香港兒童呼吸及過敏學會
Hong Kong Society *of*
PAEDIATRIC RESPIROLOGY AND ALLERGY

3rd Greater Bay Area Paediatric Respirology, Allergy and Critical Care Forum cum 28th HKSPRA Annual Scientific Meeting

31 Oct – 2 Nov 2025 (Fri - Sun)

Programme Book

Supporting Organizations:

hkspra.org

Avamys
fluticasone furoate
鼻眼適

AVAMYS : Designed for comfort[1]

Controlled
Reduced systemic exposure to minimise side effects[4]

Concentrated
Delivers a gentle fine mist in the smallest volume per spray, with no effect on taste[*1-3]

Comfortable
A short nozzle for comfort[1]

Consistent
Delivers the same dose with each spray[1]

Convenient
Side actuation allows for easy administration by patients, carers and parents - a benefit for young children[1]

Clear
Easy to see the volume remaining in the bottle[1]

Indicated for patients with **allergic rhinitis**, aged **2 years** and older[5]

*Compared with BUD, FP, MNF and TAA[3]

AVAMYS MOMENTS FOREVER.

AVAMYS Nasal Spray (Fluticasone Furoate) 27.5mcg/spray Safety Information[5]

• AVAMYS is contraindicated in patients with a history of hypersensitivity to any components of the preparations. • As with all intranasal corticosteroids, the total systemic burden of corticosteroids should be considered whenever other forms of corticosteroids are prescribed concurrently. • Infection of the nasal airways should be appropriately treated but does not constitute a contraindication to treatment with AVAMYS. • Nasopharyngeal candidiasis can occur in patients treated with intranasal steroids, as a class effect. • The lowest dose of AVAMYS that causes suppression of the HPA axis, effects on bone mineral density or growth retardation has not yet been established. However, the systemic bioavailability of fluticasone furoate is low (estimated at 0.50%) when given as AVAMYS and this limits the potential for systemic side effects. • As with other intranasal corticosteroids, physicians should be alert for evidence of systemic effects including ocular changes. • Growth retardation has been reported in children receiving some nasal corticosteroids at licensed doses. It is recommended that the height of children receiving prolonged treatment with nasal corticosteroids is regularly monitored. • No clinical studies have been conducted to investigate interactions of fluticasone furoate on other drugs. • Based on data with another glucocorticoid metabolised by CYP3A4, co-administration with ritonavir is not recommended because of the potential risk of increased systemic exposure to fluticasone furoate. • Adverse Reactions: Very common; epistaxis and nasopharyngitis, Common; nasal ulceration and headache.

BUD, budesonide; **FP,** fluticasone propionate; **MNF,** mometasone furoate; **TAA,** triamcinolone acetonide.

References: 1. Berger WE, et al. Expert opinion on drug delivery;2007;4;689-701 **2.** Avamys Fluticasone furoate (Intranasal formulation) (GDS) GLOBAL DATASHEET 03 April 2018 **3.** Baumann D, et al. Clinical & Experimental Allergy;2009 ;39(10);1540-50 **4.** Daley-Yates PT, et al. Journal of Asthma and Allergy;2021;14;1093-1104 **5.** AVAMYS Hong Kong Prescribing Information Version HK102019 (GDS11v4/ TGA20181204).

PM-HK-FLF-CRD-250006 (07/2027) Date of preparation: 08/2025

AVAMYS Hong Kong Prescribing Information Version HK102019 (GDS11v4/TGA20181204).

GSK
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Tel.(852) 3189 8989

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Welcome Message

Dear colleagues and friends,

On behalf of the organizing committee, it gives me great pleasure to welcome you all to the 3rd Greater Bay Area Paediatric Respirology, Allergy and Critical Care Forum cum 28th HKSPRA Annual Scientific Meeting held from 31st October to 2nd November, 2025 in Hong Kong.

We gather today at a truly exciting nexus of paediatric medicine. In our field, we witness daily the challenges and triumphs of caring for children with respiratory and allergic conditions – from the pervasive issue of asthma and allergies to the complexities of rare lung diseases like bronchiolitis obliterans to children dependent on ventilator for survival at home. The pace of innovation is relentless, and the need for shared knowledge has never been greater.

We have organized not less than 4 pre-meeting workshops to allow an in-depth exposure to a wide range of subjects, i.e. tracheostomy care, lung functions test, dental sleep medicine and respiratory support for children at home and hospital. We would also have free paper presentation with presenters from all over China and Russia.

This meeting embodies a shared vision: to transcend geographical boundaries and forge a powerful alliance dedicated to advancing child health. The Greater Bay Area represents not only an economic powerhouse but also a reservoir of immense medical talent and research potential. By uniting the expertise of Hong Kong with the leading institutions from across the Greater Bay Area, we create a formidable force for clinical excellence, groundbreaking research, and enhanced training in our sub-specialty.

This year, we have curated a programme that we believe is both stimulating and impactful. We are privileged to have with us a world-class faculty of international and regional experts from 7 countries and 5 cities in China. They will share groundbreaking insights on topics ranging from precision medicine in allergic diseases, novel therapy for prevention of asthma, and advances in management of paediatric sepsis to the management of paediatric OSAS.

Beyond the lectures, we encourage you to engage actively in the discussions, network with peers old and new, and foster the collaborations that will define the future of our field. It is through this exchange of ideas and shared experiences that we can collectively elevate the standard of care for the children and families we serve, both in our home cities and across the region.

To our international and mainland speakers and delegates, a very special welcome to Hong Kong. We hope you will find your time here both professionally rewarding and personally enjoyable.

My sincere gratitude goes to the organizing committee, our scientific partners, and our industry supporters, whose unwavering dedication and generosity have made this landmark event possible.

Finally, to every one of you in this meeting – thank you for your commitment to the field of paediatric respirology, allergy, and critical care. Your presence here is a testament to your passion for learning and your dedication to your young patients.

Thank you, and welcome!

Dr. Daniel Ng
Chairman
Organizing Committee

Council and Organizing Committee

Hong Kong Society of Paediatric Respirology and Allergy (2023 - 2025)

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Vice-President	Dr. Wa-keung Chiu *(United Christian Hospital)*
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Faculty Members

International and Regional Faculty	Professor Sami Alhaider, *Riyadh-Saudi Arabia* Dr. Yan-min Bao, *Shenzhen* Dr. George Chay, *Macau SAR* Professor De-hui Chen, *Guangzhou* Professor Anne Goh, *Singapore* Professor Vera Kalugina, *Moscow-Russia* Ms. Sheila Kun, *California-USA* Dr. Cheng Lei, *Macau SAR* Professor Fernando Martinez, *Arizona-USA* Dr. Shu-chi Mu, *Taipei City* Professor Leyla Namazova, *Moscow-Russia* Professor Rujipat Samransamruajkit, *Bangkok-Thailand* Dr. Liam Welsh, *Melbourne-Australia* Professor Zhi-fei Xu, *Beijing*
Local Faculty	Mr. Benson Chan, *Physiotherapist, Kwong Wah Hospital* Dr. Eric Chan, *Specialist in Paediatric Respiratory Medicine, Kwong Wah Hospital* Professor Kate Chan, *Specialist in Paediatric Respiratory Medicine, The Chinese University of Hong Kong* Dr. James Cheng, *Specialist in Paediatric Respiratory Medicine, United Christian Hospital* Ms. Josephine Cheung, *Paediatric Nurse, Hong Kong Sanatorium and Hospital* Dr. Wa-keung Chiu, *Specialist in Paediatric Respiratory Medicine, United Christian Hospital* Dr. Siu-chung Fung, *Dental Surgeon, United Christian Hospital* Dr. Jeni Ho, *Dental Surgeon, Hong Kong Children's Hospital* Professor Ellis Hon, *Specialist in Paediatric Respiratory Medicine, CUHK Medical Centre* Dr. Ka-li Kwok, *Specialist in Paediatric Respiratory Medicine, Kwong Wah Hospital* Dr. Shu-yan Lam, *Specialist in Paediatric Respiratory Medicine, Tuen Mun Hospital* Dr. Irene Lau, *Dental Surgeon, Private Practice* Ms. Susan Law, *Physiotherapist, Kwong Wah Hospital* Dr. Karen Leung, *Paediatrician, Hong Kong Children's Hospital* Ms. Justina Lo, *Physiotherapist, Kwong Wah Hospital* Dr. David Luk, *Paediatrician, United Christian Hospital* Dr. Ting-yat Miu, *Paediatrician, Private Practice* Dr. Daniel Ng, *Specialist in Paediatric Respiratory Medicine, Hong Kong Sanatorium and Hospital* Ms. Selena Ng, *Paediatric Nurse, Kwong Wah Hospital* Dr. Philip Sham, *Paediatrician, Private Practice* Dr. Alfred Tam, *Specialist in Paediatric Respiratory Medicine, Private Practice* Dr. Michelle Tsang, *Specialist in Paediatric Respiratory Medicine, United Christian Hospital* Dr. Vicky Tsui, *Orthodontist, Private Practice* Dr. Birgitta Wong, *Otorhinolaryngologist, Private Practice* Professor Gary Wong, *Specialist in Paediatric Respiratory Medicine, The Chinese University of Hong Kong*

The Organizing Committee would like to extend their deepest appreciation to the faculty members for their active participations in the 3rd Greater Bay Area Paediatric Respirology, Allergy and Critical Care Forum cum 28th HKSPRA Annual Scientific Meeting.

