21st Congress of the Federation of Asia & Oceania Perinatal Societies (FAOPS) & 28th Congress of the Perinatal Society of Malaysia

SOUVENIR PROGRAMME

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FAOPS

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Position	Name	Affiliation
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President Elect	Dr. Victor Sam Rajadurai	Dept. of Neonatology, KK Women's and Children's Hospital Pte. Ltd., Singapore
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Central	Dr. Setyadewi Lusyati	Neonatologist, Harapan Kita Women's and Children's Hospital, Indonesia
West	Dr. Laila Arjumand Banu	Professor, Obstetrics & Gynecology, Labaid specialized Hospital, Bangladesh
Oceania	Dr. Tim Moss	Obstetrics and Gynecology, Monash University, Australia

Committee Heads

Committee on Research & Publications	Dr. Azanna Ahmad Kamar	Assoc. Professor, Neonatal Intensive Care Unit, Department of Paediatrics, University of Malaya, Malaysia
Committee on Scientific & Training Activities	Dr. Mamoru Tanaka	Professor, Department of Ostetrics and Gynecology, Keio University, Japan
Committee on Programs, Projects, Advocacies & Awards	Dr. Diosdado V Mariano	Obstetrics and Gynecology, De Los Santos Medical Center, Philippines
Committee on Legislation & Elections	Dr. Mohammod Shahidullah	Professor, Neonatology & Pediatrics, Pro Vice-Chnacellor, Bangabandhu Medical University, Bangladesh

Advisory Board

Past President FAOPS 2016	Dr. Chien Nan Lee	Professor, Obstetrics & Gynecology, College of Medicine National Taiwan University, Taiwan
Past-President, FAOPS 2014	Dr. Mohammod Shahidullah	Professor, Neonatology & Pediatrics, Pro Vice-Chnacellor, Bangabandhu Medical University, Bangladesh
Past-President, FAOPS 2012	Dr. David A Ellwood	Professor of Obstetrics & Gynaecology, Griffith University, Australia
Past-President, FAOPS 2010	Dr. Ranjan Kumar Pejaver	HOD-Pediatrics Hon.Professor of Neonatology, KIMS St. Philomena's Hospital, India
Past-President, FAOPS 2008	Dr. Tsuyomu Ikenoue	President of Miyazaki Universityi, Japan
Past-President, FAOPS 2004	Dr. T'sang T'ang Hsieh	Professor, Department of Obstetrics & Gynecology, Chang Gung Memorial Hospital, Taiwan
Past-President, FAOPS 1998	Dr. Victor Yu	Emeritus Professor (Neonatology) Monash University, Australia

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21ST FAOPS / 28TH PSM CONGRESS

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21ST FAOPS / 28TH PSM CONGRESS

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PATRON OF THE PERINATAL SOCIETY MALAYSIA

Y.T.M. Raja Dato' Seri Eleena binti Almarhum Sultan Azlan Muhibbudin Shah Al-Maghfur-lah

WELCOME MESSAGE

- The Organising Chairman

Dear Colleagues and Friends,

It gives me great pleasure to welcome you to the 21st Congress of the Federation of Asia & Oceania Perinatal Societies (FAOPS) which will be hosted by the Perinatal Society of Malaysia (PSM). The world has changed in many ways since our last FAOPS congress in 2018, and those which were planned for 2020 and 2021 had to be cancelled due to the Covid 19 pandemic. Hence FAOPS Kuala Lumpur goes Virtual in August 2022!

The Scientific Committee which includes experts from member countries have planned out a thought provoking and clinically oriented program. Symposia have been designed not only to address the new issues thrown at the perinatology team by the Pandemic but also to address ongoing established issues such as preterm birth shared by member countries. In addition, several pre congress workshops will be held to cover niche areas in perinatology and skills-oriented topics. Last but not least, topics have also been chosen to cover the wellbeing of the health care givers and frontliners in this challenging times.

Sharing and caring being the foundation of FAOPS; this programme will be presented by invited experts from the region and beyond who will share their knowledge and expertise to care for the neonates. Positive outcome of this congress will best be measured by the positive impact on neonates, created by this shared knowledge.

As we go Virtual, FAOPS KL 2020 will provide a unique opportunity for member countries to participate in ways and numbers beyond what was possible in previous congresses. As such I hope the Perinatal Societies in member countries will support by encouraging members to participate in large numbers in this congress. We also look forward to participants using this congress as a regional platform to present their study and research papers. Scientific abstracts will be published in Frontiers of Surgery supplement. Award awaits the best paper.

So, lock your dates for next August and come online to Kuala Lumpur for the FAOPS 2022 from the safety of your home.

Dr. TP Baskaran
Organising Chairperson

WELCOME MESSAGE

- The Scientific Committee Chairperson

Dear colleagues,

The ambiguity of the new world may generate fear of the consequences of our present actions. The pride of our past accomplishments could have merely seemed to be of an avarice, exhausted due to the surge of the ubiquitous COVID-19 virus, the stalling economic state, and persistent wars. Despite the initiatives of the United Nation's sustainable developmental goal targets crafted during the pre-COVID era, the future of the world looks rather bleak with the health systems of many countries being further compromised. The hope lies in our new generation, which therein lies the need to save mothers and babies during this extraordinary time, and improve their outcomes in order to sustain the generation for the new world.

Good outcomes for mothers and babies can only be achieved by ensuring that healthcare professionals are knowledgeable, holistic, ethical, and safe; by ensuring continued acquisition of sound scientific knowledge, effective execution of ethically robust healthcare policies and guidelines, and by assuring equitable access to healthcare. These aims need to remain at the forefront of the policies of governments across all countries despite the present setbacks. The high healthcare burden to provide these, and the uncertainty of the future which gripped across Asia-Oceania countries, had therefore propelled us, the scientific committee, to place the theme of "Saving Mothers and Babies for the New World" as the aim of the FAOPS 2022 congress.

To ensure that this theme is provided justice and can make an immensely impactful difference to the Asia-Oceania nations, the scientific committee is convening speakers from across the globe to deliver a wide-range topics which include basic knowledge of resuscitating mothers and babies, antenatal care, delivery room and neonatal intensive care practices, perinatal healthcare policies, as well as ground-breaking science that can help change the outcomes mothers and babies for the betterment of the future.

In addition, we encourage submission of abstracts of good perinatal research to be shared across the countries. FAOPS 2022 is proud to collaborate with a Science Citation Index Expanded (SCIE), Scopus and PubMed indexed journal - the Frontiers in Surgery, to publish accepted abstracts of scientific research and case reports submitted. The abstract reviewers appointed by our scientific committee will ensure a rigorous selection process for the abstracts, including late breaking abstracts submitted, to select those most impactful and important for presentation at the oral and poster sessions.

Although planned to be a virtual affair, the scientific committee hopes that we will be able to deliver an unforgettable learning experience that will eventually equip all delegates of the congress with the necessary knowledge to save the lives of mothers and babies for our new world. I also take this opportunity to thank our Asia-Oceania perinatal healthcare workers, and sincerely pray that all of us will remain resilient and be able to embrace the new world safely together.

Assoc.Prof.Dr Azanna Ahmad Kamar
The Scientific Chairperson

WELCOME MESSAGE

- The FAOPS President

Dear Colleagues,

It is my honour and pleasure to welcome all of you to the Federation of Asia and Oceania Perinatal Societies (FAOPS) Congress 2022 held in Malaysia. FAOPS was founded in 1978 with more than 40 years of history. The society congress has been held every two years until 2020. After 2020, it was scheduled once a year. However, due to the pandemic of COVID-19, congress 2020 and 2021 were cancelled. Therefore, congress 2022 will be held for the first time in 3 years. During the pandemic, unfortunately, our activity has been interrupted.

However, it will be a good opportunity to regain it. In this sense, I believe congress 2022 will be very important not only for FAOPS but also for all stakeholders in perinatal medicine. The congress will promote the science of perinatology to provide maternal, fetal, and neonatal welfare in the regions. The congress will also provide research and training opportunities in perinatology. I'm confident that many professionals than usual, including obstetricians, midwives, neonatologists, nurses, perinatal counsellors, and families, will participate in the congress.

All FAOPS members will do their utmost to support the success of the congress. Meanwhile, I wish you all the best and healthy days until the congress. The pandemic is not over yet.

Professor Dr. Satoshi Kusuda
President of FAOPS

WELCOME MESSAGE

- The PSM President

Dear Friends and Colleagues

May I offer the warmest Malaysian welcome and Selamat Pagi, a very good morning, to all who are attending this Virtual Conference from overseas. In the same measure, I would like to record my thanks to FAOPS (the Federation of Asia Oceania Perinatal Societies) for giving us the opportunity to host their 21 st Conference in conjunction with our society's 28 th Congress.This is only the second time that the FAOPS Conference is being held in Malaysia, there being so many countries vying to host this biennial conference that on average there has been a gap of 20 years before it is hosted by the same country. The first was a successful one in 2004 at the Sunway Convention Centre in KL. I am sure the congress delegates would have liked to have met the speakers in person, but since the FAOPS Congress scheduled for Jakarta and Tokyo were cancelled due to the Covid-19 pandemic, the organising committee took the option for a virtual conference to ensure that we could proceed with certainty. Nevertheless, I am confident that you will still enjoy the interaction during the Q&A sessions, and that the interesting scientific menu that we have prepared will make up for any webinar fatigue.

For those unfamiliar with the Perinatal Society of Malaysia, the society was registered in 1993, to serve as a professional body to promote maternal, fetal and neonatal wellbeing, to advance the practice of Perinatology in Malaysia, encourage training and research in the field and to provide related expert advice to government and other bodies, as well as to maintain liaison with other local and international organisations or professions involved in Perinatology. Most of our activities have been served through our annual congresses, regional workshops, interactions with the Ministry of health especially the Family Health division, and networking amongst the ever-expanding range of professions caring for mothers and babies. Perinatology has evolved in Malaysia, as in many parts of Asia Oceania, such that the mother, fetus and newborn at high risk are cared for not only by obstetricians, feto-maternal specialists, neonatologists, paediatricians, and nurses but by other specialists in multi-disciplinary teams such as surgeons, cardiac teams, geneticists, paediatric subspecialities and palliative care staff. With reducing birth rate and public awareness of good healthcare standards, parental expectations are higher and the threshold for making complaints of medical negligence has been significantly lowered. It is thus an increasingly challenging minefield to practice Obstetrics and Neonatology.

