 RA patients who fulfilled 2010 ACR/EULAR criteria done from December 2020 to May 2021. Patients evaluated clinically, asked to fill in the K-BILD questionnaire and patients' demographic, serologic markers, and treatment history data were collected. Data were analysed using SPSS v22.

Results
156 RA patients (90.4% female) with mean age of 56.57±13.19 year-old were included in the study. 10.6% were diagnosed as RA-ILD. Mean total K-BILD (K-BILD T) score were 91.50±14.26. There was significant difference in each component and K-BILD T comparing between RA without ILD and RA-ILD patients. All components and K-BILD T had significant negative correlation with mMRC score and positive correlation with spO_2 and HAQ score. There were also significant association between presence of cough and presence of shortness of breath. K-BILD B and K-BILD T was also negatively correlated with age. There were no association seen in disease activity, RF or anti-CCP positivity, treatment history or other sociodemographic parameters.

Conclusion
K-BILD questionnaire is a useful tool to use in assessing RA-ILD patients and was shown to be correlated to the presence of ILD symptoms and clinical manifestations such as mMRC score and spO2.

PP8

SPECTRUM OF SLEEP-DISORDERED BREATHING IN CHILDREN WITH PRADER-WILLI SYNDROME AND ITS IMPLICATION

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Introduction: Sleep-disordered breathing (SDB) is common in children with Prader-Willi syndrome (PWS). The aims were to determine the a) prevalence and type, b) association of SDB with age, genetic mutation and body mass index, and c) respiratory outcome of SDB in children with PWS.

Methods: This retrospective study involved children with PWS who underwent polysomnography (PSG). SDB was defined as an apnoea-hypopnoea index (AHI) ≥ 1 event/hr. Obstructive sleep apnoea (OSA) was an obstructive apnoea-hypopnoea index (OAHI) of ≥ 1 event/hr. Central sleep apnoea (CSA) was defined by a central apnoea-hypopnoea index (CAHI) ≥ 1 event/hr.

Results: There were 38 children with PWS, 29 with complete PSG data. The median (IQR) age of the first PSG was 2.1 (0.9, 8.1) years. Indication for PSG for suspected OSA was present in only 34.5% of children, while the majority were for pre-growth hormone therapy (62.1%). Almost all (92.3%) had SDB: 53.8% had both OSA and CSA, while 38.5% had pure OSA. None had pure CSA. Severe OSAS was present in 30.8% (n=8). CSA was significantly abnormal in 15.4% (n=4) of patients. The OAHI was higher in older children (Cohen's d= 0.54, medium effect), while the CAHI was higher in children below two years old (Cohen's d= 0.55, medium effect). CSA reduced with age (r=-0.59, p=0.002*), while OSA increased (r=0.44, p=0.023*). Pure OSA was more prevalent in the obese (Phi = 0.80, large effect). SDB was associated with deletions (OSA: φ =0.67, large effect; CSA: φ = 0.71, large effect) compared to non-deletions. Of those not on growth hormone (n=10), all (100%) needed PAP therapy, but half (n=5) could not adhere to it.

Conclusion: Almost all children with PWS have SDB, with OSAS being more prevalent than CSA. Almost all children with PWS will require PAP therapy.

PP9

EMPYEMA THORACIS IN CHILDREN: DETERMINING THE AETIOLOGY AND EFFECTIVENESS OF MANAGEMENT STRATEGIES

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Introduction: Parapneumonic effusion (PPE) was observed in around 28 % of children with bacterial community-acquired pneumonia, with a 5-10% risk of these effusions progressing to empyema**. Aims:** This study describes the clinical profile, aetiology and response to the management of PPE and empyema in children from a single tertiary centre in Malaysia.

Methodology: This retrospective cohort study included all patients with infective pleural effusions managed by the paediatric respiratory department. Patients with co-morbidity were excluded.