Academic Accreditations

Pre-meeting Workshops

- Workshop I: Respiratory Support for Children: Hospital and Home
- Workshop II: Dental Sleep Medicine
- Workshop III: Lung Function Tests
- Workshop IV: Tracheostomy Care: Immediate and Beyond

	Points Accredited				
	Workshop I 31 October (09:00 – 13:00)	Workshop II 1 November (14:00 – 17:00)	Workshop III 1 November (13:00 – 16:30)	Workshop IV 1 November (13:30 – 16:30)	Category
CME					
Hong Kong College of Paediatricians	3	3	3	3	A-PP
Hong Kong College of Family Physicians	3	3	3	3	OEA-5.02
Hong Kong College of Physicians	1.5	1.5	1.5	1.5	PP-PP
MCHK Programme accredited by HKAM	3	3	3	3	CME-PASSIVE CME
CNE					
Hong Kong Paediatric Nurses Association	2.5	NIL	2.5	3	
CPD					
The College of Dental Surgeons of Hong Kong	2 – L 2.5 – HO	3 – L	2 – L 2.5 – HO	2.5 – L	Category C
Hong Kong Occupational Therapists Board	Pending	Pending	Pending	Pending	
Hong Kong Physiotherapy Association	4	NIL	4	3	Category I

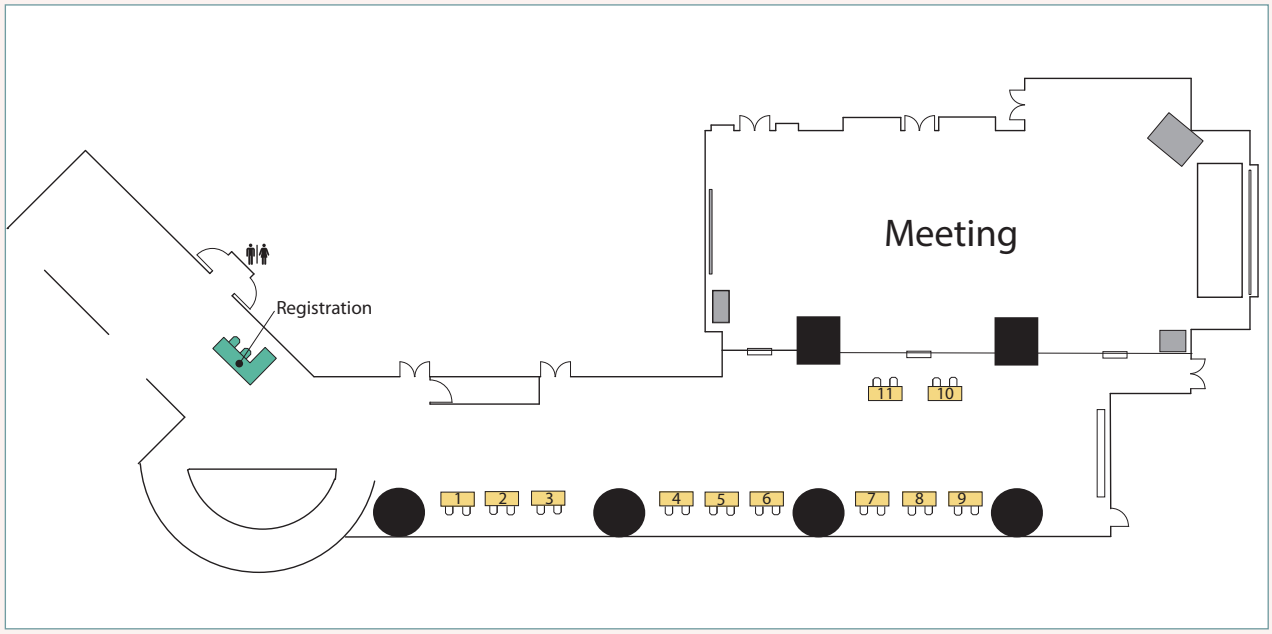
Main Meeting

	Points Accredited			
	Max. for whole function	1 November (18:00 – 19:20)	2 November (08:30 – 17:30)	Category
CME				
Hong Kong College of Paediatricians	13	1	6	A-PP
Hong Kong College of Family Physicians	10	1	5	OEA-5.02
Hong Kong College of Physicians	6.5	0.5	3	PP-PP
MCHK Programme accredited by HKAM	10	1	5	CME-PASSIVE CME
CNE				
Hong Kong Paediatric Nurses Association	6	1	AM: 3.5 PM: 1.5	
CPD				
The College of Dental Surgeons of Hong Kong		1.5 – L	6.5 – L	Category C
Hong Kong Occupational Therapists Board	Pending	Pending	Pending	
Hong Kong Physiotherapy Association		6		Category I

Remark: The final accreditation will be at the discretion of the individual College or Association.

Exhibition Floor Plan

Venue: Ballroom Foyer, 7/F., CORDIS Hong Kong



Exhibitors

Company	Location
Abbott Laboratories Ltd.	6
AstraZeneca Hong Kong Ltd.	11
DKSH Hong Kong Ltd.	9
Getinge Group Hong Kong Ltd.	1
GlaxoSmithKline Ltd.	4
HIPP Hong Kong	3
Inresearch Medical Ltd.	10
Masimo Hong Kong Ltd.	8
Pfizer Corporation Hong Kong Ltd.	5
Sanofi Hong Kong Ltd.	7
Zenfields (Hong Kong) Ltd.	2

Programme

31 October 2025 (Friday)

Pre-meeting Workshop I: Respiratory Support for Children: Hospital and Home

(Venue: Lecture Theatre, 7/F., Li Shu Pui Block, Hong Kong Sanatorium and Hospital)

08:30	**Registration**
	Chairperson: Dr. Daniel Ng
09:00 – 09:20	**Respiratory distress: a comprehensive assessment** *Dr. Daniel Ng, Hong Kong SAR*
09:20 – 09:40	**Monitoring of respiratory distress** *Ms. Josephine Cheung, Hong Kong SAR*
09:40 – 10:00	**Heated humidified high flow with in-line nebulizer** *Ms. Josephine Cheung, Hong Kong SAR*
10:00 – 10:20	**Management of children on non-invasive ventilation in the hospital** *Ms. Sheila Kun, California-USA*
10:20 – 10:50	Break
11:00 – 12:20	**Hands-on Stations (20 minutes each station)** • Station A (sponsored by Celki/FP): Airvo 2/3 *(Ms. Josephine Cheung)* • Station B (sponsored by Celki): CPAP / BiPAP – volume / pressure target; heated / un-heated circuit *(Ms. Sheila Kun)* • Station C (sponsored by Masimo): PVi, RR, ORi *(Dr. Daniel Ng)* • Station D (sponsored by Getinge): Ventilator with graphics *(Dr. Daniel Ng)*
12:20 – 13:00	**Q&A** *All*

1 November 2025 (Saturday)

Pre-meeting Workshop II: Dental Sleep Medicine

(Venue: Shanghai II, 8/F., CORDIS Hong Kong)

13:30	**Registration**
	Chairpersons: Professor Kate Chan and Dr. Jeni Ho
14:00 – 14:40	**An overview of paediatric OSAS** *Dr. Daniel Ng, Hong Kong SAR*
14:40 – 15:20	**Dental assessment and intervention of infants and toddlers** *Dr. Irene Lau, Hong Kong SAR*
15:20 – 16:00	**Orthodontic management of childhood obstructive sleep apnea in Hong Kong** *Dr. Vicky Tsui, Hong Kong SAR*
16:00 – 16:40	**Maxillofacial surgery from infants to young adults** *Dr. Siu-chung Fung, Hong Kong SAR*
16:40 – 17:00	**Q&A** *All*

Programme

1 November 2025 (Saturday)

Pre-meeting Workshop III: Lung Function Tests

(Venue: Shanghai I, 8/F., CORDIS Hong Kong)

12:30	**Registration**
	Chairperson: Dr. Eric Chan
13:00 – 13:15	**Airway challenge tests** *Professor Anne Goh, Singapore*
13:15 – 13:30	**Tidal breathing lung function test** *Dr. Eric Chan, Hong Kong SAR*
13:30 – 13:50	**Body plethysmography, LCI (nitrogen and SF6)** *Dr. Liam Welsh, Melbourne-Australia*
13:50 – 14:05	**FeNO and nNO** *Ms. Selena Ng, Hong Kong SAR*
14:05 – 14:20	**Quality assurance in paediatric lung function laboratory** Dr. Liam Welsh, Melbourne-Australia
14:20 – 14:40	**VO2max assessment in paediatric and adolescent populations** *Ms. Susan Law, Hong Kong SAR*
14:40 – 15:00	**Q&A** *All*
15:00 – 16:30	**Hands-on Stations (20 minutes each station)** • Station A (sponsored by Alpha MedTech): Lung clearance index *(Dr. Liam Welsh)* • Station B (sponsored by Prismtech): FOT *(Dr. Eric Chan)* • Station C (sponsored by Prismtech): FeNO, FnNO *(Ms. Selena Ng)* • Station D (sponsored by Prismtech): Incentive spirometry *(Professor Anne Goh)* • Station E (sponsored by Masimo): Step test *(Mr. Benson Chan and Ms. Justina Lo)*

Programme

1 November 2025 (Saturday)

Pre-meeting Workshop IV: Tracheostomy Care: Immediate and Beyond

(Venue: Shantung, 8/F., CORDIS Hong Kong)

13:00	**Registration**
	Chairpersons: Dr. Wa-keung Chiu and Dr. Karen Leung
13:30 – 14:00	**Tracheostomy – the ways to do** *Dr. Birgitta Wong, Hong Kong SAR*
14:00 – 14:30	**What is next? Post-operative management in the acute hospital setting** *Ms. Sheila Kun, California-USA*
14:30 – 15:00	**Choosing the right tracheostomy tubes** *Dr. Birgitta Wong, Hong Kong SAR*
15:00 – 15:30	**Break and Demonstration** *(sponsored by Medwell)*
15:30 – 16:00	**Tracheostomy emergencies in the home setting – causes and management** *Ms. Sheila Kun, California-USA*
16:00 – 16:15	**Planned extubation – preparation, execution and restoration** *Dr. Birgitta Wong, Hong Kong SAR*
16:15 – 16:30	**D Day: management of decannulation of tracheostomy tube** *Ms. Sheila Kun, California-USA*

1 November 2025 (Saturday)

Main Meeting

(Venue: Shanghai I, 8/F., CORDIS Hong Kong)

17:30	**Registration**
	Keynote Lecture I and II *Chairpersons: Dr. Yan-min Bao and Professor Ellis Hon*
18:00 – 18:35	**Use and misuse of SABA in paediatric asthma** *Dr. Alfred Tam, Hong Kong SAR (sponsored by AstraZeneca)*
18:35 – 19:10	**Trajectories of lung function from childhood to mid-adult life: early origins of different forms of chronic lung disease** *Professor Fernando Martinez, Arizona-USA (pre-recorded)*
19:10 – 19:20	**Question and answer**

Faculty Dinner

(Venue: Shantung, 8/F., CORDIS Hong Kong)