In order to promote better perinatal care, health care professionals in the field need to be knowledgeable, competent and innovative. They also need to have access to resources which are the tools to their trade, enough hands and space to do the job without compromising patient safety. These are the constant cries from health care workers to the Ministry of Health and resource allocators around the developing world. Not surprisingly, the vulnerabilities of the health care system were made evident during the Pandemic that is, not was, Covid-19. It is with great hope that the White Paper for Health Care Reform in Malaysia will translate into a fair share of resource allocation to services for pregnant women and the 500,000 babies delivered annually. That would include public health services for antenatal and postnatal care of the mother and her newborn. Effective preventative care as well as outreach services to the marginalised, socially deprived, or physically isolated mothers-to-be will help to reduce patient load to critical services and reduce the daily stress of insufficient NICU beds. That is because neonatal health services are at the end of the "healthy fetus and baby" race starting from prenatal care, and every component arm of maternal and newborn services are important for the ultimate outcome of the newborn and his later life. However, having more resources is not the "be-all and end-all" to improve our lot in providing good health care. Most would agree that the medical and

nursing staff in public service needs to be able to spend more time doing direct patient care, their core business, and not doing paperwork for procurement, call rotas, call allowance approval and so forth. After experiencing the Covid 'earthquake' that shook the foundations of our health services and the mental health of our HCW, are there any thoughts to build new work processes to allocate administrative tasks completely to Hospital managers, clerical staff or artificial intelligence , and to use our medical and nursing expertise appropriately? In addition, many doctors have to suspend other work while trying to find NICU beds for their ill patients. In the larger cities with many NICUs, we need an integrated monitoring system of NICU bed availability which does not depend on human input.

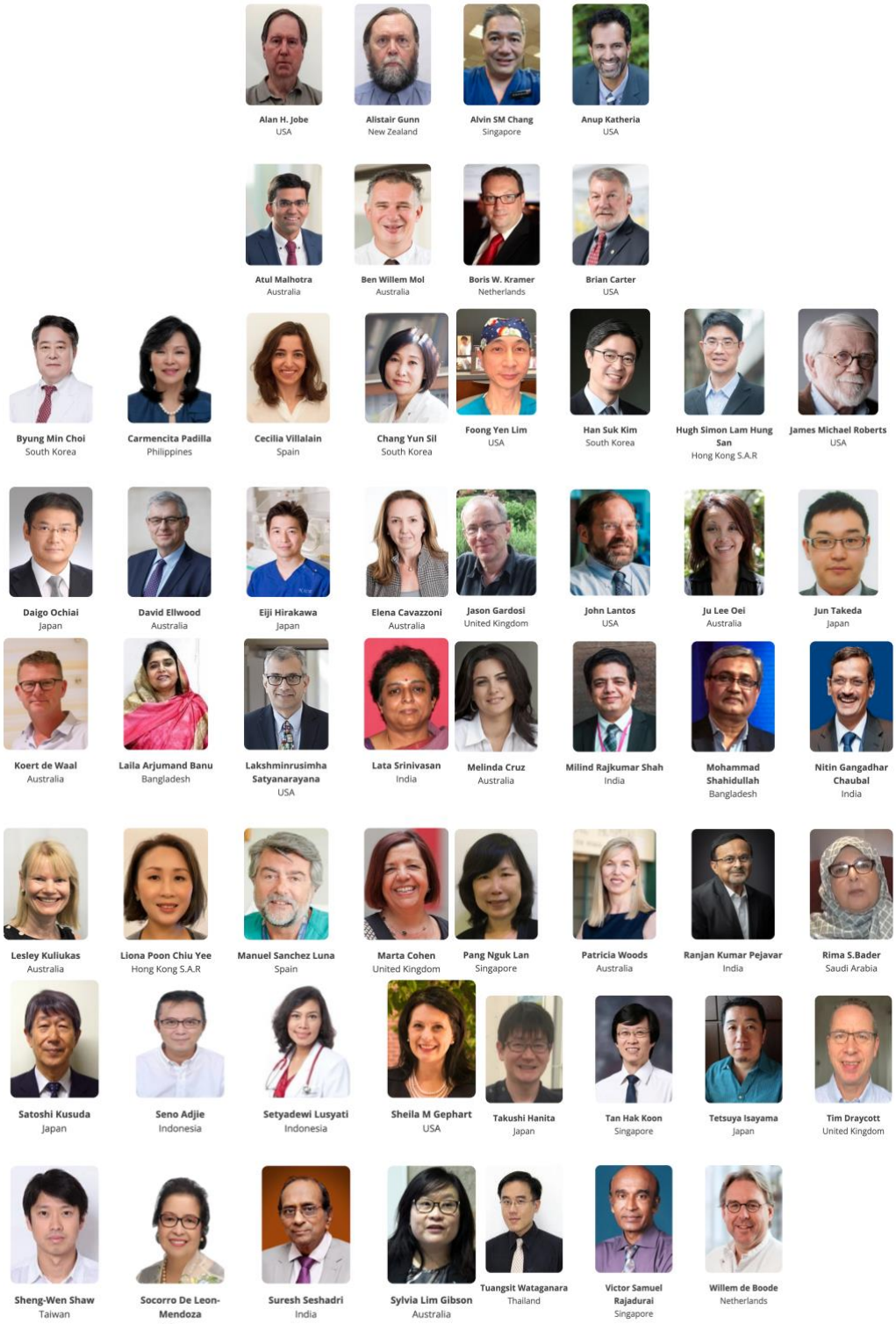
On another note, to reduce our emotional burden, there should be the enhancement of teamwork between hospital ethics committees, PRO and NGOs to help raise funds or form a collective decision, so no one doctor has to make the decision to pull the plug on a life. We, the health care professional, should do our part as well – we need to step back and look at ways to promote patient safety and improve efficiency such as by reducing nosocomial infection, inadvertent extension of length of stay for administrative reasons or poor planning;or to reduce redundancy of patient care when there is no training involved. I shall put down my advocacy hat now and move on to my concluding remarks where I will dwell on the many people whom I wish to thank. The programme has been well planned by the Scientific Committee with the theme of Saving Mothers and Babies in the fast moving New World of medical advances, enhanced technologies, rapid communication and social networking. Kudos to Dr Azanna Kamar, Prof Satoshi Kusuda, Dr Julee Oei and other team members for bringing in speakers with much vision, knowledge, and experience.I am grateful to all those who have supported these efforts through agreeing to share expertise as speakers and panellists at the Conference and we look forward to learning from you over the next few days. I thank Dr Baskaran, the organising Chairman, Dr Wong Chee Sing, our Congress Honorary Secretary, and every member of the organising committee for their hard work. I also wish to thank our many sponsors for their generous support.

Many thanks too to our IT team members who has patiently sought to meet our requirements, and our executive secretary who has been efficiently working in the background.I acknowledge with thanks all the 500 of you who are in attendance as delegates, knowing well that your ability to prompt stimulating discussion from the floor is a key component of any successful conference. To conclude I would like to end with the words of Paulo Coelho, the author of "the Alchemist" "When we strive to be better than we are, everything around us becomes better too"

Good day and I hope you enjoy the conference!

Dr. Irene Cheah Guat Sim
President of PSM

Congress International Faculty



Congress National Faculty

PreCongress International Faculty

Annellee Camet
Singapore

Bernard Wong Yih Terng
Singapore

Elizabeth Evans
Australia

Emily Butler
United Kingdom

Nuzhat Aziz
India

Pallavi Chandra
India

Peter Reynolds
United Kingdom

Sam Koh Chang Hoe
Singapore

Samantha Chan I-Ling
Singapore

Suresh Seshadri
India

Sunil Jaiman
USA

Teck Yee Khong
Australia

PreCongress National Faculty

WORKSHOP 1 : Rescue Strategies & Care of the Surgical Neonate

TIME	PROGRAMME	SPEAKER
0800 - 0815	**Registration**	
0815 - 0830	**WELCOMING SPEECH by FAOPS Scientific Chairperson** (Assoc. Professor Dr Azanna Ahmad Kamar) Introductory Montage Presentation: Rescue Strategies & Care of the Surgical Neonate	
0830 - 0930	**HELP ME SURVIVE!** **An overview of abdominal surgical conditions in the neonate** • *Necrotising enterocolitis* • *Gastroschisis* • *Omphalocoele* • *Other surgical abdomen conditions*	**MR ANAND A/L SANMUGAM** Consultant Paediatric Surgeon Paediatric Surgery Unit, Department of Surgery University of Malaya
0930 - 0945	**Kahoot Online Quiz**	UMMC Nursing Team
0945 - 1030	**HELP ME BREATHE!** **Management of Chest Anomalies in Newborns** • *Congenital Diaphragmatic Hernia* • *Congenital Pulmonary Airway Malformation* • *Tracheoesophageal Fistula* • *Other pulmonary conditions*	**ASSOC. PROF DR SHIREEN ANNE NAH** Consultant Paediatric Surgeon & Head of Paediatric Surgery Unit, Department of Surgery, University of Malaya.
1030 - 1045	**VIRTUAL TEA BREAK**	
1045 – 1145	**STABILISE ME!** **Pre- and Post-Operative Nursing Management of the Surgical Neonate**	
1045 - 1115	**Transporting the Surgical Neonate: Briefing, Stabilisation, Retrieval & Debriefing** • *Stabilisation of the neonate pre-operatively prior transfer to surgical centre and prior OT.* • *Retrieval of the neonate post-surgery (from the OT back to the NICU)* • *Briefing & debriefing*	**DR. HAYMALATHA AP RAJAGAM** Nursing Tutor and Neonatal Nurse, Institut Latihan Kementerian Kesihatan Malaysia Sultan Azlan Shah Tanjung Rambutan, Perak
1115 - 1145	**The Post-Op Neonate: Anticipating Problems** *Anticipating problems in the post-surgical neonate & its management* *(a) hypotension* *(b) fluid overload* *(c) infection prevention* *(d) hypoglycaemia* *(e) hypothermia*	**DR NURDALIZA MOHD BADARUDIN** Consultant Paediatric Surgeon & Head of Unit, Paediatric Surgery, Hospital Raja Permaisuri Bainun, Ipoh
1145 - 1230	**Breakout Sessions (Facilitator-Led)**	

	GROUP A	GROUP B	GROUP C	GROUP D
1145 – 1200	**SCENARIO 1: Stoma** Storyboard: Baby with stoma bag	**SCENARIO 1: Stoma** Storyboard: Baby with stoma bag	**SCENARIO 1: Stoma** Storyboard: Baby with stoma bag	**SCENARIO 1: Stoma** Storyboard: Baby with stoma bag
1200 – 1215	**SCENARIO 2: Silo** Storyboard: Baby with silo	**SCENARIO 2: Silo** Storyboard: Baby with silo	**SCENARIO 2: Silo** Storyboard: Baby with silo	**SCENARIO 2: Silo** Storyboard: Baby with silo
1215 – 1230	**SCENARIO 3: Central line care bundle**	**SCENARIO 3: Central line care bundle**	**SCENARIO 3: Central line care bundle**	**SCENARIO 3: Central line care bundle**

1230 - 1330	**Discussion & Group Presentation (40 minutes)** **Video Presentation (20 minutes)** Video 1: Stoma Care Video 2: Silo Care Video 3: Central Line Bundle
1330 – 1415	**VIRTUAL LUNCH**
1415 – 1500	**NO PAIN PLEASE!!** **Assessment & Management of Pain in Surgical Neonates** **MS ELIZABETH EVANS** Department of Pain, Sydney Children's Hospital, Randwick, Australia
1500 - 1545	**Breakout Sessions (Facilitator-Led)**

	GROUP A	GROUP B	GROUP C	GROUP D
1500 – 1515	**SCENARIO 3** Tracheostomy care	**SCENARIO 3** Tracheostomy care	**SCENARIO 3** Tracheostomy care	**SCENARIO 3** Tracheostomy care
1515 – 1530	**SCENARIO 4** Drains, Chest tubes	**SCENARIO 4** Drains, Chest tubes	**SCENARIO 4** Drains, Chest tubes	**SCENARIO 4** Drains, Chest tubes
1530 - 1545	**SCENARIO 5** Nutrition Support - (i) TPN (ii) Perfusor feeding	**SCENARIO 5** Nutrition Support - (i) TPN (ii) Perfusor feeding	**SCENARIO 5** Nutrition Support - (i) TPN (ii) Perfusor feeding	**SCENARIO 5** Nutrition Support - (i) TPN (ii) Perfusor feeding

1545 - 1645	**Discussion & Group Presentation (40 minutes)** **Video Presentation (20 minutes)** Video 4: Tracheostomy care - suction, emergency changing of tracheostomy & dressing Video 5: Care of Drains & Chest Tubes Video 6: Changing of TPN
1645 - 1700	**QUIZ & SUMMARY** **END OF WORKSHOP**

WORKSHOP 2 : Perinatal Pathology : Learning from the Loss

Thursday, 25 August 2022

CPD 8 Points [CPDE38478]

This workshop will focus on identifying causes of fetal losses. The speakers will highlight the importance of working up the index cases in such patients. The lectures will provide sample investigation algorithm which may be put to practice. Some actual cases will discussed.