Results: The median (IQR) age of the 53 patients was 3 (2.0, 4.5) years old. Only 4 (7.5%) children received the pneumococcal vaccination, but 100% complied with the national immunization programme. Most (n=47, 88.7%) had consumed oral antibiotics before hospitalization. The aetiology was confirmed in 54.7% (n=29) with Mycoplasma (20.8 %), Strep pneumoniae (11.3%), viruses (7.5%) and community-acquired MRSA (1.9%). Blood culture was positive in one patient (1.9%) with *Streptococcus pneumoniae*. The pleural fluid culture was positive in 8 (15%) patients: four (50%) isolated *Streptococcus pneumoniae*, two were positive for *Staphylococcus aureus*, one for MRSA, and one was Adenovirus culture positive. Three out of 4 patients isolated penicillin-resistant *Streptococcus pneumoniae*. Ultrasound was performed in 66% (n=35) patients, and 57% (n=20) had a complex pleural effusion. A chest drain was inserted in 33 (62.3%) patients. Urokinase was used in 35.8% of children, while the surgical intervention was necessary in only 4 (7.5%) patients. The median (IQR) duration of hospitalization was 12 (4,8) days Complications were present in 22.6% of children: pneumothorax (n=8, 15.1%), necrotizing pneumonia (n=6, 11.3%) and bronchopleural fistula (n=5, 9.4%).

Conclusion: Empyema tends to afflict children below 5 years old, and the commonest aetiology were *Mycoplasma pneumoniae* and *Strep pneumoniae.* The majority can be managed conservatively with the use of urokinase. One in five patients experienced complications.

PP10

THE TREND OF HOSPITAL ADMISSIONS DUE TO RESPIRATORY ILLNESSES TO GENERAL PAEDIATRIC WARDS DURING PRE, INTRA AND POST-COVID-19 PANDEMIC IN A TERTIARY HOSPITAL

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Introduction and objective

Coronavirus disease (COVID-19) has affected lifestyles and disease patterns including children. We aim to describe the trend of hospital admissions due to respiratory illnesses to General Paediatric wards during the pre, intra and post-COVID-19 pandemic in a tertiary children's hospital in Malaysia.

Methodology

Retrospective study of children admitted to General Paediatric wards from 27th April 2019 until 31st December 2022 (Pre pandemic: 27th April 2019- 10th March 2020; intra-pandemic: 11th March 2020 – 31st March 2022; post-pandemic 1st April 2022 – 31st December 2022). We collected the sociodemographic and clinical information using the electronic medical record system.

Results

Overall, 57.9% (14,801) of the total hospital admissions in General Paediatric Wards were related to respiratory illnesses (Respiratory admissions). Respiratory admissions during pre (57.3%), intra (50.3%) and post-pandemic (70.4%) compared to non-respiratory admissions pre (42.7%), intra (49.7%) and post (29.6%) ($p<0.001$). The number of monthly respiratory admissions during pre, intra and post-pandemic was 540, 222 and 405, respectively. The commonest cause of admission during pre, intra and post-pandemic was pneumonia (55.2%, 50.7% and 73.1%, respectively). The monthly admissions for respiratory diagnoses during pre, intra and post-pandemic were: pneumonia (223,100 and 338); bronchial asthma (43, 27, and 44); acute bronchiolitis (53, 26, and 33); and tuberculosis (5,3, and 3). For all 3 phases, the majority were male (8818, 59.6%), Malay (13213, 89.3%), with a median age of 21 months (IQR 34 months), and their mean duration of admissions was 3 days.

Conclusion

Temporary reduction in respiratory admissions during intra Covid-19 pandemic followed by a drastic increase during post-pandemic. Our healthcare system should be ready and prepared with strategies for a future pandemic.

PP11

RESPIRATORY OUTCOMES OF SPINAL MUSCULAR ATROPHY CHILD POST GENE THERAPY

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Abstract: Spinal Muscular Atrophy (SMA) is an autosomal recessive genetic disorder which characterized by progressively muscle weakness, respiratory failure and early death. Introduction of gene therapy was associated with favourable respiratory outcomes in patients with SMA. This review was to see the effect of gene therapy on SAM in real world. We report the effect of gene therapy in SMA type I and SMA type II in our center, University Malaya Medical Center.