19:30 – 21:30	**Faculty Dinner** *By invitation*

Programme

2 November 2025 (Sunday)

08:00	**Registration**	
	Parallel Free Paper Presentation I **7/F** *Chairperson: Dr. Eric Chan* *Panelists: Professor Sami Alhaider, Professor Anne Goh, Ms. Sheila Kun, Dr. Cheng Lei, Dr. Shu-chi Mu*	**Parallel Free Paper Presentation II** **8/F** *Chairperson: Dr. Wa-keung Chiu* *Panelists: Professor Leyla Namazova, Professor Rujipat Samransamruajkit, Dr. Michelle Tsang, Dr. Liam Welsh, Professor Zhi-fei Xu*
08:30 – 08:40	**Attentional function and nocturnal electroencephalography theta/beta ratio in children with rapid-eye movement sleep-related obstructive sleep apnea** *Dr. Dandi Ma, Beijing*	**Exploring the types of airway inflammation in hospitalized children with asthma** *Dr. Peng Han, Shenzhen*
08:42 – 08:52	**Prevalence of fish and shrimp allergen sensitization in Russian pediatric population: molecular insights** *Professor Vera Kalugina, Moscow-Russia*	**Effects of temperature variation on allergy response in airway epithelial cell: the role of TRPM5** *Dr. Chih-hsuan Lin, Taipei City*
08:54 – 09:04	**Transitioning adolescents on long-term ventilation** *Dr. June Chan, London-UK*	**Effect of adenotonsillectomy on blood pressure in children with OSA at different levels of oxygen desaturation burden index** *Mr. Nobel Yuen, Hong Kong SAR*
09:06 – 09:16	**Post-infectious bronchiolitis obliterans in children: a retrospective analysis of 82 cases** *Dr. Xiao-wen Chen, Guangzhou*	**Tree nut and seed anaphylaxis in a 9-year-old girl: a case report** *Professor Anastasia Lamasova, Moscow-Russia*
09:18 – 09:28	**Study on the mechanism of SGK1 regulating TGF-β1 signaling pathway in BO fibrosis after lung transplantation** *Dr. Hong-wei Li, Guangzhou*	**Lung function trajectory – from infants to primary school children** *Dr. Clara Cheung, Hong Kong SAR*
09:30 – 09:35	**Opening Remarks** *Master-of-Ceremony: Dr. James Cheng* *Welcoming Remarks: Professor Ellis Hon, President 2023 – 2025, HKSPRA*	
	Keynote Lecture III and IV *Chairpersons: Professor Vera Kalugina and Dr. Alfred Tam*	
09:35 – 10:10	**Treatment of allergic diseases – a precision approach** *Professor Anne Goh, Singapore*	
10:10 – 10:45	**Bacterial and antibacterial interventions in asthma prevention and management** *Professor Fernando Martinez, Arizona-USA (pre-recorded)*	
10:45 – 10:55	**Question and answer**	
10:55 – 11:25	**Coffee Break**	

Programme

	Parallel Symposium I: Respirology 7/F *Chairpersons: Dr. Eric Chan and Dr. Shu-chi Mu*	**Parallel Symposium II: Technology-dependent Children Home Management** 8/F *Chairpersons: Dr. Karen Leung and Professor Zhi-fei Xu*
11:25 – 11:50	**Lung clearance index – a new tool** *Dr. Liam Welsh, Melbourne-Australia*	**Hospital-at-home service for technology-dependent children – a Hong Kong private model** *Dr. Daniel Ng, Hong Kong SAR*
11:50 – 12:15	**Bronchoscopy in paediatric respiratory infection – why, how and what?!** *Professor Sami Alhaider, Riyadh-Saudi Arabia*	**Home mechanical ventilation, the Los Angeles experience** *Ms. Sheila Kun, California-USA*
12:15 – 12:40	**The application of bronchoscopy in the diagnosis and treatment of bronchitis obliterans in children** *Professor De-hui Chen, Guangzhou*	**Complex technology-dependent children – the Singapore model** *Professor Anne Goh, Singapore*
12:40 – 12:55	**Question and answer**	**Question and answer**
	Keynote Lecture V and VI *Chairpersons: Professor De-hui Chen and Dr. Wa-keung Chiu*	
12:55 – 13:30	**State-of-the-Art on skin health promotion in children: emollients and beyond** *Dr. David Luk, Hong Kong SAR*	
13:30 – 14:05	**From data to vaccination: understanding the science and need for PCV20** *Professor Kate Chan, Hong Kong SAR (sponsored by Pfizer)*	
14:05 – 14:15	**Question and answer**	
14:15 – 14:25	**29th HKSPRA Annual General Meeting (members only)**	
14:15 – 15:15	**Buffet Lunch**	
	Parallel Symposium III: Sleep Medicine 7/F *Chairpersons: Dr. Ka-li Kwok and Dr. Cheng Lei*	**Parallel Symposium IV: Critical Care and Malnutrition** 8/F *Chairpersons: Dr. George Chay and Dr. Shu-yan Lam*
15:15 – 15:40	**Cognitive dysfunction in children with SDB** *Professor Zhi-fei Xu, Beijing*	**Optimizing paediatric critical care outcomes beyond survival** *Dr. Karen Leung, Hong Kong SAR*
15:40 – 16:05	**Earlier dental intervention for preschool OSAS** *Dr. Irene Lau, Hong Kong SAR*	**Recent advance in paediatric sepsis management: going beyond the guideline** *Professor Rujipat Samransamruajkit, Bangkok-Thailand*
16:05 – 16:30	**Long-term outcome of maxillofacial surgery for paediatric OSAS** *Dr. Siu-chung Fung, Hong Kong SAR*	**Nutrition in children** *Dr. Philip Sham, Hong Kong SAR (sponsored by Abbott Nutrition)*
16:30 – 16:45	**Question and answer**	**Question and answer**
	Keynote Lecture VII *Chairpersons: Professor Sami Alhaider and Dr. Ting-yat Miu*	
16:45 – 17:20	**Emerging treatments and prevention of RSV infection in children** *Professor Gary Wong, Hong Kong SAR*	
17:20 – 17:25	**Question and answer**	
17:25 – 17:30	**Closing Remarks** *Dr. Wa-keung Chiu, President 2025 – 2027, HKSPRA*	

Synopsis

Pre-meeting Workshop I: Respiratory Support for Children: Hospital and Home

Monitoring of respiratory distress

Ms. Josephine Cheung, Hong Kong SAR
Ward Manager, Paediatric Ward, Hong Kong Sanatorium and Hospital

Respiratory rate, peripheral oxygen saturation (SpO_2) and clinical signs of work of breathing are the common parameters to assess the patient's respiratory status. Many paediatric respiratory assessment tools are developed. Some validated and popular tools is such as: the ratio of pules-oximetric peripheral oxygen saturation to fraction of inspired oxygen (SpO_2/FiO_2) and Paediatric Respiratory Assessment Measure (PRAM). SpO_2/FiO_2 ratio is the additional criterion of hypoxemia of acute respiratory distress syndrome. PRAM is a reliable tool to assess the severity of respiratory distress and the respond to treatments in children from 2 – 17 years old with acute asthmatic attack. These two assessment tools could identify the severity of respiratory distress, and to let us know the effects of the treatments.

Heated humidified high flow with in-line nebulizer

Ms. Josephine Cheung, Hong Kong SAR
Ward Manager, Paediatric Ward, Hong Kong Sanatorium and Hospital

Heated humidified high flow therapy is commonly applying on paediatric cases, even on neonates. Many studies showed and supported that heated humidified high flow therapy is safe for children and assisted to reduce respiratory distress. On the other hand, medications (e.g. Ventolin, Combivent, Pulmicort, hypertonic saline, etc) could be administer via the in-line nebulizer. One of the in-line nebulizer is a mesh nebulizer, which is using the vibrating mesh technology to convert medication solution into aerosol. The system is easy to operate and convenience to administer the nebulized medication.

Synopsis

Pre-meeting Workshop I: Respiratory Support for Children: Hospital and Home

Management of children on non-invasive ventilation in the hospital

Ms. Sheila Kun, California-USA
Nurse Care Manager, Division of Pediatric Pulmonology, Children's Hospital Los Angeles

Clinicians are increasingly adopting non-invasive ventilation (NIV) as a first-line treatment for respiratory distress in children, particularly in cases where it can help avoid or delay the need for invasive ventilation; this includes those with conditions like asthma, bronchiolitis, pneumonia, and obstructive sleep apnea. Research has shown that NIV delays intubation and improves respiratory functions. In the acute hospital setting, nurses and clinicians monitor the pap parameters to detect inadequate ventilation and optimize the functions to provide adequate respiratory support. The latest approaches to provide a comfortable breath such as the use of auto-titration will be presented. Lastly, we will describe the potential mechanical complications of the use of NIV such as an ill-fitted mask, leaks, alarms, excessive humidification and their impact on ventilation. The clinical complications of skin and eye irritation, lung injuries, and gastrointestinal discomfort will be reviewed. Strategies to prevent or minimize these complications will be explored, aiming for a successful NIV experience in the hospital setting.

Synopsis

Pre-meeting Workshop II: Dental Sleep Medicine

Dental assessment and intervention of infants and toddlers

Dr. Irene Lau, Hong Kong SAR
Dental Surgeon, Private Practice

This talk will explore the crucial role dental professionals play in assessing and intervening early in cases of sleep disordered breathing (SDB) in infants and toddlers. SDB includes a range of conditions from habitual snoring to obstructive sleep apnea, all of which can have significant effects on a child's health and development. Dental practitioners are uniquely positioned to recognize oral and facial signs associated with SDB, such as mouth breathing, narrow palates, enlarged tonsils or adenoids, malocclusion, and dry mouth. Understanding how poor sleep can negatively impact behavior, cognitive growth, and overall development is key to early detection.

The presentation will review dental assessment protocols, emphasizing the importance of thorough orofacial evaluations, routine dental exams, and detailed parental interviews to identify sleep-related symptoms. Screening tools will be introduced to aid targeted assessments. Intervention strategies discussed will focus primarily on non-surgical approaches, including myofunctional therapy, which aims to improve tongue and oral muscle function to promote nasal breathing and healthier airways. The use of oral appliances designed to support airway development and correct malocclusion will also be covered. Additionally, the necessity of collaborative care involving pediatricians, respiratory medicine, ENT specialists, and other relevant professionals will be highlighted for comprehensive management.