ATTENDEES

O& G medical officers and junior specialist. Members of paediatric team working in a neonatal Ward. Public health medical officers and specialist. Members of Perinatal Morbidity and Mortality sub-committees.

LEARNING OUTCOMES

1. Recognising the spectrum and burden of stillbirth issues.
2. Learn the role of autopsies in working up index cases of intrauterine fetal loss.
3. Understanding the scope of placental examination in determining cause of fetal outcomes.
4. Learn to identify fetal issues by simple examination and limited investigations.

PROGRAMME

TIME	PROGRAMME	SPEAKER
0800 - 0815	**Registration**	
0815 - 0830	**WELCOMING SPEECH by FAOPS Organizing Chairman** – Dr. TP Baskaran *Senior Consultant, Maternal Fetal Medicine Specialist, Gleneagles Hospital Kuala Lumpur*	
Introduction		
0830 - 0915	**The Spectrum and Magnitude of Perinatal Loss**	Dr Nuzhat Aziz *Consultant Obstetrician Fernandez Hospital, Hyderabad, INDIA*
0915 -1000	**The role and clinical impact of perinatal autopsy: An overview**	Prof Dr Teck Yee Khong *Senior Consultant PathologistWomen's and Children's Hospital, NorthAdelaide, AUSTRALIA*
1000 - 1015	**Virtual tea break**	
Placenta		
1015 - 1045	**Gross examination of the placenta**	Prof Dr Tan Geok Chin *Professor and Consultant Anatomical Pathologist Department of Pathology National University of Malaysia Kuala Lumpur, MALAYSIA*
1045 - 1115	**Chorioamnionitis: Is placental examination necessary?**	A/Prof Dr Wong Yin Ping *Department of Pathology National University of Malaysia Kuala Lumpur, MALAYSIA*
1115 - 1145	**The Stillbirth placenta: An essential witness.**	A/ Prof Dr Nur Syahrina Rahim *Consultant Pathologist Faculty of Medicine and Health Science USIM, MALAYSIA*
1145 - 1215	**Placenta in a growth restricted fetus**	Dr Sunil Jaiman *Section Head, Placental Pathology Unit Wayne State University School of Medicine, Michigan, USA*
1215 - 1230	**Q & A**	
1230 - 1300	**Fascinating cases with diagnostic twist: The Placenta**	
1300 - 1400	**Virtual Lunch**	
The Fetus		
1400 - 1430	**Clinical documentation of a still birth**	Dr Afidah Yusoff *Obstetrician & Gynaecologist Maternal Fetal Medicine Fellow Hospital Tunku Azizah, Kuala Lumour, MALAYSIA*
1430 - 1530	**Autopsy in Still birth: Complete autopsy including consent and medicolegal aspect**	Dr Khairul Anuar Zainun *Forensic Pathologist & Head of Department Forensic Medicine Department Hospital Serdang, Selangor, MALAYSIA*
1530 - 1600	**Role of genetic testing in Product of Conception**	Dr Roziana Ariffin *Consultant Genetic Pathologist Pantai Premier Pathology Kuala Lumpur, MALAYSIA*
1600 - 1615	**Q & A**	
1615 - 1700	**Fascinating cases with diagnostic twist: The Fetus**	

WORKSHOP 3 : Fetal Growth Essentials and Antenatal Surveillance

Thursday, 25 August 2022

CPD 4 Points [CPDE37343]

Abnormal fetal growth is a leading risk factor for stillbirth. It is estimated that as many as 2.6 million stillbirths occur globally, with more than 7100 deaths a day, mostly in developing countries. Many cases of abnormal fetal growth go unnoticed throughout pregnancy and as a result become high risk for perinatal morbidity or mortality.

This workshop has been organised in collaboration with the Perinatal Institute, UK

PROGRAMME

	Time	Topic	Speaker
1	1345	Registration	
2	1400	**Normal and abnormal growth** • Customised assessment • Fetal size vs growth velocity	Jason Gardosi
3	1430	Discussion	
4	1440	**Multidisciplinary care pathway** • Risk assessment • Standardised fundal height measurement	Emily Butler, Jason Gardosi
5	1510	Discussion	
6	1520	Break	
7	1530	**Investigation and Management** • Early and late onset fetal growth restriction • Ultrasound and Doppler	Suresh Seshadri
8	1600	Discussion	
9	1610	**Implementing fetal growth surveillance** • Challenges and solutions • Evaluation in practice	Nuzhat Aziz, Pallavi Chandra
10	1640	Plenary Discussion	
11	1700	Close	

WORKSHOP 4 : Quality Improvement : the Basics

Thursday, 25 August 2022

CPD 4 Points [CPDE36907]

While Quality Improvement (QI) is gaining a lot of attention in many healthcare systems, good intentions alone are not enough to improve the quality of care.

The science of quality improvement needs to be complemented by the art of quality of improvement such as communicating to influence others, activating their agency and getting leadership support to champion the change to create a culture of continuous learning and improvement.

LEARNING OUTCOMES

This workshop addresses three fundamental questions that must be addressed in any QI initiative:

1. What is the problem? Many QI efforts have failed despite best efforts by trying to answer the wrong problem.
2. What are the root causes of the problem? Just as in clinical medicine, tackling symptoms instead of the underlying pathology often results in recurrence of the problem.
3. How do we know that our interventions work? In developing and testing solutions, we need to ensure that they are reliable, sustainable and scalable

ATTENDEES

This workshop is for anyone who is keen to improve the processes and outcomes in their respective areas of work. This workshop will equip participants with the essential QI knowledge, principles and tools that can be applied in their daily work, in both clinical and non-clinical areas, and even personal life.

PROGRAMME

	Time	Topic	Tools	Speaker
1	0800-0815	Registration		
2	0815-0900	**What is the problem?** - Identifying problems and opportunities - Verifying problems with data - Selecting problems to work on	Flowchart	Samantha Chan
3	0900-1000	**Root causes of the problem** - Identifying root causes of the problem - Verifying the root causes - Selecting root causes to address	Tree diagram Pareto chart	Sam Koh
4	1000-1030	**Break**		
5	1030-1130	**Developing solutions** - Piloting solutions for evidence of improvement with data - Using data to look for evidence of sustainability	PDSA cycles Run charts	Pang Nguk Lan
6	1130-1230	**Sustaining your gains** -Spread -Implementation -The Psychology of change	- 7 Spreadly Sins - Psychology of change framework	Alvin Chang
	1230-1345	**Lunch**		

WORKSHOP 5 : Root Cause Analysis

Thursday, 25 August 2022

CPD 4 Points [CPDE36908]

Healthcare is a risky business. In fact, healthcare is said to be more dangerous than some of the high reliability industries around- nuclear power plants, airlines, European railroads etc. The Swiss cheese model alludes to a series of latent failures in processes lead to a catastrophic event, often times leading to permanent disabilities and death.

There is a need to improve reliability in the way healthcare is being delivered to patients. This involves looking at the system and processes involve in creating a conducive environment where healthcare workers will do the right thing reliably even when no one is watching over them in our institutions.

Root cause analysis (RCA) if done correctly, is an important tool one can adopt to ensure identification of contributing factors that addresses the system as a whole. In return, more effective recommendations can be generated. Recommendations that will address the system, rather than the human factor, can offer long-term, stable solutions. High reliability industries had relied on this tool to ensure they remain safe as it create learning opportunities for the purpose of improvement and excellence.

PROGRAMME

	Time	Topic	Facilitators
1	1345-1400	Registration	
2	1400-1415	Introduction to Root Cause Analysis (RCA)	Alvin Chang
3	1415-1430	**Flowcharts**	Alvin Chang
4	1430-1515	Exercise 1- Flowcharts (Breakout rooms)	Pang Nguk Lan Annellee Camet Sam Koh Samantha Chan Bernard Wong
5	1515-1530	Break	
6	1530-1540	**Cause and Effects**	Alvin Chang
7	1540-1610	Exercise 2- Cause and Effects (Breakout rooms)	Pang Nguk Lan Annellee Camet Sam Koh Samantha Chan Bernard Wong
8	1610-1620	**Root Cause Statements**	Alvin Chang
9	1620-1640	Exercise 3- Root Cause Statements (Breakout rooms)	Pang Nguk Lan Annellee Camet Sam Koh Samantha Chan Bernard Wong
10	1640-1645	**Making Recommendations**	Alvin Chang
11	1645-1700	Wrap-up	Alvin Chang Pang Nguk Lan Annellee Camet Sam Koh Samantha Chan Bernard Wong

Hands-On Workshops

WORKSHOP 1 : Advanced Twins Ultrasound Workshop

24th August 2022

Venue Lecture: Level 7, Auditorium, Dept of O & G, Women and Children Complex, UMMC
Venue Hands on session: Level 1, MFM unit, Women and Children Complex, UMMC

Introduction:

This physical ultrasound workshop is designed and delivered by experts in the Maternal Fetal Medicine. It focuses on unique issues related to diagnosis and management of twin pregnancy. The role and importance of the use of ultrasound will be highlighted. This workshop has options for lectures only and with hands on session (limited to 30 participants). The hands-on session will have scan demonstrations and interactive practical session with actual clinical cases.