Method: The clinical data of nine SMA patients (seven SMA type I and 2 SMA type II) who received either Onasemnogene abeparvovec (Zolgensma), Ristiplam (Evrysdi) or Ristiplam followed by Onasemnogene were collected. Follow up on their respiratory support and hospitalization after at least 6 months to 1 year post gene therapy. Assessing on changes in respiratory support and hospitalization due to respiratory complications.

Result: Prior to administration of gene therapy, six patients not on respiratory support while three patients on home non-invasive ventilation (BiPAP). After administration of gene therapy, eight patients were on home BiPAP and only one remained not required respiratory support. One of them had passed away due to respiratory complication.

Conclusion: From our experience, SMA patients remained needing respiratory support after gene therapy. However, frequency of hospitalization for respiratory complications were reduced.

PP12

CONGENITAL TRACHEAL STENOSIS ASSOCIATED LEFT PULMONARY ARTERY SLING AND ITS RESPIRATORY OUTCOME POST TRACHEOPLASTY

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Abstract: Congenital tracheal stenosis (CTS) is a rare airway anomaly that can lead to symptomatic airway obstruction even life-threatening. Wheezing, coughing and difficulty in breathing are the common presentations. CTS can be isolated but it is often associated with congenital heart disease and the most common of which is pulmonary artery sling. Pulmonary artery sling (LPAS) is a rare vascular tracheobronchial compression syndrome. Surgical correction usually is mandatory and combined repair of both defects is the preferred approach. This review is to see the respiratory status and hospitalization due to respiratory complication post operatively.

Method: A retrospective review on clinical records of all patients with congenital tracheal stenosis from January 2019 until June 2023 at Hospital Sultan Idris Shah, Serdang.

Result: There were ten patients who were diagnosed with congenital tracheal stenosis via flexible bronchoscopy or computed tomography (CT), nine patients have associated LPAS while only one patient has isolated CTS. Seven patients had undergone surgical correction while another three patients are awaiting operation schedule.

Conclusion: From our experience, most of the patients not required long term respiratory support post operatively.

PP13

NEWLY DIAGNOSED ASTHMA IN PAEDIATRIC RESPIRATORY CLINIC

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Introduction

Asthma is a chronic illness in children. Despite its high prevalence, paediatric asthma still poses diagnostic and management challenges.

Objectives

To describe the features of newly diagnosed asthma in the paediatric respiratory clinic.

Methodology

A retrospective data collection of newly diagnosed asthma in the respiratory clinic from January to December 2022.

Results

A total of 20 newly diagnosed asthma identified. The median age was 30.5 months (10,116), boys (40%), term gestation (65%), and born via LSCS (30%). The indication of referral was uncontrolled asthma (6) and recurrent respiratory tract infections (14). Common symptoms were daytime cough (40%), wheezing (15%), nocturnal cough (35%), and exercise-induced symptoms (30%). Atopy was common including allergic rhinitis (45%), eczema (40%), food allergy (30%), parents or siblings with asthma (65%), and parents or siblings with other atopies (65%). Twenty percent had previous ICU admissions and 40% had at least 2 respiratory distress in the past 12 months. Almost all (95%) developed respiratory distress following respiratory tract infections and 90% had at least 2 URTI per year. Abnormal physical findings include a hyperinflated chest (50%) and Harrison sulci (45%). Variable practices of MDI Salbutamol were identified. About 55% attended nursery or babysitter, 50% were exposed to tobacco smoke and 5% did not complete immunization by age. However, 60% did not have any pets at home.

Conclusion

Asthma diagnosis remained challenging, especially in children less than 5 years old despite the presence of atopy and strong family history of atopy with wide variation in prescribing MDI Salbutamol.