Evidence supporting the positive impact of dental interventions on sleep quality, oral health-related quality of life, as well as behavioral and developmental outcomes, will be reviewed. This session aims to equip practitioners with the knowledge and tools needed to become effective frontline allies in the identification and interdisciplinary management of sleep disordered breathing in young children.

Synopsis

Pre-meeting Workshop II: Dental Sleep Medicine

Orthodontic management of childhood obstructive sleep apnea in Hong Kong

Dr. Vicky Tsui, Hong Kong SAR
Orthodontist, Private Practice

Childhood Obstructive Sleep Apnea (OSA) remains underdiagnosed in Hong Kong, despite increasing awareness of its long-term health impacts. Early signs – mouth breathing, snoring, restless sleep, and behavioral issues – are often misattributed, delaying intervention. Orthodontists play a pivotal role in identifying craniofacial risk factors and initiating early management strategies.

Hong Kong's dense urban environment and high academic demands contribute to overlooked sleep disturbances in children. Common skeletal patterns – narrow maxillae, retrusive mandibles, high palatal vaults – are structural contributors to airway obstruction. Through routine orthodontic assessments, including cephalometric analysis and CBCT imaging, clinicians can detect compromised airway dimensions and guide timely intervention.

Orthodontic treatments such as rapid palatal expansion (RPE), mandibular advancement, and functional appliances have shown promise in improving nasal breathing and reducing OSA severity. These approaches not only enhance facial growth but also support airway patency during critical developmental windows.

Interdisciplinary collaboration is essential. Pediatricians and ENT specialists in Hong Kong are encouraged to refer children with sleep-related symptoms for orthodontic evaluation – not solely for dental alignment, but for skeletal and airway assessment. Likewise, orthodontists must be equipped to recognize red flags and coordinate referrals for sleep studies.

By integrating orthodontic screening into pediatric care pathways, Hong Kong's healthcare system can shift from reactive treatment to proactive prevention.

This abstract advocates for a multidisciplinary approach to pediatric airway health in Hong Kong, positioning orthodontics as one of the key players in early OSA management and long-term wellness.

Synopsis

Pre-meeting Workshop II: Dental Sleep Medicine

Maxillofacial surgery from infants to young adults

Dr. Siu-chung Fung, Hong Kong SAR
Head, Department of Dentistry & Maxillofacial Surgery, United Christian Hospital
Consultant i/c, Dental Unit, Kwong Wah Hospital

This session highlights the expanding role of maxillofacial surgery in the multidisciplinary management of paediatric obstructive sleep apnea (OSAS). Key surgical considerations across developmental stages from infancy through adolescence will be discussed, emphasizing how craniofacial anatomy influences airway patency and sleep quality. The presentation will underscore the importance of early identification and timely intervention, and how surgical correction can be integrated with dental, respiratory, and sleep medicine strategies to optimize outcomes.

Synopsis

Pre-meeting Workshop III: Lung Function Tests

Airway challenge tests

Professor Anne Goh, Singapore

Senior Consultant, Paediatric Respiratory Medicine Service and Allergy Service, Department of Paediatrics, KK Women's and Children's Hospital

Airway challenge tests are used to identify airway hyper-responsiveness and to diagnose asthma. There are direct challenges which act directly on airway smooth muscles causing contraction and indirect challenges which cause release of endogenous mediators that cause airway smooth muscle contraction.

The most commonly performed direct challenge test is the methacholine challenge test. Direct challenge tests have a high sensitivity for detecting airway hyper-responsiveness and have a high negative predictive value and therefore is best used to exclude asthma.

Indirect challenge tests include exercise challenge testing, the use of mannitol or hypertonic saline to induce airway smooth muscle contraction. They have a high specificity and is best used to confirm asthma. A description of these tests will be given.

Body plethysmography, LCI (nitrogen and SF6)

Dr. Liam Welsh, Melbourne-Australia

Scientific Director, Pulmonary Function Laboratory, Royal Children's Hospital

Body plethysmography is considered the gold standard for measuring lung volumes including total lung capacity, functional residual capacity and residual volume. These key outcomes can be used to confirm pathology such as restrictive lung disease, hyperinflation and gas trapping.

The lung clearance index (LCI) assessed via multiple breath washout measures the number of lung turnovers required to washout a tracer gas such as nitrogen or sulphur hexafluoride. The LCI can be used to monitor disease progression and assess response to treatment. It also has the advantage of being able to detect acute clinically relevant changes before conventional lung function tests, such as spirometry, thus enabling early intervention.

Like body plethysmography, the multiple breath washout test can also capture functional residual capacity, however there are some notable differences between the two outcome measures.

This lecture will aim to describe the performance of body plethysmography and multiple breath washout, the clinical utility of the outcomes generated, and an approach to clinical interpretation.

Synopsis

Pre-meeting Workshop III: Lung Function Tests

FeNO and nNO

Ms. Selena Ng, Hong Kong SAR
Advanced Practice Nurse, Department of Paediatric and Adolescent Medicine, Kwong Wah Hospital

Fractional exhaled nitric oxide (FeNO) and nasal nitric oxide (nNO) are non-invasive biomarkers increasingly utilized in paediatric respiratory medicine. FeNO, measured in parts per billion (ppb) from a slow exhalation, directly reflects eosinophilic airway inflammation and is a valuable tool in the diagnosis and management of asthma in children. Elevated FeNO levels support an asthma diagnosis, help identify corticosteroid-responsive disease, and guide anti-inflammatory treatment titration, reducing the risk of over- or under-treatment.

Nasal NO measurement, involving sampling from one nostril while the child breathes orally, serves as a screening tool for primary ciliary dyskinesia (PCD). In PCD, nNO levels are characteristically very low (<77 nL/min in children), providing a highly sensitive and specific diagnostic clue that warrants further confirmatory testing.

The methodology for FeNO in children requires adaptations from adult protocols. While adults use a steady exhalation against resistance, younger children (from ~4-6 years old) may use a supportive technique with biofeedback to ensure a low flow rate (50 mL/s) is maintained for a sufficient exhalation time. Nasal NO measurement can be more challenging in younger children due to the need for cooperation and a closed system.

In summary, FeNO is a key biomarker for Type 2 asthma inflammation, aiding in diagnosis and personalized treatment monitoring. Conversely, nNO is predominantly used as a first-line screening test for PCD. Understanding the distinct clinical applications and age-appropriate techniques for these biomarkers is essential for their effective implementation in paediatric practice.

Quality assurance in paediatric lung function laboratory

Dr. Liam Welsh, Melbourne-Australia
Scientific Director, Pulmonary Function Laboratory, Royal Children's Hospital

Quality assurance is essential for providing world class diagnostic respiratory function investigations and is a vital component of overall clinical governance.

Every paediatric lung function laboratory should run a comprehensive year-round quality assurance program. The information gathered from these activities allows staff to evaluate the quality of the service provided, identify errors and implement change where required so as to maintain and improve service delivery.

This lecture will outline the key quality assurance activities that must be established and maintained within the laboratory to ensure that staff, equipment and protocols are standardised to minimise variation and ensure quality results.

Synopsis

Pre-meeting Workshop III: Lung Function Tests

VO2max assessment in paediatric and adolescent populations

Ms. Susan Law, Hong Kong SAR
Advanced Practice Physiotherapist, Physiotherapy Department, Kwong Wah Hospital

Introduction

VO2max, or maximal oxygen uptake, measures cardiorespiratory fitness (CRF), reflecting oxygen transport and utilization during exercise. In pediatric and adolescent populations, assessing VO2max is key for identifying health risks in those with disordered breathing. Field tests like the Chester Step Test (CST) are practical alternatives to lab-based tests, requiring minimal equipment.

Field Tests for VO2max Assessment

Field tests are simple and cost-effective, ideal for paediatric populations where maximal testing can be challenging. Key tests include:

- *Chester Step Test (CST)*: A submaximal test where participants step on/off a standardized platform at an increasing rate set by a metronome. The test ends at 80% of age-predicted HRmax (220 minus age), Borg RPE ≥15, or 10 minutes. The CST is well-suited for paediatric and adolescent populations. Its submaximal nature also minimizes associated risks. The 2017 *Swiss Medical Weekly* study developed a VO2max prediction model for children aged 7–16 years, valid across nutritional statuses. This presentation will include preliminary data from an ongoing trial using Chester Step Test as VO2 max assessment in Kwong Wah Hospital.

- *3-Minute Step Test (3MST)*: Participants step on/off a standardized platform at a set rate for 3 minutes. Post-exercise HR estimates VO2max.

- *6-Minute Walk Test (6MWT)*: Participants walk as far as possible in 6 minutes, correlating moderately with VO2max (r=0.5–0.7).

- *20-Meter Shuttle Run Test*: A progressive running test, less suitable for obese children due to high demand.

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Synopsis

Pre-meeting Workshop IV: Tracheostomy Care: Immediate and Beyond

Tracheostomy – the ways to do

Dr. Birgitta Wong, Hong Kong SAR
Specialist in Otorhinolaryngology
Honorary Clinical Associate Professor, Department of Surgery, The University of Hong Kong

Tracheostomy is the opening and insertion of an indwelling tube through the neck into the trachea. Tracheostomy in a child demands critical preoperative evaluation on the indication, patients' medical condition and discussions among various specialties. It is important to involve parents and caretakers in the early stage of planning, to provide details on the surgery, postoperative care, future family support and long-term care. In this lecture, we will go through the common indications for paediatric tracheostomy, an overview of the surgical steps, early postoperative care, emergency plan and possible complications. The goal is to establish a safe airway and to optimize ventilation. Patient safety, on-going management of airway pathology and underlying medical problems, parental and family impact, multidisciplinary management must all be addressed continuously.

What is next? Post-operative management in the acute hospital setting

Ms. Sheila Kun, California-USA
Nurse Care Manager, Division of Pediatric Pulmonology, Children's Hospital Los Angeles

Tracheostomy is a simple procedure but requires meticulous care to prevent life-threatening complications. In addition to monitoring the immediate surgical complications of pneumothorax, pneumomediastinum and oesophageal injury, management policies should be in place to prevent accidental decannulation, bleeding, infection, mucous plugging, granulation formation, stoma erosion and pressure sores. Strategies and intervention of these potential complications will be addressed. Cases will be shared to highlight the scenarios. We will also present rare observational data from past experience of pulmonary edema, false tract and ill-fitted tracheostomy tube.