Program:

From 0800 - 0815	**Registration**	
0815 - 0830	Twins: Delight or Dilemma	Dr. Sofiah Sulaiman
0830 - 0900	Role of ultrasound in Multiple Pregnancy	Dr. Rahmah Saaid
0900 - 0930	Growth pattern in twin pregnancy	Dr. Neha Sethi
0930 - 1000	First trimester scan in twins	Dr. Sudarshan Suresh
1000 - 1030	**Break**	
1030 - 1100	Co -Twin Demise	Dr. Vallikannu Narayanan
1100 - 1130	Fetal complications unique to twins	Dr. Tan Lee Na
1130 - 1200	Conjoint twins: Diagnosis and Management	Dr. T P Baskaran
1200 -1230	Discordant anomalies: monitoring and management	Dr. Buvanes Chelliah
1230 - 1300	NIPT & Invasive testing in Twin Pregnancies	Dr. T P Baskaran
1300 - 1400	**Lunch**	
1400 - 1630	Live demo and hands on	UMMC MFM team
Hands on Session by Members of the Department of O & G, UMMC, Kuala Lumpur		

Hands-On Workshops

WORKSHOP 2 : Regional Advanced Neonatal Airway and Ventilation Workshop

24th & 25th of September 2022

Venue Hands on session: Clinical Skills Laboratory, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

INTRODUCTION

This dedicated hands-on airway and ventilation workshop aims to ensure that the clinician will be equipped with the knowledge to manage neonatal difficult airways and subsequently manage advanced ventilation issues for various emergency situations. The sessions will have mock scenarios and live presentations with an interactive discussion regarding the management of specific neonatal conditions. The sessions will be led by speakers who are experienced with neonatal ventilation and in the management of difficult airways.

LEARNING OUTCOMES

At the end of the workshop, attendees will be able to

1. Outline the steps in approaching infants with difficult airways.
2. Acquire the skills to handle infants with difficult airways in different situations.
3. Describe the indications and limitations of various modes of invasive and non-invasive ventilation for neonates.
4. Outline the ventilation recruitment strategies and troubleshooting methods in rescuing neonates with oxygenation or ventilation issues.

VENUE

Clinical Skills Laboratory, Faculty of Medicine,

University of Malaya, Kuala Lumpur, Malaysia

PROGRAMME

DAY 1: SATURDAY, 24TH SEPTEMBER 2022		
TIME	**TOPIC**	**SPEAKERS**
0830 – 0900	**REGISTRATION** **Coffee & Biscuits**	
0900 - 0915	Welcome Message	Azanna A Kamar
0915 – 0930	A Multi-Disciplinary Approach to Difficult Airways in Neonates	Jeyanthi Kulasegarah
0930 – 1000	Recognising the Difficult Airway: Airway Assessment Tools & Scores in Neonates	Jeyanthi Kulasegarah
1000 - 1030	Be Prepared! The Difficult Airway Toolkit	Jayasakthi Saniasaya
1030 – 1100	BREAK TIME!	
1100 - 1145	**Different Strokes! Clinical scenarios of difficult airway situations** *Cleft lip & palate* *Cystic hygroma* *Micrognathia & Other morphological anomalies (Pierre Robin etc.)*	Jeyanthi Kulasegarah & Jayasakthi Saniasaya
1145 – 1245	Groups' Hands-On Session Airway Challenges 1) *Inserting the Tracheostomy & Trachy-Change* 2) *Bougie for endotracheal tube change/ ETT change methods* 3) *Direct Video Laryngoscope* 4) *Laryngeal Mask Airway Insertion and Uses* 5) *Video stylet flexible scope*	All Facilitators
1245 – 1300	**Airway Wrap-Up** ***Questions & Answers***	
1300 – 1400	LUNCH	

DAY 1: SATURDAY, 24TH SEPTEMBER 2022		
TIME	**TOPIC**	**SPEAKERS**
1400 – 1430	Protect First! Ventilating the "Normal?" Neonatal Lungs - *Normal lung physiology* - *Overview of Ventilation Modes* - *Non-Invasive Ventilation Modes*	Matthew Chong Hon Loon
1430 – 1500	Understanding pulmonary mechanics of the diseased neonatal lungs (1) Respiratory Distress Syndrome (2) Bronchopulmonary Dysplasia	Azanna Ahmad Kamar
1500 – 1530	Understanding pulmonary mechanics of the diseased neonatal lungs (1) Congenital Diaphragmatic Hernia (2) Meconium Aspiration Syndrome	Peter Reynolds
1530 – 1715	Groups' Hands-On Session **Understanding Common Advanced Ventilation Modes: How, Why & Why Not?**	All Facilitators
	(1) Volume guarantee a. Which volume, which babies? b. Auto-CPAP and Increased work-of-breathing c. The Low TV Alarm (2) Patient Trigger Ventilation (PTV/SIPPV) (3) SIMV + PS/ PSV (4) Protecting the Lungs: (a) Surfactant Techniques - MIST/ LISA (b) Surfactant Techniques - INSURE & Post Surfactant Ventilation Strategy with Non-Invasive Ventilation	(1) Peter Reynolds/ Azanna A Kamar (2) Eric Ang (3) Wong Chee Sing (4) (a) Matthew Chong (b) Cheong Shu Meng
1715 – 1730	**WRAP-UP DAY 1: Tea & Biscuits** **Questions & Answers**	

DAY 2: SUNDAY, 25th SEPTEMBER 2022		
TIME	**TOPIC**	**SPEAKER**
0830 – 0900	**REGISTRATION** **Coffee & Biscuits**	
0900 – 0945	Neurally Adjust Ventilator Assist (NAVA) in the NICU – Clinical Scenarios & Troubleshooting	Lee Juyoung
0945 – 1030	Lung Recruitment Strategies: High-Frequency Oscillatory Ventilation & Other Useful Modes	Peter Reynolds
1030 – 1100	Lung Recruitment Strategies: High-Frequency Jet Ventilation	Eric Ang
1100 – 1130	The Devil in Disguise: Airway Pressure Release Ventilation	Wong Chee Sing
1130 – 1200	BRUNCH	
1200 – 1230	**Troubleshoot! Use of Pulmonary Graphics in Different Scenarios** - Lung hysteresis - Scalar waves - Volume, Pressure, Flow - Loops	Peter Reynolds
1230 – 1315	Groups Hands-On Session **Applications of Pulmonary Graphics** **GROUPS** **Scenarios** (1) Raining? Leaking? (2) The I:E Ratio Conundrum (3) Overventilation & Beaking (4) Obstruction – Mixed, Extrathoracic, Intrathoracic (5) Patient-Ventilator Dyssynchrony	All Facilitators (1) Cheong Shu Meng (2) Eric Ang (3) Matthew Chong (4) Wong Chee Sing (5) Lee Juyoung/ Azanna
1315 – 1400	**Hands-On Session: GROUPS** **Advanced Ventilation Modes** **Scenarios** (1) High Frequency Oscillatory Ventilation – With & Without VG (2) High-Frequency Jet Ventilation (3) Airway Pressure Release Ventilation (APRV) (4) Combined Oscillatory Mandatory Ventilation (5) Neurally Adjust Ventilatory Assist (NAVA)	All Facilitators (1) Peter Reynolds (2) Eric Ang (3) Wong Chee Sing (4) Matthew Chong (5) Lee Juyoung
1400 – 1415	**WRAP-UP, Q & A, GOODBYE**	

Congress
Scientific Programme

Time/ Date						Friday 26th AUGUST 2022			Saturday 27th AUGUST 2022			Sunday 28th AUGUST 2022		
USA Pacific (UTC – 8)	USA East (UTC -5)	UK (UTC +0)	IND (UTC +5:30)	AUS EST (UTC +6)	MAL (UTC +8)	HALL A			HALL A			HALL A		
1700 – 1800 (-1 day) Start 25.8.22	2000 – 2100 (-1 day) Start 25.8.22	0100 - 0200	0530 – 0630	1000 – 1100	0800 - 0900	P1: FAOPS PLENARY LECTURE *CHAIR: TP Baskaran* Reducing Maternal Mortality Across Asia – Challenges & Efforts *Liona Poon* *Hong Kong SAR, China*			P2: DATO' DR LIM NYOK LING PSM MEMORIAL FORUM *CHAIR: Irene Cheah* The Littlest Angels – Establishment of Neonatal Organ & Tissue Donation Services *Elena Cavazzoni* *Australia* *Sheng-Wen S. Shaw* *Taipei* Malaysia Perspectives *Hasdy Haron* *Malaysian National Transplant Resource Centre*			P3: FAOPS PLENARY LECTURE *CHAIR: Azanna Ahmad Kamar* Innovations in Saving Babies – From the Past to The New World *Ranjan Kumar Pejaver* *India*		
USA Pacific (UTC – 8	USA East (UTC - 5)	UK (UTC +0)	IND (UTC +5:30)	AUS EST (UTC +6)	MAL (UTC +8)	HALL A			HALL A	HALL B	HALL C	HALL A	HALL B	HALL C
1800 - 2000	2100 - 2300	0200 - 0400	0630 - 0830	1100 – 1300	0900 - 1100	FAOPS 2022 VIRTUAL OPENING CEREMONY *Graced by* YTM Raja Dato Seri Eleena Bt Almarhum Sultan Azlan Muhibuddin Shah Al-Maghfur-lah *Patron of the Perinatal Society of Malaysia* *Words from the Organising Chair* Dr. TP Baskaran *Welcoming Speech: PSM President* Dr. Irene Cheah *Welcoming Speech: FAOPS President* Professor Dr. Satoshi Kusuda *Words from the* Patron of the Perinatal Society of Malaysia *Officiated by* YB Dato' Dr. Haji Noor Azmi Bin Ghazali *Deputy Minister of Health I, Ministry of Health Malaysia* Video Presentation Saving Mothers & Babies in Asia-Oceania			S8: The Final Lifeline *CHAIR: Azanna Ahmad Kamar*	S9: Quality Networking *CHAIR: Zaleha Mahdy*	S10: Saving Babies - Diagnosis & Prevention *CHAIR: Cheah Fook Choe*	S17: Ethical Decisions in Perinatal Mortality *CHAIR: Neoh Siew Hong*	S18: New World Perinatal Science & Innovations *CHAIR: Hamizah Ismail*	S19: Therapeutic Drifts in Perinatology *CHAIR: Cheong Shu Meng*
1800 - 1825	2100 – 2125	0200 – 0225	0630 – 0655	1100 – 1125	0900 – 0925				Babies with Hypoxaemic Respiratory Failure *Satyan Lakshminrusimha* *USA*	Asian Neonatal Collaborative Network *Tetsuya Isayama* *Japan*	Pitfalls in Functional Lung Ultrasound *Patricia Woods* *Australia*	Tinier and Tinier – Moving Targets for Definition of Viability *Brian Carter* *USA*	EXIT Procedures – An Update *Foong Yen Lim* *USA*	Antenatal Steroids – Too Much, Too Little, or Just Nice? *Alan Jobe* *USA*
1825 - 1850	2125 – 2150	0225 - 0250	0655 - 0720	1125 – 1150	0925 - 0950				Severe Congenital Diaphragmatic Hernia: Changing the Outcomes *Foong Yen Lim* *USA*	Impact of COVID-19 on Perinatal Health in FAOPS Region *Mohammad Shahidullah* *Bangladesh*	Surfactant Delivery – Minimal, Less, and Least Invasive *Anup Katheria* *USA*	Lethal No More – Saving Babies with Multiple Anomalies *John Lantos* *USA*	In-Utero Myelomeningocoele Repair *Tuangsit Wataganara* *Thailand*	Tiny yet Mighty – Care of Extremely Preterm Infants *Satoshi Kusuda* *Japan*
1850 - 1915	2150 – 2215	0250 - 0315	0720 - 0745	1150 – 1215	0950 – 1015				Massive Pulmonary Haemorrhage *Byung Min Choi* *South Korea*	Global CoLab Collaborative *James Michael Roberts* *USA*	Preventing Brain Damage from Hypoglycaemia *Victor Samuel Rajadurai* *Singapore*	Losing to Save – Termination of Pregnancy *Zaleha Mahdy* *Malaysia*	Targeting the Inflamed Lung & Sepsis – Use of Human Amnion Epithelial Cells *Atul Malhotra* *Australia*	Tiniest Babies' Amazing Race -The Artificial Placenta *Takushi Hanita* *Japan*
1915 - 1940	2215 – 2240	0315 - 0340	0745 - 0810	1215 – 1240	1015 – 1040	S1: Virtual Poster Presentation 1015 – 1100 *CHAIR: DR. TP Baskaran* Virtual Poster Rounds & Poster Judging Session for Shortlisted Posters Industrial Booth Virtual Visit			Neonatal Hypovolaemic Shock: Surviving the plunge *Koert de Waal* *Australia*	Q & A	Q & A	Justice in Providing Maternal Somatic Support *Azanna Ahmad Kamar* *Malaysia*	Fetoscopic Laser Ablation for Monochorionic Twins *Suresh Seshadri* *India*	Therapeutic Drifts in Hypoxic Ischaemic Encephalopathy *Alistair Gunn* *New Zealand*
1940 – 2000	2240 – 2300	0340 – 0400	0810 – 0830	1240 – 1300	1040 – 1100				Q & A			Q & A	Q & A	Q & A
2000 – 2015	2300 – 2315	0400 – 0415	0830 - 0845	1300 – 1315	1100 – 1115	VIRTUAL BREAK ..... NASI LEMAK TIME!								
USA Pacific (UTC – 8)	USA East (UTC - 5)	UK (UTC +0)	IND (UTC +5:30)	AUS EST (UTC +6)	MAL (UTC +8)	HALL A	HALL B	HALL C	HALL A	HALL B	HALL C	HALL A	HALL B	
2015 – 2215	2315 - 0115	0415 - 0615	0845 – 1045	1315 - 1515	1115 – 1315	S2: Saving Mothers – Morbidities during Pregnancy *CHAIR: Bavanandam Naidu*	S3: Mental Health *CHAIR: Irene Cheah*	S4: Perinatology 101: Resuscitation & Transport *CHAIR: Winston Yong*	S11: Improving Outcomes for the New World *CHAIR: Diasdado Mariano*	S12: Stay Safe! *CHAIR: Alice Ho Man Mooi*	S13: Training in Perinatology *CHAIR: Khatijah Lim Abdullah*	S20: Saving 2 Lives -Rescue Strategies *CHAIR: Hamizah Ismail*	S21: Benefits of Early Detection *CHAIR: Matthew Chong*	
2015 – 2040	2315 - 2340	0415 – 0440	0845 – 0910	1315 – 1340	1115 – 1140	Renal Failure in Pregnancy *Wan Ahmad Hafiz* *Malaysia*	Post-Partum Depression *Sylvia Lim Gibson* *Australia*	Neonatal Resuscitation: What's New? *Anup Katheria* *USA*	Towards Zero NEC – Risk Awareness Tools *Sheila M Gephart* *USA*	Leadership Role in Attaining Zero Harm *Pang Nguk Lan* *Singapore*	Simulation Training in Perinatal Emergencies: The ICOE Experience *Muniswaran Ganesham* *Malaysia*	Treatment of Post-Partum Bleeding in Japan *Jun Takeda* *Japan*	Hypothyroidism in Preterm & Ill Babies *Wu Loo Ling* *Malaysia*	
2040 – 2105	2340 – 0005	0440 – 0505	0910 – 0935	1340 – 1405	1140 – 1205	Breast Cancer – Dilemmas of Each Trimester *Nur Aishah Mohd Taib* *Malaysia*	Lasting Generations: Substance Abuse in Mothers *Ju Lee Oei* *Australia*	Neonatal Transport & Retrieval in Japan *Eiji Hirakawa* *Japan*	Monitoring with Perinatal Telehealth *Zaleha Mahdy* *Malaysia*	Culture Eats Strategy – Building Robust Systems *Alvin SM Chang* *Singapore*	Simulation Training in Neonatology with Minimal Resource – Helping Babies Breathe *Im Sethikar* *Cambodia*	Controversies in the Management of Cervical Insufficiency *Ben Mol* *Australia*	Expanding the Scope of Non-Invasive Prenatal Testing (NIPT) *Shaw Sheng Wen* *Taipei*	
2105 – 2130	0005 – 0030	0505 – 0530	0935 – 1000	1405 – 1430	1205 – 1230	Low Platelets, at Due Date! The Options *Gan Gin Gin* *Malaysia*	Providing parental support for parents of babies in NICU *Melinda Cruz* *Australia*	Rescuing Neonates in Low- & Middle-Income Countries *Setyadewi Lusyati* *Indonesia*	Role of Maternal Nutrition -The DOHaD Hypothesis *Hamizah Ismail* *Malaysia*	Our People – Resilience in Academic Medicine *Tan Hak Khoon* *Singapore*	Teaching Midwifery – From Obstetric Simulation to Real World Practice *Lesley Kuliukas* *Australia*	Triaging in the Management of Pre-Eclampsia *Milind R Shah* *India*	Screening for Inborn Errors of Metabolism - A Cost-Effective Method *Carmencita D Padilla* *Philippines*	
2130 – 2155	0030 – 0055	0530 - 0555	1000 – 1025	1430 – 1455	1230– 1255	Risk Assessment of Unbooked Mothers in Labour *Laila Banu* *Bangladesh*	Moral Distress in Health Care Workers *Sheila Gopal Krishnan* *Malaysia*	Resuscitation of Newborns at Risk of COVID-19 *See Kwee Ching* *Malaysia*	Preventing Prematurity & Stillbirths *David Ellwood* *Australia*	Large Scale Initiatives to Reduce Harm *Alvin SM Chang* *Singapore*	Examination of the Placenta – Training the Trainees *Tan Geok Chin* *Malaysia*	Q & A	Pitfalls with Fetal Cardiac Scans – Universal vs Target Groups *Rima Bader* *Saudi Arabia*	
2155 - 2215	0055 – 0115	0555 – 0615	1025 – 1045	1455 – 1515	1255 – 1315	Q & A	Q & A	Q & A	Q & A	Q & A	Q & A		Q & A	
2215 – 2320	0115 – 0220	0615 – 0720	1045 – 1150	1515 – 1620	1315 – 1420	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	INDUSTRY SYMPOSIUM	

Congress
Scientific Program

Time/ Date						Friday 26th AUGUST 2022			Saturday 27th AUGUST 2022			Sunday 28th AUGUST 2022		
USA Pacific (UTC – 8)	USA East (UTC - 5)	UK (UTC +0)	IND (UTC +5:30)	AUS EST (UTC +6)	MAL (UTC +8)	HALL A	HALL B	HALL C	HALL A	HALL B	HALL C	HALL A	HALL B	HALL C
2320 – 0055	0220 – 0355	0720 – 0855	1150 – 1325	1620 – 1755	1420 – 1555	S5: New World Perinatal Science & Innovations CHAIR: Boo Nem Yun	S6: Innovative Monitoring CHAIR: Wong Chee Sing	S7: STAT! Perinatal Emergencies CHAIR: Mamoru Tanaka	S14: Saving Babies - Rescue Strategies CHAIR: Azanna Ahmad Kamar	S15: Preventing Birth Injuries CHAIR: Buvanes Chelliah	S16: Perinatal Mortality CHAIR: TP Baskaran	CLOSING CEREMONY & AGM		
2320 – 2345	0220 – 0245	0720 – 0745	1150 – 1215	1620 – 1645	1420 – 1445	Amniotic fluid derived mesenchymal stem cell – Perinatal Treatment *Daigo Ochiai* *Japan*	Brain Function Monitoring in Asphyxiated Infants *Alistair Gunn* *New Zealand*	Dopplers & Monitoring Methods for Fetal Growth Restriction – When to Intervene *Nitin Chaubal* *India*	Can't Intubate, Can't Ventilate – What Next? *Hugh Simon Lam* *Hong Kong SAR*	Assisted Vaginal Birth for the 21st Century *Tim Draycott* *United Kingdom*	The Fetal Autopsy – Why, When & How *Lata Srinivasan* *India*	1400 – 1415 PM PRESENTATION OF FAOPS 2022 AWARDS & CLOSING CEREMONY		
2345 – 0010	0245 – 0310	0745 – 0810	1215 – 1240	1645 – 1710	1445 – 1510	Stem Cells for BPD *Chang Yun Sil* *South Korea*	Managing PPHN with Continuous Haemodynamic Monitoring *Willem de Boode* *Netherlands*	The Distressed Fetus! Timeliness of Intervention *Bavanandam N* *Malaysia*	HFOV with Volume Guarantee – The Evidence *Manuel Sanchez Luna* *Spain*	Preventing Shoulder Dystocia *Vallikannu Narayanan* *Malaysia*	Progress in Stillbirth Prevention: International Perspectives *Jason Gardosi* *United Kingdom*			
0010 – 0035	0310 – 0335	0810 – 0835	1240 – 1305	1710 – 1735	1510 – 1535	Stem Cells! Stem Cells? *Boris Kramer* *Netherlands*	Cardiac Output Monitoring in Newborn Infants *Willem De Boode* *Netherlands*	Dilemmas of Perimortem Caesarean Sections *TP Baskaran* *Malaysia*	Clinical Practice of Neurally Adjusted Ventilatory Assist (NAVA) in the NICU *Han Suk Kim* *South Korea*	Medicolegal Perspectives of Birth Injuries *G Murali* *Malaysia*	Medicolegal concerns for investigation after death *Marta Cohen* *United Kingdom*	1415 – 1530 pm ANNUAL GENERAL MEETING OF THE PERINATAL SOCIETY OF MALAYSIA		
0035 – 0055	0335 – 0355	0835 – 0855	1305 - 1325	1735 – 1755	1535 – 1555	Q & A	Q & A	Q & A	Q & A	Q & A	Q & A			
0055 – 0110	0355 – 0410	0855 – 0910	1325 - 1340	1755 – 1810	1555 – 1610	VIRTUAL BREAK ..... TEH TARIK TIME!								
USA Pacific (UTC – 8)	USA East UTC -5)	UK (UTC +0)	IND (UTC +5:30)	AUS EST (UTC +6)	MAL (UTC +8)	HALL A		HALL B	HALL A					
0110 - 0255	0410 – 0555	0910 – 1055	1340 - 1525	1800 – 1955	1610 – 1755	Shortlisted Abstracts Oral Presentation			PERINATAL COVID-19					
0110 – 0130	0410 – 0430	0910 – 0930	1340 – 1400	1810 – 1830	1610 – 1630				Recommendations from World Association of Perinatal Medicine (WAPM) - Clinical management of COVID-19 in pregnancy CHAIR: Satoshi Kusuda *Cecilia Villalain* *WAPM Board Member* *Spain*					
0130 – 0235	0430 – 0535	0930 – 1035	1400 – 1505	1830 – 1935	1630 – 1735	Neonatology CHAIR: Chye Joon Kin		Obstetrics, Midwifery, Nursing & Allied Health CHAIR: Hamizah Ismail	1615 – 1730 CHAIR: See Kwee Ching Collaboration in Mitigating the COVID-19 Crisis - Perspectives from Federation of Asia-Oceania Perinatal (FAOPS) Countries *India: Getting Together - Emergence of the Delta Wave* *Ranjan Penjaver* *Philippines: Business as Usual? – Breastfeeding & Skin-to-Skin* *Sookee Mendoza* *Indonesia: Saving Lives- Management Dilemmas with Limited Resources* *Seno Adjie* *Malaysia: At the Peak of COVID Crisis in Pregnant Women – Can it be Worse?* *J Ravichandran*			END of FAOPS 2022		
0235 - 0255	0535 - 0555	1035 – 1055	1505 - 1525	1935 – 1955	1735 – 1755				1735 – 1755: TIME TO DISCUSS COVID-19 & Pandemics in Perinatology – Unanswered Questions for FAOPS Countries					
0255 - 0305	0555 – 0605	1055 – 1105	1525 – 1535	1955 – 2005	1755 – 1805	VIRTUAL KOPITIAM BREAK								
0305 - 0500	0605 - 0800	1105 - 1300	1535 - 1730	2005 - 2200	1805 – 2000	DAY 1 ENDS			1805 – 2000 FEDERATION OF ASIA OCEANIA PERINATAL SOCIETIES (FAOPS) GENERAL ASSEMBLY *Chair: Satoshi Kusuda* *President of FAOPS*					