Synopsis

Pre-meeting Workshop IV: Tracheostomy Care: Immediate and Beyond

Choosing the right tracheostomy tubes

Dr. Birgitta Wong, Hong Kong SAR
Specialist in Otorhinolaryngology
Honorary Clinical Associate Professor, Department of Surgery, The University of Hong Kong

There are a variety of tracheostomy tubes available for paediatric patients from neonates to adolescents. The selection and choice of tube is determined by individual clinical conditions. In this lecture we will discuss characteristics of different tubes, their use and the principle behind the choices. Importance must be stressed on a multidisciplinary team approach and discussion among medical teams and the parents during the early postoperative period, long-term support, home care and on-going management of airway pathology. Joint care with dedicated nursing support, allied health, social workers are required to provide continuous education, equipment preparation and support to the patient and family.

Tracheostomy emergencies in the home setting – causes and management

Ms. Sheila Kun, California-USA
Nurse Care Manager, Division of Pediatric Pulmonology, Children's Hospital Los Angeles

Parents of children with tracheostomy are faced with similar challenges of tracheostomy emergencies but in the home setting. This presentation will discuss what are some of the dreaded emergencies that we have seen in the home, what are the possible causes, what responses should be in place to manage these crises effectively. Emergency situations include mucous plugging, accidental decannulation, trach tube disconnection from the ventilator circuit, large volume of secretion, inability to suction through the trach tube, bleeding from the trach and minimizing infection will be included in the discussion. Helpful hints based on expert experience will be shared as well for each situation with emphasis on prevention in the routine care.

Synopsis

Pre-meeting Workshop IV: Tracheostomy Care: Immediate and Beyond

Planned extubation – preparation, execution and restoration

Dr. Birgitta Wong, Hong Kong SAR
Specialist in Otorhinolaryngology
Honorary Clinical Associate Professor, Department of Surgery, The University of Hong Kong

Tracheostomy is a surgical procedure performed in children with complex upper airway obstructions or chronic conditions including respiratory insufficiency, congenital malformations or neuromuscular disorders. Decannulation is considered when there is significant resolution of the original indication. However, the process can be stressful with risks and even mortality. Centers have different decannulation protocols but similar underlying principles. In this lecture, we will discuss the criteria and readiness for decannulation, steps to decannulation such as endoscopic assessment, in-patient observation, down-sizing of tube, capping, monitoring and removal of tube. Polysomnography and pulse oximetry have been used for assessment. A persistent tracheocutaneous fistula after decannulation may require surgical closure. Decannulation failures can occur in different phases, attributed to multiple factors. A stepwise approach involving multidisciplinary support and detailed family discussions are important to carry out a safe and successful outcome.

D Day: management of decannulation of tracheostomy tube

Ms. Sheila Kun, California-USA
Nurse Care Manager, Division of Pediatric Pulmonology, Children's Hospital Los Angeles

The decannulation day could be a terrifying experience for parents. This presentation will offer anticipatory guidance to the post-op and home care post decannulation. Stoma care, suctioning need and assessment strategies will be discussed.

Synopsis

Keynote Lecture I

Use and misuse of SABA in paediatric asthma

Dr. Alfred Tam, Hong Kong SAR
Specialist in Paediatric Respiratory Medicine
Director of Paediatrics and Paediatric Respiratory Medicine, Virtus Medical Group

The discovery of the beta2 receptor in airway smooth muscle led to the use of Salbutamol and other bronchodilators for asthma treatment some 70 years ago. Since then, beta2 agonists have maintained a pivotal role in the management of asthma, children and adults alike. Soon, potent bronchodilators like Fenoterol were found to cause deaths in many asthmatics. However, short-acting beta agonists (SABA) have remained pivotal in asthma management, probably because of its central role in rescue treatment, often bringing dramatic relief to distressed patients. For many years, GINA guidelines have long recommended using Short-acting SABA to relieve asthmatic symptoms, while maintenance inhaled steroids (ICS) should be added on top if symptoms are not controlled. In the 90's, understanding of chronic inflammation as the pathology of asthma has led to an earlier use of ICS in asthma treatment. However, it is only in the recent few years that enough data has accumulated to show that anti-inflammatory treatment should be given even when asthma is mild. Also, SABA used alone will enhance inflammation development in these patients. This presentation will dissect the present-day recommendations for asthma management and highlight the proper use of SABA in the management of paediatric asthma.

Synopsis

Keynote Lecture III

Treatment of allergic diseases – a precision approach

Professor Anne Goh, Singapore
Senior Consultant, Paediatric Respiratory Medicine Service and Allergy Service, Department of Paediatrics, KK Women's and Children's Hospital

In the past, one talked of the atopic march where the earliest manifestation of an allergic disease is atopic dermatitis followed by food allergy. These atopic children may then progress to development of allergic rhinitis and asthma later on. However, we know that not all children progress and they do not follow a sequence in the way they develop allergic diseases. Furthermore, treatment is assumed to work for all patients with the same allergic condition such as inhaled corticosteroids for asthma and nasal steroids for allergic rhinitis. It has been a 'one size fits all' management strategy. However, we are beginning to realise that not all children who wheeze for example behave in the same manner. This has led to the concept of precision medicine where instead of just looking at phenotypes which are a generalization of how a cohort may behave, the use of biomarkers may better help to identify endotypes which may better identify groups who respond better to certain treatments.

In children, asthma is still mainly driven by TH2 inflammatory pathway. The most commonly used biomarkers are IgE, blood eosinophils and exhaled nitric oxide to identify patients who will respond to inhaled corticosteroids or biologics. Another treatment modality is allergen immunotherapy and the usefulness of both modalities in management will be discussed.

Synopsis

Symposium I: Respirology

Lung clearance index – a new tool

Dr. Liam Welsh, Melbourne-Australia
Scientific Director, Pulmonary Function Laboratory, Royal Children's Hospital

The multiple breath washout (MBW) test measures the efficiency of gas mixing in the lungs and has become more widely used in the clinical setting over the past 10 – 15 years.

MBW outcomes detect early lung function impairment and peripheral airway pathology, through its main outcome measure lung clearance index (LCI). LCI measures the number of lung turnovers required to washout an inert tracer gas. The LCI can also be used to monitor disease progression and assess response to treatment. It also has the advantage of being able to detect acute clinically relevant changes before conventional lung function tests, such as spirometry, thus enabling early intervention.

This lecture will aim to describe the multiple breath washout test, the clinical utility of the lung clearance index and its application to lung disease as well as the approach to clinical interpretation.

Synopsis

Symposium I: Respirology

Bronchoscopy in paediatric respiratory infection – why, how and what?!

Professor Sami Alhaider, Riyadh-Saudi Arabia
Consultant Paediatric Respirologist & Interventional Pulmonologist

Respiratory infections represent major cause of mortality and morbidity in children. Lower respiratory tract infections are more challenging as they harbor more illness severity especially in certain patient population. Children su ering from congenital or acquired immunocompromised state, post stem cell and solid organ transplantation, those su ering from malignancies and or receiving chemotherapy are just examples of high-risk population. As many overlapping di erential diagnoses can explain illness manifestations in these patient populations, an accurate diagnosis is a top priority as management plans can be conducted precisely. In addition to benefits related to better resources utilization; by cutting empirical therapies in such patients' presentation, epidemiological data can enhance infection control and related interventions. Over the past decade bronchoscopy applications in paediatric respiratory infections have witnessed advancement in many aspects, that includes but not limited to endoscopic technology, established safety profile, and extended biomolecular-histopathological diagnostic yield. In this lecture Prof Alhaider will present updates on the applications of bronchoscopy in paediatric respiratory infections with more focus on aspects related to why to consider, and not to consider bronchoscopy? how to apply bronchoscopy? and what to look for in such clinical scenarios? Review of literature with critical appraisal of published evidence and reflection from the wealth of clinical experience will be shared.

Synopsis

Symposium I: Respirology

The application of bronchoscopy in the diagnosis and treatment of bronchitis obliterans in children

Professor De-hui Chen, Guangzhou

Professor and Doctoral Supervisor of Pediatrics, The First Affiliated Hospital of Guangzhou Medical University

Bronchitis obliterans (BO) is a severe chronic airway disease in children, characterized by luminal occlusion and progressive airflow limitation. Diagnosis is challenging due to the patchy nature of lesions and the invasiveness of traditional biopsy.

This presentation emphasizes the critical role of bronchoscopy in diagnosing and treating pediatric BO. We demonstrate through clinical cases how interventional techniques – particularly holmium laser recanalization and balloon dilation – can effectively reopen occluded segmental airways, leading to improved lung ventilation and function. Our experience confirms that bronchoscopic intervention can successfully treat segmental atelectasis, potentially delaying or avoiding lung transplantation. However, long-term re-occlusion remains a concern, especially in patients prone to scarring.

In summary, bronchoscopy is a valuable minimally invasive option for managing obstructive airway diseases in children. Multidisciplinary collaboration and long-term follow-up are essential for optimizing outcomes.

Synopsis

Symposium II: Technology-dependent Children Home Management

Home mechanical ventilation, the Los Angeles experience

Ms. Sheila Kun, California-USA
Nurse Care Manager, Division of Pediatric Pulmonology, Children's Hospital Los Angeles

A transformational story over 4 decades. With the experience of managing over 500 home mechanical ventilation children, this presentation will highlight the development of a home care program from 48 years ago. The role of nursing embracing family center care and team work is the foundation of the program with three basic principles in its formation: home care has to be safe, easy and manageable, always listen to the parents, and there is no room for error with airway management. An essential component of the program is its unique team and infrastructure systems in place designed to promote and support this high tech program. The role of research and community resource development play an important part in the advancement of the program.

Synopsis

Symposium II: Technology-dependent Children Home Management

Complex technology-dependent children – the Singapore model

Professor Anne Goh, Singapore
Senior Consultant, Paediatric Respiratory Medicine Service and Allergy Service, Department of Paediatrics, KK Women's and Children's Hospital

Children with complex conditions have multi-system disorders which require multi-disciplinary care. This usually entails multiple visits to the hospital which can be challenging to the families with these children as travelling with children who may not be mobile and require assisted ventilation is not easy. The complex care service was set up to better manage these children and their families by combining the multi-disciplinary team into 1 visit for the patient. Hence, when the patient comes for the appointment, the child and family is seen by several specialists as well as allied health services at the same visit. These visits are co-ordinated by the complex care team which consists of dedicated doctors who are general paediatricians and nurses who will have the overall management of the patient. The team will identify the patients and will oversee their overall care and will co-ordinate the care with the necessary specialists. Home visits are done to better support the patients and their families as they transition home.