PLENARY 1

FEDERATION OF THE ASIA AND OCEANIA PERINATAL SOCIETIES (FAOPS) LECTURE

26th August 2022, Friday
Chairperson: TP Baskaran

P1: Reducing Maternal Mortality Across Asia – Challenges and Efforts
Liona Poon

P1: Reducing Maternal Mortality Across Asia – Challenges and Efforts

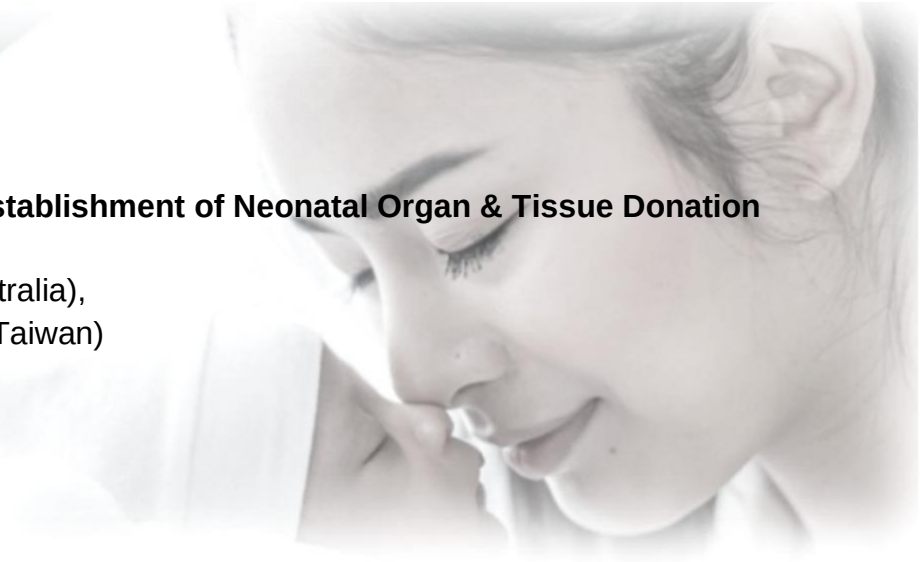
Liona Poon

Hypertensive disorders of pregnancy (HDP), including preeclampsia, are the most common causes of maternal and perinatal morbidity and mortality. They are responsible for 16% of maternal deaths in high-income countries and approximately 25% in low-middle-income countries. The impact of HDP can be lifelong as it is a recognised risk factor for future cardiovascular disease (CVD). During pregnancy, the cardiovascular (CV) system undergoes significant adaptive changes that ensure adequate uteroplacental blood flow and exchange of oxygen and nutrients in order to nurture and accommodate the developing fetus. Failure to achieve the normal CV adaptation is associated with the development of HDP. The haemodynamic alterations in women with a history of HDP can persist for years and predispose the woman to long-term CV morbidity and mortality. Therefore, pregnancy and the postpartum period are an opportunity to identify women with underlying, often unrecognised, CV risk factors. It is important to provide effective prediction and prevention of preeclampsia and develop strategies with lifestyle and therapeutic interventions to reduce the risk of future CVD in those who have had a history of HDP.

PLENARY 2

DATO' DR. LIM NYOK LING PSM MEMORIAL FORUM

27th August 2022, Saturday
Chairperson: Irene Cheah



P2: The Littlest Angels – Establishment of Neonatal Organ & Tissue Donation Services

Elena Cavazzoni (Australia),
Sheng-Wen S.Shaw (Taiwan)

Malaysia Perspectives

Hasdy Haron (Malaysia)

P2: The Littlest Angels – Establishment of Neonatal Organ & Tissue Donation Services

Elena Cavazzoni

Organ donation does not meet the needs of transplant recipients, with high waiting list mortality in children and neonates. In 2009 Australia's National Reform Program implemented world-leading practices to increase the number of deceased organ donors. As a result, deceased organ donation increased by 122% and donation awareness increased for families in NICUs. Literature on the ethics of neonatal organ donation states that donation is ethical, and clinicians must design protocols and policies to support neonatal families. Furthermore, British, Canadian, American and Australian professional body statements outline how brain death can be determined in neonates. To support families that value the opportunity to donate, a multidisciplinary approach is required to ensure robust neonatal donation programs are created.

PLENARY 3

FEDERATION OF THE ASIA AND OCEANIA PERINATAL SOCIETIES (FAOPS) PLENARY LECTURE

26th August 2022, Friday
Chairperson: Azanna Ahmad Kamar

P3: Innovations in Saving Babies - From the Past to the New World

Ranjan Kumar Pejaver (India)

P3: Innovations in Saving Babies - From the Past to the New World

Ranjan Kumar Pejaver

There is a tendency to think that the basis for current practice must have been established many years ago. Modern Neonatology has evolved over just 60 years. Instances prove that there are many a times confusions over the exact person to be credited and also that ideas to materialize into useful clinical applications takes time. Some wrong practices have thrived for some time before it could be established as harmful.

It was post world war II, incubators in plastic were introduced by Tarnier&Burdin in Paris, in which babies could be observed/monitored. This is the same time that portable X-rays came into use in the newborn nurseries. In the fifties, significant innovations included, introduction of Apgar scores, phototherapy and the establishment of the role of surfactant in hyaline membrane disease. The term neonatology was coined in 1960 and is attributed to Alexander Schaffer. As the end of the baby boom (1946-1964) approached, neonatology took its place as a major division of pediatrics. At pediatric meetings, newborn research was presented. In the 1060s and 70s, there were innumerable innovations involving the devices, therapeutic protocols, training methods, and new pharmacological agents being introduced. The noted ones were assisted ventilation, transcutaneous measurement of oxygen, carbon dioxide and antenatal steroids to prevent RDS.1975: First certifying exam in neonatal- perinatal medicine by the ABP. In the 80s,highlights were exogenous surfactants to treat RDS by Fujiwara et al, Introduction of high frequency ventilation, emergence of pulse oximetry. The 90s saw more refinement such as use of dopamine, dobutamine, room air resuscitation, PCR testing etc. Caffiene replaced aminophylline for apnoea of prematurity.

In the new Millenium, the concept of non-invasive ventilation was the most prominent development followed by less invasive methods of surfactant administration, tandem mass spectrometry, online teaching, training and simulations. Use of artificial intelligence, big data are the key players. The innovations are ongoing. But, considering that low and middle income countries have infrastructural deficiencies, lack of health insurance, and affordability to utilize private medical treatment, the innovations should be cost effective. Only then it can reach the needy. Low cost interventions and cost effective innovations are key to reaching neonatal health care to the masses. Nurse empowerment, regionalization of neonatal care, high class neonatal transport and Perinatal care under one roof are important aspects that need attention and action. Innovative mindset should be inculcated at the stage of basic training. Encouraging simple ideas and nurturing startups is essential. In 1955, with a birth weight of about 1kg, survival was 5% and mortality was 95%. In 2022, with a birth weight of about 1kg, survival is >95% and mortality <5%. Intact survival is the aim and quality of care has to be emphasized.

PERINATAL COVID-19 FORUM

Recommendations from World Association of Perinatal Society (WAPM)

27th August 2022, Saturday
Chairperson: Satoshi Kusuda

Clinical Management of COVID-19 in Pregnancy
Cecilia Villalain (WAPM Board Member, Spain)

Collaboration in Mitigating the COVID-19 Crisis
Perspectives from Federation of Asia- Oceania Perinatal (FAOPS) Countries
Chairperson: See Kwee Ching

- **India : Getting Together - Emergence of the Delta Wave**
  Ranjan Kumar Pejaver (India)
- **Philippines : Business as Usual? - Breastfeeding & Ski-to-Skin**
  Socorro De Leon-Mendoza
- **Indonesia : Saving Lives - Management Dilemmas with Limited Resources**
  Seno Adjie
- **Malaysia: At the Peak of COVID Crisis in Pregnant Women - Can it be Worse?**
  J. Ravichandran

Time To Discuss

COVID-19 in Perinatology – Unanswered Questions for FAOPS Countries

Perinatal COVID-19 Forum:

Recommendations from World Association of Perinatal Medicine (WAPM) – Clinical Management of Covid-19 in Pregnancy

Cecilia Villalain

The SARS-CoV-2 pandemic is responsible for infecting over 207 million with more than 4 million deaths. It has changed the way we live, we work and we practice medicine. Recommendations about treatment arose from small cohorts and further developed with evidence-based medicine in a world where sharing data and working together is a real possibility.

Pregnant women, disappointingly but expected, have been excluded from most trials, making uncertainty a bigger issue with our patients. The World Association of Perinatal Medicine (WAPM) was one of the first entities to develop management protocols tailored for pregnant women and their newborns.

An updated WAPM COVID - 19 in pregnancy guideline will be presented including recommendations about prevention, treatment and changes in clinical practice. The role and efficacy of vaccines, thromboprophylaxis, steroids, novel therapies and screening policies at the labour ward according to the latest scientific evidence will be discussed.

Collaboration in Mitigating the COVID-19 Crisis
Perspectives from Federation of Asia- Oceania Perinatal (FAOPS) Countries

- **India : Getting Together - Emergence of the Delta Wave**
  Ranjan Kumar Pejaver (India)

FAOPS is dedicated to improving perinatal care in Asian and Oceanian regions by advancing the science and practice for women and newborns during the perinatal period. Currently having 21 member countries and 3 associate members. A good mixture of developed and low and middle income countries. We are now going through wave 4. Wave 3 was due to Omicron-3. Many are now vaccinated. Delta variant caused havoc from June 2021 onwards as Wave 2. Wave 1 had started from early 2020. India is a vast country with a population of 1.4 billion!!! 1,400,000,000. Annual birth rate of 27 million. Has nearly twenty official languages. So, imagine Covid 19 striking suddenly. Bolt out of the blue. Total number of cases up until 1st August 2022 is 44,050,009 (3.14%). Total number of deaths 526,430(1.19%). Total number recovered was 43,383,787. FAOPS as an organization has a lot of scope for collaboration. With the heterogeneity we have, the experiences are huge and quite varied. Hence the learning will be interesting and near complete. With developed and developed countries in one group, indigenous and low cost innovation factors also come into play. We need to create a group, provide an opportunity and platform for doing this. Earlier the better. A database has to be created. Develop this. A simple template has to be prepared. Easy to fill and at an interval which is practically possible. Many countries have databases and their help should be sought.

Analysis is equally if not more important to extract information and learning should be Discussed and published. As time progresses it can be made more efficient by expanding the input fields. Guidelines should be shared, India was one of the first countries to produce the guidelines. Version 1 came out in June 2020. It was judged the best by Acta Pediatrica amongst the guidelines of 16 other countries. Followed by version 2 and version 2.1. We had encouraged rooming in of Covid mother and baby, persisted with breast feeding and kangaroo mother care. This paid dividends for us. Corona (Covid 19) website should be constructed. Sharing of information is important. Interesting cases, recent developments could be shared. Could have a question and answers column for members to clarify doubts regarding Perinatal Covid, vaccinations etc. from the regional experts. Multicentre research trials are a very feasible and doable activity. Covid does not like to leave us!? It changes its costume and visits us again and again. (variants) The people who have suffered from Covid are having many physical and psychological ailments as sequelae. They need proper follow up and specialist driven management. Sharing of experience and expertise is essential. Collaboration makes it easier and effective.

A task force is needed with representation from all countries of FAOPS and also some experts from other regions. This task force can also be utilized for future crisis, and pandemics.

FAOPS office bearers should think in this angle and act accordingly. As a representative of India I on behalf of colleagues too, wish to say that India will be keen to participate in this activity. It is observed that the incidence of low birth weight babies, preterm babies, congenital abnormalities have increased? Maternal anxiety after having conceived and or delivered during Covid pandemic is significant. Are the mothers who have had Covid, during their pregnancies, now having any type of Long Covid symptoms. Are there any ongoing long term follow up studies In the FAOPS region? If not, is it worth initiating? Covid 19 pandemic has affected our Perinatal mother and child health care services significantly. Antenatal visits suffered, Transfer of patients to higher centres was hindered. Breastfeeding and kangaroo mother care in some centres was neglected. Immunization backlog was huge, being sorted out now. Nutrition of young babies and mothers suffered. Economy of nations & individual families was upset. Loss of jobs, price rise and in some cases relocation has affected the family as a unit. There is a lot to sort out, the burden is huge. Collaboration is the way forward. Let's do it together.

Perinatal COVID-19 Forum:
Business As Usual? Breastfeeding and Skin to Skin
Socorro De Leon-Mendoza

The Philippines has long been at the forefront of breastfeeding in Asia since the 1980's. The hallmark of this commitment was established through the Philippine Milk Code (Executive Order 51). Subsequent Republic Acts/Laws/Guidelines helped sustain the practice even during the pandemic years of 2020 to the present. Although no one is penalized for non-compliance to these laws, those who adhere to these laws are incentivized through the national PhilHealth Insurance system, in which the majority of the population, professionals and hospitals are accredited. EINC and KMC in the Philippines are two major programs that support breastfeeding.

COVID-19 cases in the country has slowly risen in July but remains low compared to the surge in February of this year (https://doh.gov.ph/covid19tracker) Perinatal COVID-19 however is not separately tracked in the national system and there are very few publications on this matter. According to a publication, selected hospital statistics, surveys and a registry of neonatal COVID, the positivity rate among neonates exposed to maternal COVID-19 is very low ($\leq$ 1%) and the majority of the neonates remained clinically well. While breastfeeding may be delayed initially in some centers due to documentary requirements, all were eventually breastfed. At the Dr. Jose Fabella Memorial Hospital (DJFMH), it was "business as usual" because all maternal/neonatal COVID-19 cases were delivered and cared for in a separate building. In the neonatal COVID-19 registry (Philippine Society of Newborn Medicine), majority (>80%) of the 267 reported cases received EINC, were roomed-in and breastfed, a rate higher than the pre-pandemic rate (69%) in the general population. In a survey conducted among 68 level III neonatal units, the initial drop in these practices including KMC, observed in 2020, has resumed to almost pre-pandemic levels in 2021. Similarly, in a study looking at the prevalence of exclusive breastfeeding among mothers 6-12 months post-discharge from the hospital, the breastfeeding rate was 64% (n=227), a much higher rate than the national rate of 29% pre-pandemic.

While it was "business as usual" at DJFMH (National Maternity Hospital), it was a challenge in other hospitals initially, but all have shown a steady resumption of these protocols as shown in the surveys.

SYMPOSIUM 2

Morbidities During Pregnancy

26th August 2022, Friday

Chairperson: Bavanandam Naidu

S2A: Renal Failure in Pregnancy
Wan Ahmad Hafiz Wan Md Adnan

S2B: Breast Cancer – Dilemmas of Each Trimester
Nur Aishah Mohd Taib

S2C: Low Platelets, at Due Date. The Options.
Gan Gin Gin

S2D: Risk Assessment of Unbooked Mothers in Labour
Laila Banu

S2A: Renal Failure in Pregnancy

Wan Ahmad Hafiz Wan Md Adnan

We are following the journey of Ms Aishah, a young lady who has been diagnosed with lupus nephritis. She is interested in becoming pregnant and wishes to know about the risk should she be having a baby. She is on multiple medications, some of which may not be suitable for pregnancy. In particular, we will be discussing the impact of kidney function, proteinuria and blood pressure onto her pregnancy.

We then followed her journey throughout pregnancy, and the general management targeted to control her blood pressure and reduce her risk of complications. Differentiating between preeclampsia and flare of renal disease can be difficult without the current understanding of pathophysiology. Decision to deliver is based on multiple factors and may not be straightforward.

There are issues concerning post-partum period for patients with kidney disease such as the persistent risk of kidney failure, choice of medication that is safe for breastfeeding, timing of kidney biopsy and clinic follow-up, which often is neglected by patients.

S2B: Breast Cancer – Dilemmas of Each Trimester

Nur Aishah Mohd Taib

Gestational breast cancer occurs during pregnancy, the first postpartum year, or lactational period. Patients often present with more advanced diseases, as breast cancer is unexpected in the childbearing years and difficulty detecting lumps in pregnant breasts. The management of breast cancer is dependent on the *stage of the disease* and the *gestation of the pregnancy*. In the first trimester, surgery can be performed, and chemotherapy can be instituted within 6 to 12 weeks later during the second trimester. Thus, termination of pregnancy (TOP) is rarely required. They are non-therapeutic and do not affect the prognosis of the patient's incurable breast cancer. However, TOP can be considered if the prognosis is poor or if there are other social issues on her ability to care for her child.

The dilemma occurs in stage 4 cancers, as in every trimester, the primary objective is always to save the mother. In the first trimester, options for TOP must be discussed if there could be a delay in instituting life-saving systemic therapy in high volume life-threatening metastatic disease. Especially when the patient is not fit for systemic treatment, best supportive care to palliate and support the patient as long as possible to reach pulmonary maturity of the fetus. Staging the disease during pregnancy is usually done with a chest x-ray with abdominal shielding and an ultrasound to assess for liver metastases. Non-contrast MRI of the spine may be used to evaluate bone metastases. The diagnosis of cancer is fraught with not just physical impacts but psychosocial ones, the patient must contend with not just the threat of losing her life but her unborn child. Therefore, it would be mandatory for teams managing these patients to provide psychosocial support and notwithstanding to assign patients to social workers or counsellors to help them and their family to make medical decisions that need to be made in a timely manner. Either breast conserving or mastectomy can be reasonable options for patients depending on suitability and preference of the patients.

As mentioned, systemic therapy can be used in the second and third trimesters. The systemic therapy used is chemotherapy, targeted Her2 therapies like trastuzumab and hormonal treatments are contraindicated. The delivery is an electively planned event, the last systemic therapy must be stopped 3 to 4 weeks before delivery to reduce complications related to neutropenia and thrombocytopenia. In utero exposure to systemic therapy has been documented in small case series, showing low complication rates, with IUGR being the most common. Gestational breast cancer patients are often delivered more preterm. Long term outcomes of babies in utero during cancer treatments show that there is no increase in malignancy or long-term problems when compared to non-breast cancer gestational age-matched controls. Gestational breast cancer compared to non-breast cancer pregnant individuals are associated with a higher risk of death, a large meta-analysis found this is limited to those diagnosed in the post-delivery period. In another study, this was found to be both diagnosed during pregnancy or the post-partum period. The talk will further discuss the dilemmas in the three trimesters.

S2C: Low Platelets, at Due Date. The Options.

Gan Gin Gin

Managing thrombocytopenia in pregnancy can be challenging. About 5-10% of pregnant women have documented thrombocytopenia, which is usually defined as platelet counts of < $150x10^9$/L. Most common cause of thrombocytopenia during the third trimester is gestational thrombocytopenia, which usually do not require any treatment and will resolve spontaneously after delivery. Other causes include pre-eclampsia, HELLP syndrome and haematological disorders such as immune thrombocytopenia purpura (ITP) and thrombotic thrombocytopenia purpura (TTP), which is rare but can be life-threatening.

In this talk, I will be focusing on ITP and TTP. For ITP, the goal is to reduce the risk of bleeding for both mothers and babies, while minimizing adverse effects from therapy. Treatment options usually depend on the platelet counts. The first line of treatment is usually corticosteroids, with prednisolone being the preferred choice. Intravenous immunoglobulin is also commonly used in patients who are steroid refractory or resistant. Increasingly, there are other therapeutic options such as rituximab, the new TPO agonist such as eltrombopag , which have shown to not cause major adverse effects in pregnancies.

Acquired TTP is not common and can occur during 1st pregnancy and postpartum. This is likely due to the fall in ADAMTS13 level and rise of von Willebrand factor. It is crucial to have a high index of suspicion especially when patients present with haemolytic anaemia and thrombocytopenia. Relevant investigations such as measurement of ADAMTS 13 levels are important to differentiate from other causes. Treatment of choice for TTP is to commence plasmapheresis as soon as possible.

S2D: Risk Assessment of Unbooked Mothers in Labour

Laila Banu

Unbooked mothers are those who have no antenatal care who delivered within 3 days of initial booking visit. Booked mothers are those who had regular antenatal check-up according to WHO criteria or regional criteria (2-8 visits). There are many studies or researches-the results are more or less same-in only one study done in Harare (Zimbabwe)-they showed that fetomaternal complications are more in booked patients because those patients are already with some obstetric complications-so the pregnancy outcome is more worse than unbooked patients.

In most of the studies it has shown that in case of unbooked patients-the obstetric condition is unknown to labour staffs- and they ended up with emergency caesarean section, laparotomy due to rupture uterus, worse perinatal outcome and neonatal complications. To achieve the SDG-30-most of the countries implement various programs and projects to improve the maternal and neonatal health and to reduce the maternal and neonatal mortality rates. These programs are mainly Government programs in collaboration with NGO, development partners, professional bodies etc.