For more straight forward cases who require non-invasive ventilation at home such as the children with OSA or uncomplicated neuromuscular disorders, the sleep technologists will help to arrange the mask fitting and help patients to find the necessary vendors for the machines. A smaller multi-disciplinary clinic for neuromuscular patients are conducted to better facilitate management of these patients by minimizing multiple clinic visits.

Synopsis

Keynote Lecture VI

From data to vaccination: understanding the science and need for PCV20

Professor Kate Chan, Hong Kong SAR
Associate Professor, Department of Paediatrics, The Chinese University of Hong Kong
Honorary Consultant, Department of Paediatrics, Prince of Wales Hospital

Pneumococcal infection remains a significant global health concern for children. Despite significant progress in prevention, the disease remains a leading cause of morbidity and mortality in this vulnerable population. This presentation aims to provide a comprehensive overview of the local epidemiology and evolving trends of pneumococcal infections in children, with a particular focus on Hong Kong. Since the introduction of pneumococcal conjugate vaccines (PCVs), there has been a marked reduction in the incidence of invasive pneumococcal disease (IPD) among young children. However, challenges persist, including serotype replacement, vaccine coverage gaps, and emerging resistance patterns. This talk will explore current vaccination strategies, evaluate the effectiveness of existing immunization programs, and discuss considerations for optimal vaccine selection in light of local data and global developments. By understanding these epidemiological patterns and immunization advances, healthcare professionals can optimize vaccine selection and implementation to better prevent pneumococcal diseases and improve pediatric health outcomes.

Synopsis

Symposium III: Sleep Medicine

Cognitive dysfunction in children with SDB

Professor Zhi-fei Xu, Beijing

Consultant Pediatrician, Respiratory Department at Beijing Children's Hospital, National Center for Children's Health

Director, Sleep Center at Beijing Children's Hospital, National Center for Children's Health

To introduce some commonly used subjective behavioral assessment scales and the objective behavioral paradigms for SDB children.

To report characteristics of slow wave activity, theta/beta ratio and spindle activity of nocturnal PSG in pediatric SDB associated with attention and memory dysfunction.

The purpose is to explain the characteristics of cognitive impairment and the association between behavior and EEG changes in children with SDB.

Synopsis

Symposium III: Sleep Medicine

Earlier dental intervention for preschool OSAS

Dr. Irene Lau, Hong Kong SAR
Dental Surgeon, Private Practice

This talk will explore the crucial role dental professionals play in assessing and intervening early in cases of sleep disordered breathing (SDB) in infants and toddlers. SDB includes a range of conditions from habitual snoring to obstructive sleep apnea, all of which can have significant effects on a child's health and development. Dental practitioners are uniquely positioned to recognize oral and facial signs associated with SDB, such as mouth breathing, narrow palates, enlarged tonsils or adenoids, malocclusion, and dry mouth. Understanding how poor sleep can negatively impact behavior, cognitive growth, and overall development is key to early detection.

The presentation will review dental assessment protocols, emphasizing the importance of thorough orofacial evaluations, routine dental exams, and detailed parental interviews to identify sleep-related symptoms. Screening tools will be introduced to aid targeted assessments. Intervention strategies discussed will focus primarily on non-surgical approaches, including myofunctional therapy, which aims to improve tongue and oral muscle function to promote nasal breathing and healthier airways. The use of oral appliances designed to support airway development and correct malocclusion will also be covered. Additionally, the necessity of collaborative care involving pediatricians, respiratory medicine, ENT specialists, and other relevant professionals will be highlighted for comprehensive management.

Evidence supporting the positive impact of dental interventions on sleep quality, oral health-related quality of life, as well as behavioral and developmental outcomes, will be reviewed. This session aims to equip practitioners with the knowledge and tools needed to become effective frontline allies in the identification and interdisciplinary management of sleep disordered breathing in young children.

Synopsis

Symposium III: Sleep Medicine

Long-term outcome of maxillofacial surgery for paediatric OSAS

Dr. Siu-chung Fung, Hong Kong SAR
Head, Department of Dentistry & Maxillofacial Surgery, United Christian Hospital
Consultant i/c, Dental Unit, Kwong Wah Hospital

This lecture covers the role of maxillofacial surgery in managing paediatric obstructive sleep apnea and explores the longitudinal impact of surgical intervention on sleep quality and overall health in children with OSAS, along with multidisciplinary follow-up strategies.

Synopsis

Symposium IV: Critical Care and Malnutrition

Optimizing paediatric critical care outcomes beyond survival

Dr. Karen Leung, Hong Kong SAR
Consultant, Paediatric Intensive Care Unit, Hong Kong Children's Hospital

Paediatric intensive care has evolved from a singular focus on survival to a holistic model that prioritises recovery, function, and quality of life. While most children now survive a PICU admission, morbidity among survivors occurs at roughly twice the rate of mortality. These new or worsened impairments arise from both underlying illness and critical care–related complications, including infections, organ dysfunction, delirium, immobility, sleep disruption, and psychological distress.

Survivorship after critical illness often brings enduring physical, cognitive, social, and mental health sequelae that affect the child and family well beyond discharge. Collectively termed Post-Intensive Care Syndrome (PICS), these challenges – such as muscle weakness, neurocognitive deficits, emotional and behavioural symptoms, and caregiver strain – can impede return to school, participation, and quality of life.

Objective measurement is essential to improving outcomes. This talk will summarise the epidemiology and burden of morbidity among PICU survivors.

- Review practical, validated tools to assess functional status, cognitive and emotional health, and health-related quality of life across developmental stages.
- Present real-world experience implementing the Society of Critical Care Medicine's ICU Liberation Bundle in the PICU, including adaptation from adult practice, operational barriers, and strategies that improved adherence and outcomes.
- Share new data on trajectories of health-related quality of life, associations between biological markers and recovery phenotypes, and psychological outcomes among parents following a child's PICU admission.

This session offers a clear, practical roadmap – and renewed purpose – to identify, measure, and reduce PICS in children. By uniting early mobilisation, delirium prevention, sleep promotion, and genuine family partnership with equitable follow-up, we can transform the PICU journey from survival alone to sustained recovery. Together, we can ensure that every child not only lives, but returns to learning, play, and possibility – with a quality of life that reflects the very best of paediatric critical care.

Synopsis

Symposium IV: Critical Care and Malnutrition

Recent advance in paediatric sepsis management: going beyond the guideline

Professor Rujipat Samransamruajkit, Bangkok-Thailand

Chief, Pediatric Intensive Care Unit, Division of Pediatric Critical Care, Department of Pediatrics, Faculty of Medicine, Chulalongkorn University, King Chulalongkorn Memorial Hospital

While current Pediatric sepsis guidelines provide a vital framework for early recognition and standardized treatment, they often fall short in addressing the complexities of atypical presentations, comorbid conditions, and resource-limited settings. This lecture will touch onsome of new potential managing pediatric septic shock by spotlighting three advanced therapeutic strategies: hemoadsorption, IgM-enriched immunoglobulin (Pentaglobin), and emerging vasopressors such as methylene blue. Case-based discussions will illustrate how expert judgment and multidisciplinary collaboration can optimize outcomes in scenarios where guidelines offer limited direction.

The role of hemoadsorption in removing circulating cytokines and endotoxins, potentially mitigating the hyperinflammatory phase of sepsis. In addition, we will examines the immunomodulatory potential of Pentaglobin, particularly in cases of immune paralysis or multidrug-resistant infections. Finally, it reviews the pharmacodynamics and clinical application of methylene blue as a rescue vasopressor in catecholamine-refractory shock, including its impact on nitric oxide pathways and vascular tone.

Through case-based discussion and emerging evidence, attendees will gain practical insights into integrating these therapies into multidisciplinary care. it aims to equip specialists with the new knowledge to personalize treatment, navigate off-label use, and push the boundaries of pediatric sepsis management when standard protocols fall short. By tailoring interventions, recognizing subtle signs of deterioration, and navigating advanced management in pediatric sepsis care, this can change the ultimate outcomes of pediatric sepsis. Lastly, It will empower the clinicians to think critically, act decisively, and advocate for innovations that improve survival and long-term recovery in children with sepsis.

Synopsis

Symposium IV: Critical Care and Malnutrition

Nutrition in children

Dr. Philip Sham, Hong Kong SAR
Specialist in Paediatrics, Private Practice

Malnutrition affects up to 72% of critically ill children during PICU stays, contributing to prolonged hospitalization with greater length of ICU stay and delayed recovery. Reasonable nutrition supplementation was found to be related with better outcomes in the treatment of malnourished PICU patients. In this session, Dr. Sham presents clinical cases involving pediatric patients with different critical conditions such as respiratory tract, gastrointestinal, urinary tract infections, etc, highlighting the importance of early nutritional assessment and intervention for recovery.

With nutrition status tends to worsen during hospitalization, PICU patients require different modes of nutrition support to fulfil their basic nutritional requirements. During recovery, catch-up growth requires nutritional intake at least twice the resting energy expenditure. Strategy such as supplementing patients with oral nutritional supplements (ONS) is recommended to support optimal outcomes and restore normal growth quickly.

Evidence from recent 2024 Asian study also demonstrates that long-term use of complete and balanced ONS with added arginine, Vitamin K2 and casein phosphopeptides in undernourished children aged 2–5 years leads to positive outcomes on growth such as improved height gain, more lean mass, increased bone mineral density and better vitamin K status without excessive fat accumulation. Additional physical benefits include reduced sick days, improved appetite and enhanced overall health.

Clinical recommendations are provided for nutrition management in critically ill children, advocating for personalized and proactive nutritional strategies to support recovery and growth.

Synopsis

Free Paper Presentation I

Attentional function and nocturnal electroencephalography theta/beta ratio in children with rapid-eye movement sleep-related obstructive sleep apnea

Dandi Ma, Yunxiao Wu, Yao Song, Zhifei Xu

Department of Respiratory Medicine, Beijing Children's Hospital, Capital Medical University, China National Clinical Research Center of Respiratory Diseases, National Center for Children's Health, Beijing, China

Objective

To investigate daytime attentional function in children with rapid eye movement (REM) sleep-related obstructive sleep apnea (OSA; REM-OSA) and its relationship with sleep electroencephalography theta/beta ratio (TBR).

Methods

Ninety-nine children (aged 6 – 11 years) with snoring/mouth breathing were recruited from Beijing Children's Hospital. Participants completed the Attentional Networks Test for Interactions and Vigilance - executive and arousal components (ANTI-Vea) and underwent polysomnography. Groups were classified according to the obstructive apnea/hypopnea index (OAHI): 16 non-OSA, 53 non-REM-OSA, and 30 REM-OSA. The TBR of the frontal, central, and occipital regions was analyzed.

Results

Children with REM-OSA exhibited higher reaction time variability for executive vigilance and more errors during invalid condition ANTI-Vea trials than the non-REM-OSA group. The REM-OSA group exhibited higher TBRs in the frontal and central regions during all sleep stages than the non-OSA and non-REM-OSA groups and a higher TBR in the frontal region during REM sleep than the non-OSA group. Occipital TBR did not differ among the three groups. Reaction time variability for executive vigilance correlated positively with OAHI during REM sleep ($OAHI_{REM}$). TBR in the frontal and central regions during all sleep stages and TBR in the frontal region during REM sleep correlated positively with the number of errors during invalid condition ANTI-Vea trials.

Conclusions

Children with REM-OSA exhibited impaired attentional function, characterized by increased reaction time variability for executive vigilance and poorer performance in the invalid condition attention task trials. The $OAHI_{REM}$ and TBR reflect distinct dimensions of attentional impairment in pediatric OSA.

Synopsis

Free Paper Presentation I

Prevalence of fish and shrimp allergen sensitization in Russian pediatric population: molecular insights

Kalugina V., Levina J., Efendieva K., Vishneva E., Alekseeva A., Namazova-Baranova L.
Pediatrics and Child Health Research Institute of Petrovsky National Research Center of Surgery, Moscow, Russia

Background
Fish and shrimp are included in «big 8 allergens» and caused severe allergic reactions in children. It is important to consider regional and age-specific characteristics when determining sensitization profiles.

Methods
A cross-sectional study was conducted on 238 children, 7.5 [4.1; 11.6] y.o., with symptoms of allergic rhinitis/atopic eczema/food allergy/asthma, living in the Moscow metropolitan area. Sensitization was detected using ImmunoCAP ISAC (n=143) or ALEX2 (n=95) assay.

Results
Overall, 44/238 patients (18.5%) were sensitized to any fish or seafood allergens: 23 (9.7%) – to fish and 21 (8.8%) – to seafood. Most frequently, sensitization to the components of mackerel (Sco s 1) – in 13/95 (12.6%), salmon (Sal s) – in 12/95 cases (11.5%) was observed. 30 (12%) patients reported symptoms when consuming any fish, only 11 patients (4.6%) had clinically relevant sensitization to it. 18 (7%) children had never tried fish. Asymptomatic sensitization to fish was noted in 9/23 (39%) cases. Sensitization to shrimps was observed in 15/238 (6.3%) children, all of them showed sensitization to some house dust mite allergens. Sensitization to northern shrimp (Pan b) was detected in 4/95 (4%), to black tiger shrimp (Pen m 1 and 3) – in 8/238 (3.4%) cases. No sensitization was detected to the common shrimp component Cra c 6. 7 (3%) patients reported any symptoms when consuming shrimp, only 1 had clinically relevant sensitization. 62 (26%) patients had never consumed shrimp. Asymptomatic sensitization to shrimp was observed in 7/15 (47%) patients. Analysis across age groups revealed no significant differences in rates of sensitization to fish or seafood allergens.

Conclusion
Clinically relevant sensitization to fish was over 10 times more frequent than to shrimp. A high rate of asymptomatic sensitization was detected, particularly to shrimp. Component-resolved diagnostics are useful for identifying of the clinically relevant sensitization and avoiding of unnecessary dietary restrictions.

Synopsis

Free Paper Presentation I

Transitioning adolescents on long-term ventilation

June Chan
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Background
For young people on long-term ventilation, adolescence is a period with profound medical, psychological, and social changes. Alongside these challenges, they must navigate the transition from paediatric to adult healthcare services – a process that is often complex, fragmented, and difficult to coordinate. The transition can cause significant anxiety for both young people and their families and carries the risk of disengagement from care and loss to essential services.

Aim
A holistic multi-disciplinary, patient-centred transition programme for young people who are on long-term ventilation.

Method
Transition planning begins at approximately 14 years of age, initiated through discussions between the paediatric consultant, the young person, and their family. Each patient receives individualised consultation with the transition nurse to provide education, guidance, and assessment of specific needs. A comprehensive pre-transition assessment is undertaken, encompassing sleep studies, physiology, physiotherapy, nursing, and psychological evaluation. A transition document summarising the young person's medical, psychosocial, and educational needs is prepared.

The young person is then introduced to the adult physician and multidisciplinary team during a joint face-to-face clinic held within the paediatric setting, involving the paediatric consultant, nurse, and physiotherapist. Together, both teams review ventilation requirements, discuss ongoing care, and assess transition readiness. Transition to adult service will take place after the first independent adult clinic appointment, which typically takes place after the 16th birthday.

Discussion
A structured, clearly defined transition roadmap reduces anxiety and empowers families to engage confidently with adult services. Early engagement of the young person and family fosters confidence, autonomy, and shared decision-making. Collaborative working between paediatric and adult teams ensures continuity of care and promotes shared ownership of the transition process.

Synopsis

Free Paper Presentation I

Post-infectious bronchiolitis obliterans in children: a retrospective analysis of 82 cases

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Purpose
To analyze the clinical characteristics of postinfectious bronchiolitis obliterans (PIBO) in children.

Patients and Methods
This retrospective study included 82 pediatric patients diagnosed with PIBO at the First Affiliated Hospital of Guangzhou Medical University (January 2015–December 2023). Data on demographics, etiology, imaging, lung function, and outcomes were analyzed.

Results
The cohort showed male predominance (70.7%, 58/82) with median onset age of 22 months (IQR 12–41.25); 69.5% were under 3 years. All patients had severe pneumonia history, with 52.4% requiring mechanical ventilation and 64.6% admitted to ICU. Adenovirus (64.6%) and *Mycoplasma pneumoniae* (47.6%) were predominant pathogens, with mixed infections in 63.4%. All cases exhibited mosaic perfusion on HRCT; bronchial wall thickening (65.8%) and atelectasis (53.7%) were common. Lung function testing (n=53) revealed obstructive (30.2%) or mixed (69.8%) dysfunction, with significant decline in FEV1/FVC during follow-up ($P<0.05$). After median 3-year follow-up, no patients achieved complete recovery: 13.4% had symptom relief, 59.8% experienced intermittent symptoms, 26.8% had persistent symptoms, and 9.8% required long-term oxygen therapy.

Conclusion
PIBO primarily affects children under 3 years old, often following severe pneumonia requiring mechanical ventilation. Adenovirus and *Mycoplasma pneumoniae* are key pathogens, with most patients showing persistent pulmonary dysfunction despite partial symptomatic improvement. Long-term outcomes remain poor, emphasizing the need for early intervention strategies.

Keywords
Children, Postinfectious bronchiolitis obliterans, Severe pneumonia, Adenovirus

Synopsis

Free Paper Presentation I

Study on the mechanism of SGK1 regulating TGF-β1 signaling pathway in BO fibrosis after lung transplantation

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Objective
This study aims to comprehensively investigate the role of SGK1 in the development of BO fibrosis and to delineate its functional relationship with the canonical TGF-β1 signaling pathway.

Methods
A well-established mouse orthotopic lung transplantation model was utilized to recapitulate the development of BO. To analyze SGK1 expression patterns and functional impact, we employed a combination of detailed histological staining, immunohistochemistry, and transcriptome-wide RNA sequencing analysis of lung tissues. To bolster the translational relevance of our findings, we further validated key observations using clinical transcriptomic datasets from the Gene Expression Omnibus (GEO) database. Mechanistic studies were conducted in vitro using human airway epithelial cells stimulated with TGF-β1, where the specific SGK1 inhibitor EMD638683 was applied to dissect the contribution of SGK1 to TGF-β1-driven EMT and pro-fibrotic responses.

Results
Our data revealed a significant and sustained upregulation of SGK1 expression in the lungs of the BO mouse model, peaking at day 28 post-transplantation, coinciding with the progression of fibrosis. Pharmacological inhibition of SGK1 with EMD638683 markedly attenuated the fibrotic process. This therapeutic effect was associated with a substantial downregulation of TGF-β1/Smad signaling activity and a consequent suppression of key EMT markers and extracellular matrix (ECM) genes, including Collagen I (COL1) and Fibronectin (FN1). The in vitro experiments confirmed that SGK1 inhibition effectively blunts TGF-β1-induced EMT, reinforcing its critical role in this central pro-fibrotic pathway.

Conclusion
Our findings establish that SGK1 is a pivotal contributor to BO-related fibrosis, acting as a key downstream effector within the TGF-β1 signaling cascade. The demonstrated efficacy of the inhibitor EMD638683 in mitigating fibrotic pathology in our models highlights the robust therapeutic potential of targeting SGK1. Therefore, we propose SGK1 as a novel and druggable target for therapeutic intervention in bronchiolitis obliterans after lung transplantation.

Keywords
Bronchiolitis obliterans, SGK1, Epithelial-mesenchymal transition, Fibrosis

Synopsis

Free Paper Presentation II

Exploring the types of airway inflammation in hospitalized children with asthma

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Background
Asthma is a heterogeneous disease. Precise and personalized treatment is urgently needed to reduce the disease's burden. Thus, exploring the different types of airway inflammation in hospitalized children with asthma is beneficial for accurately managing childhood asthma.

Methods
This retrospective study was conducted on children and adolescents with asthma who were hospitalized for asthma exacerbations. The classification cut-off values of blood eosinophil (EOS) were 150 (Standard 1), 300 (Standard 2), and 470/μL(Standard 3), respectively. Combined with specific IgE (sIgE, 0.7 kU/L), these individuals were divided into four airway inflammation types. We compared the proportion and characteristics of different airway inflammation. The *P* value <0.05 indicated statistical significance.

Results
A total of 351 children were enrolled in our study. Based on standard 1, 39.3% of the subjects were classified as Only-atopy group, 11.7% displayed Only-EOS group, 29.6% exhibited Type 2 (T2)-high group, and 19.4% exhibited T2-low group. Under standard 2, 51.3% of the subjects were classified as the Only-atopy group, 5.4% displayed the Only-EOS group, 17.7% exhibited the T2-high group, and 25.6% exhibited the T2-low group. In standard 3, 57.8% of the subjects were classified as the Only-atopy group, 2.9% displayed the Only-EOS group, 11.1% exhibited the T2-high group, and 28.2% exhibited the T2-low group. Furthermore, our findings indicate that patients with T2 low airway inflammation have a longer time from onset to admission, a longer hospitalization time, a lower proportion of atopic dermatitis, and a higher proportion of siblings.

Conclusion
Regardless of the classification standard employed, the distribution of Only-atopy and Only-EOS was similar in different age periods. Moreover, the types of airway inflammation exhibited a consistent temporal pattern. The classification of airway inflammation in children based on peripheral blood and sIgE levels is a valuable tool for accurately treating asthma.

Synopsis

Free Paper Presentation II

Effects of temperature variation on allergy response in airway epithelial cell: the role of TRPM5

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Background

Asthma is an inflammatory disease triggered by airway stimulation, and extreme temperatures are among the contributing factors to asthma pathogenesis. TRPM5, an ion channel expressing in airway epithelium, participates in calcium signaling regulation and modulates the Th2 immune pathway. However, the role of TRPM5 on allergic epithelial barrier under extreme temperature remains unclear. The objective of this study is to investigate the role of TRPM5 in asthma under extreme temperature.

Material and Method

Human bronchial epithelial cells (BEAS-2B) were exposed to 10 ng/mL Interleukin 13 (IL-13) under 37℃, 30℃, and 40℃ for 5 hours. Cell viability, cytotoxicity LDH, inflammatory response, and TRPM5 and E cadherin expression were measured. SftpcCreERT2/+ mice were used and exposed to 22℃ (control), 10℃ (low temperature), and 40℃ (high temperature) for 7 days (4 hrs/day). Pulmonary function and the distribution of TRPM5 and E-cadherin in airway epithelial cells of mice were examined.

Results

LDH was increased by extreme temperature exposure in BEAS-2B. The expression of TRPM5 was increased by 40℃ but decreased by 30℃. Expression of E-cadherin was decreased by 40℃. Next, we observed 40℃ exposure increased airway resistance and E-cadherin expression on airway epithelial cells of mice.

Conclusion

Our study suggest that extreme temperature regulated the TRPM5 expression and airway epithelial barrier, and increased airway resistance. Extreme weather events driven by climate change may increase the risk of allergy response symptom exacerbation in asthma patients.

Keywords

Asthma, Temperature, TRPM5

Synopsis

Free Paper Presentation II

Effect of adenotonsillectomy on blood pressure in children with OSA at different levels of oxygen desaturation burden index

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Background
Recently, the oxygen desaturation burden index (OBI) has emerged as a novel metric to quantify the severity of hypoxia. In contrast to the negative findings in randomised trials (RCTs) using apnoea-hypopnoea index (AHI) cut-offs to define obstructive sleep apnoea (OSA), it was shown that above OBI 2.1%min/h, children with OSA who received adenotonsillectomy (AT) showed better objective cognitive outcomes than those randomised to watchful waiting (WW).

Objective
We aim to explore the effects of AT on blood pressure (BP) in children with OSA at different levels of OBI.

Methods
A secondary analysis of an RCT designed to evaluate the effects of AT on 24-hour ambulatory BP in pre-pubertal non-obese children with an obstructive AHI (OAHI) ≥3 per hour was conducted. An automated algorithm was developed to identify the dynamic baseline oxygen saturation throughout an oximetry recording, remove signal artefacts and calculate the OBI, defined as the total area (depth x duration) of desaturations of 3% or more below baseline, divided by the total recording time. Analyses of covariance (ANCOVAs) above and below OBI 2.1%min/h were performed to compare the change in z-score of diastolic BP during sleep (sDBPz) between AT and WW groups over a 9-month follow-up period, using baseline sDBPz, age, gender and BMI z-score as covariates. Other ambulatory BP parameters were also investigated.

Results
57 and 39 children from the AT and WW groups, respectively, were included in the analysis. Their mean age was 8.0 ± 1.3, and 74% were male. The median OAHI was 7.0 (interquartile range: 3.7-14.8). In those with OBI >2.1%min/h (n=57), AT decreases sDBPz more significantly than WW (adjusted change: -0.40 vs +0.05, p=0.029). In those with OBI ≤2.1%min/h (n=39), no significant difference in change in sDBPz was found between AT and WW groups (adjusted change: +0.05 vs +0.07, p=0.95). However, there is no statistically significant difference in the effects of AT on sDBPz (p=0.11) or other ambulatory BP parameters above and below the cut-off.

Synopsis

Free Paper Presentation II

Conclusion

AT provides a more significant benefit in sDBPz than watchful waiting in those with more severe hypoxia (OBI >2.1%min/h). This supports the role of hypoxia in driving cardiovascular morbidity among children with OSA, and hints that oxygen desaturation-related metrics may help to identify children who will more likely benefit from AT. More work is needed to refine the OBI metric and validate its utility.

Synopsis

Free Paper Presentation II

Tree nut and seed anaphylaxis in a 9-year-old girl: a case report

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Background

Anaphylaxis can significantly impair quality of life for both children and their families. Accurate diagnosis is critical to ensure appropriate management; however, diagnostic and therapeutic errors, including the omission of epinephrine, remain common.

Case

A 9-year-old girl with a family history of hay fever and atopic eczema was referred to the allergy department. A dog had lived in her household until the child was 3 years old. The child experienced episodes of rhinoconjunctivitis and wheezing upon contact with the dog, and according to her mother, the girl's condition significantly improved after the dog was removed. At the age of 2, she developed recurrent wheezing and was diagnosed with mild asthma and allergic rhinitis. Her treatment included inhaled corticosteroids (ICS) and short-acting beta-agonists (SABA). By age 6, her asthma symptoms became more frequent, and control was achieved with low-dose ICS combined with long-acting beta-agonists (LABA); however, switching to ICS monotherapy led to worsening of symptoms. After cashew ingestion she experienced her first episode of anaphylaxis (facial swelling, dyspnea, nausea, and vomiting), but the condition was not properly recognized. Treatment included intramuscular prednisolone and chloropyramine, along with ICS and SABA, however, epinephrine was not administered. At age 9, she was successfully switched to low-dose ICS monotherapy. Following the consumption of a dessert containing traces of unidentified nuts and seeds, she developed lip and tongue swelling and pruritus. Treatment included IM prednisolone and oral chloropyramine. Component-resolved diagnostics (ALEX2) revealed moderate to very high specific IgE levels to seed storage proteins of several nuts and seeds, as well as sensitization to dog and cat allergen components. Based on these findings, the following management strategy was recommended:

- Strict avoidance of cashew, hazelnut, walnut, macadamia, pistachio, poppy, and products potentially containing their traces.
- Avoidance of dog exposure.
- Low daily dose of ICS with SABA as needed for asthma therapy.
- Given the confirmed risk of anaphylaxis, the patient was prescribed an epinephrine autoinjector (0.3 mg IM, mid-thigh) and provided with detailed instructions for its use.

Conclusion

Component-resolved diagnostics identified the causative allergens, allowing for clear dietary recommendations and anaphylaxis risk management. The family was provided with a written anaphylaxis action plan.

Synopsis

Free Paper Presentation II

Lung function trajectory – from infants to primary school children

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Background and Objective
Raised-volume rapid thoraco-abdominal compression (RVRTC) technique has been used in the past decades to measure infant lung volumes and airway performances, but few published follow up studies with Impulse Oscillometry (IOS) and Spirometry into later childhood. Our study sought to identify long term associations between serial lung function studies, hoping to shed light into early management in infant respiratory diseases.

Methods
From June 2013 to February 2025, a cohort of 190 infants underwent RVRTC and were followed up and retrospectively analyzed. These infants underwent RVRTC because of bronchopulmonary dysplasia, suspected asthma, recurrent wheeze and chronic cough. Baseline characteristics including gestational age, gender, weight, height and underlying respiratory diagnoses were collected. Lung function parameter z-scores were calculated with Chinese population reference.

Results
Our cohort revealed that infants born extremely preterm below 29 weeks had significantly lower zFEV0.5/FVC (p=0.024) and zFEF25-75 (p=0.042) than their counterparts at the time of infant lung function test, at a mean age of 13months. Gestation age and birth weight had significant positive correlation with these two parameters – zFEV0.5/FVC (r=0.218, p=0.011; r=0.189, p=0.029) and zFEF25-75 (r=0.208, p=0.015; r=0.206, p=0.018).

Among the infants, 40 of them had follow up IOS at a mean age of 3.0years, and 11 of them had Spirometry at a mean age of 6.8years. There was a significant negative correlation between zFEV0.5 and zFEF25-75 during infant period with zR5-R20 at toddler age (r=-0.350, p0.027; r=-0.319, p=0.045). This may suggest that better airway function indices in infancy, predicts lower resistance at toddler age.

Carrying on the analysis in school-aged children, significant positive correlations were found between zFEV0.5 and zFVC during infancy with zFVC (r=0.773, p=0.005; r=0.755, p=0.007). Interestingly, zFVC in infancy was negatively correlated with zFEV1/FVC as they grow older (r=-0.664, p=0.026), hinting that catchup growth of FVC may outpace that of FEFV1 due to differential growth of the airways and lung parenchyma.

Bronchodilator responsiveness (BDR) was also recorded in some cases (n=40). Although the numbers are too small to conclude, but among those with BDR positivity found during infancy, the majority (66.7%) remained BDR positive in early childhood.

Synopsis

Free Paper Presentation II

Conclusion

Our results suggest that infant RVRTC data correlates greatly with serial lung function data later on in early childhood, particularly in measurements that delineate airway obstruction and dysfunction. This highlights the value of RVRTC in clinical practice, essentially in facilitating early detection and guiding management of infant respiratory diseases.

Abbreviations

FEF25-75 = Forced expiratory flow between 25% and 75% of vital capacity
FEV0.5/FVC = Forced expiratory volume in 0.5 seconds to forced vital capacity
R5-R20 = Resistance at 20 Hz less the resistance at 5 Hz in IOS

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