In many countries- organized antenatal care provided by different organizations exist-but especially in developing countries the number of unbooked mothers vary from 2% to 38%.They are a great burden for the labour room of the tertiary centres. Usually the unbooked mothers are young, healthy, need more emergency caesarean section, operative delivery, sometimes laparotomy for rupture uterus increasing the maternal and neonatal mortality and morbidity.

In conclusion, to reduce the maternal and neonatal mortality number of unbooked patient should be decreased by awareness, providing quality and organized antenatal check-up proper referral, sometimes by giving some incentives for antenatal care.

SYMPOSIUM 3

Mental Health

26th August 2022, Friday

Chairperson: Irene Cheah

S3A: Postpartum Depression
Sylvia Lim Gibson

S3B: Lasting Generations – Substance Abuse in Mothers
Ju Lee Oie

S3C: Providing Parental Support for Parents of Babies in NICU
Melinda Cruz

S3D: Moral Distress in Health Care Workers
Shiela Gopal Krishnan

S3A: Postpartum Depression

Sylvia Lim Gibson

There is increasing recognition of perinatal anxiety and depression as a significant and common complication of childbirth and as a distinct phenomenon beyond the commoner and usually self-resolving postnatal blues. Untreated perinatal depression persists and has wide ranging and long lasting adverse sequelae of the affected women, their partners as well as the emotional, cognitive and developmental outcomes of their children. It also leads, in severe cases, to suicide and infanticide. Estimates of costs of untreated perinatal depression are significant ranging from lost productivity, maternal health expenditure, child behavioural and health outcomes and child injury. Despite this, the condition is often under-recognised and under-treated. The early identification, diagnosis and effective treatment of perinatal depression vitally needs to be included in holistic maternal infant health care.

This paper reviews the current understanding of perinatal anxiety and depression, common presentations, risk and predisposing factors and treatment options. It also explores the role of cultural and societal factors in the prevalence and course of perinatal anxiety and depression, including the role of traditional birthing and parenting practices, migration and societal role changes.

Most cases of perinatal depression, if identified early, respond to treatment in the primary care setting without escalation to specialist psychiatric care and this presentation examines the role of maternity and paediatric services, general practitioners and primary health care in the treatment. Antenatal identification of risk and predisposing factors and possible early identification and prevention strategies explored.

S3B: Lasting Generations – Substance Abuse in Mothers

Ju Lee Oei

The propensity for addiction is increased within families. There is now knowledge that both resilience and vulnerability to drug dependency is modifiable, particularly by a process known as epigenetics. This is the study of how gene activity and expression can be modified without alterations to the genetic code itself. The term “epigenetics” was introduced by Conrad Waddington in the early 1940’s. Today, histone variants, posttranslational modifications of amino acids on the amino-terminal tail of histones, and covalent modifications of DNA bases, amongst other changes, have a crucial role in the silencing and expression of non-coding systems. In this presentation, I will discuss the concept of epigenetics in the hereditability and modification of vulnerability to addiction from parent to child and also across generations, as well as the promise of environmental modifications to break the intergenerational cycle of disadvantage that impact families affected by drug dependency.

S3C: Providing Parental Support for Parents of Babies in NICU

Melinda Cruz

Every year in Australia, 48,000 babies are born premature or sick and sadly, up to 1,000 of these babies will lose their fight for life. Babies who spend time within NICU can go on to face lifelong challenges including disabilities, developmental delays and behavioural challenges. It is crucial that parents have the right support as research proves that children of parents with poor emotional health are less likely to thrive.

For these families, the experience of having a baby come into the world not as expected or planned is life changing. It affects the entire family unit with parents at increased risk of post-natal depression, anxiety and PTSD (Post Traumatic Stress Disorder).

Initiated in 2005 by Melinda Cruz Turner, and with the help of Liverpool Hospitals Newborn Intensive Care Unit (NICU), Miracle Babies Foundation was formed by a group of mothers of premature and sick newborns. All bonded together by their NICU experiences, they shared the same common desire of wanting to support other families of miracle babies and give back to the hospitals that care for them.

Together, Miracle Babies and Liverpool Hospital worked on an in-hospital parent support program, allowing current NICU families the opportunity to speak to past parents, and on expanding the already running, but resource limited premmie playgroup to reach even more NICU families.

As positive outcomes from these parent support programs became evident, Miracle Babies was invited to take part in several nursing conferences and training courses offering a parents perspective of the NICU experience. This introduced the programs to staff from other NICUs around the country who began inquiring about extending services to more families.

Through an independent study conducted by the Impact Institute in 2021, the benefits of peer support programs, just like the Miracle Babies Foundation Nurture Program are evident, further solidifying the need for programs like this within hospitals and within the community for vulnerable groups.

S3D: Moral Distress in Health Care Workers

Shiela Gopal Krishnan

The unprecedented stress, uncertainty and devastating global COVID-19 pandemic provide fertile ground for moral distress (MD) among our health workers in Malaysia. The repeated occurrence of MD leads to moral injury, moral residue, and risk, culminating in the phenomenon of burnout. Two major causes of MD are institutional constraints and competing obligations. A study titled "Moral Distress among Health Care Professionals in Malaysia during the Covid 19 Pandemic" was done to assess MD among health care professionals in Malaysia during the COVID -19 pandemic and to identify the causative factors leading to MD. The study was a multicentred cross-sectional study. Participants were physicians and nurses from ten Malaysian Ministry of Health hospitals working in medical wards, intensive care units, and paediatric units. Data collection took place from January to July 2021.

A self-administered online questionnaire was completed that included the Measure of Moral Distress for Healthcare Professionals (MMD-HP), demographic data, and methods used by participants to resolve MD. A total of 492 subjects were recruited, including 141 (28.7%) physicians and 351 (71.3%) nurses. The total score of MMD-HP was significantly higher in physicians than in nurses ($U = 17444.5$, $p = < 0.001$), with a median total score of MMD-HP of 121 (IQR 158.5) in physicians and 75 (IQR 101.0) in nurses. The main causes of MD were system-related for both physicians and nurses. Personal well-being or "self-care" were the most common solutions participants reported for dealing with moral distress during the pandemic COVID -19. Moral distress is a significant problem facing our healthcare professionals in the fight against the pandemic. Systemic causes such as inadequate human and material resources and lack of administrative support are the most important factors contributing to MD among health professionals in Malaysia.

SYMPOSIUM 4:

Perinatology 101: Resuscitation and Transport

26th August 2022, Friday

Chairperson: Winston Yong

S4A: Neonatal Resuscitation: What's new?
Anup Katheria

S4B: Neonatal Transport and Retrieval in Japan
Eiji Hirakawa

S4C: Rescuing Neonates in Low and Middle Income Countries
Setyadewi Lusyati

S4D: Resuscitation of Newborns at Risk of Covid-19
See Kwee Ching

S4A: Neonatal Resuscitation: What's new?

Anup Katheria

Neonatal resuscitation continues to evolve from simple measurements of heart rate to determine the need for ventilation to the use of pulse oximetry to guide the administration of oxygen. Currently several new studies have demonstrated additional technologies and monitors that can improve decision making in the delivery room and potentially reduce neonatal morbidity. This talk will review the most recently updated NRP guidelines and review new and ongoing research studies evaluating technologies in the delivery room.

S4B: Neonatal Transport and Retrieval in Japan

Eiji Hirakawa

In recent years, the medical system has been changing and medical care is becoming centralized. It has been reported that the centralization of medical care enables effective use of limited human and medical resources, and that a high-volume centre contributes to a better prognosis in surgical cases by enabling the medical staffs to maintain their surgical skills. For non-urgent cases, referral by private car is acceptable. However, for urgent cases, time to intervention is an issue. The area covered by a high-volume centre varies depending on the disease, but the more rural the area, the wider the coverage area. Therefore, ground transport may cause delays in therapeutic intervention.

When a patient is transported, the time until intervention includes (1) time until departure from the origin, (2) transport time, and (3) time until treatment begins at the destination, each of which is a bottleneck in reducing the time, and it is necessary to manage the patient's condition to prevent deterioration during transport (transport medicine). In addition, with the development of information and communication networks, it is now possible to intervene via real-time video (telemedicine). Therefore, transport medicine and telemedicine are also important in the era of medical centralization, and I will focus on air transport as transport medicine that has been established in our regional area “Kagoshima”.

Kagoshima Prefecture has 26 inhabited islands in a 9,187 km2 area with a population of 1.6 million, and 6,864 births occurred in obstetrics clinics in 2016. Perinatal care has been centralized at Kagoshima City Hospital, and we have introduced a neonatal ambulance since 2000, and a doctor's helicopter and perinatal-RRT(Rapid Response Team) since 2012. Since 2012, we have actively chosen air transportation for emergency transport from outside of Kagoshima City, and dispatch emergency physicians, obstetricians, and neonatologists as Perinatal-RRT by air ambulance when early intervention at the destination hospital is desirable.

The presentation will focus on “Safety, speed, and effectiveness of air transportation for neonates.”

S4C: Rescuing Neonates in Low and Middle Income Countries

Setyadewi Lusyati

The three major causes of death in neonates are prematurity, infection, and asphyxia for decades to date. These three causes mutually increase complications and synergized with the rate of neonatal mortality, which still contributes significantly to infant mortality. This situation is clearly seen in Low and Middle-Income countries, which do not always have the proper equipment, nor its availability and inadequate functionality for quality neonatal care. Cardiorespiratory manifestations dominate almost every emergency condition in neonates. Therefore, the resuscitation and stabilization of neonates play a major role in the success of saving neonates in critical conditions. Successful resuscitation and stabilization for neonates suggest some basic and essential equipment. Unfortunately, those required essential types of equipment are not always feasible and available, including blended oxygen, CPAP, and drugs such as surfactants and inotropic drugs.

In Indonesia, which is one of the countries in the LMIC category, resuscitation is carried out by developing the Helping Babies Breath (HBB) method. This method is mainly intended for places where health services are at the basic and limited level. Around 70-80% of deliveries in Indonesia are performed by midwives. The Helping Babies Breath (HBB) Program has been conducted in Indonesia since 2013, between collaboration with LDSI Charities (Salt Lake City,US) and Indonesia Perinatal Society. For 10 years, 308 trainings have been conducted for 3693 midwives throughout Indonesia. The pilot project in Bandung, West City was conducted to evaluate the success of this program in reducing neonatal mortality. There were 29% of deaths due to asphyxia at the beginning of the HBB in Bandung city in 2014 and 16% of deaths in 2020. In addition to the HBB program, the number of doctors and health workers trained in resuscitation and stabilization was also accelerated. In the pandemic era, the neonatology working group has conducted a hybrid neonatal resuscitation training program since 2022.

Till today together the Neonatology Working Group and Perinatal Society provides resuscitation and stabilization training. Given the constraints not only on competence but also on equipment completeness. In 2019 the government through the ministry of health has increased the distribution of medical devices related to resuscitation and stabilization, along with the involvement of all teaching hospitals and province referral hospitals to assist several under-built hospitals for the correct use and maintenance of said medical devices, as well as to increase competences, especially in neonatal resuscitation and stabilization.

S4D: Resuscitation of Newborns at Risk of Covid-19

See Kwee Ching

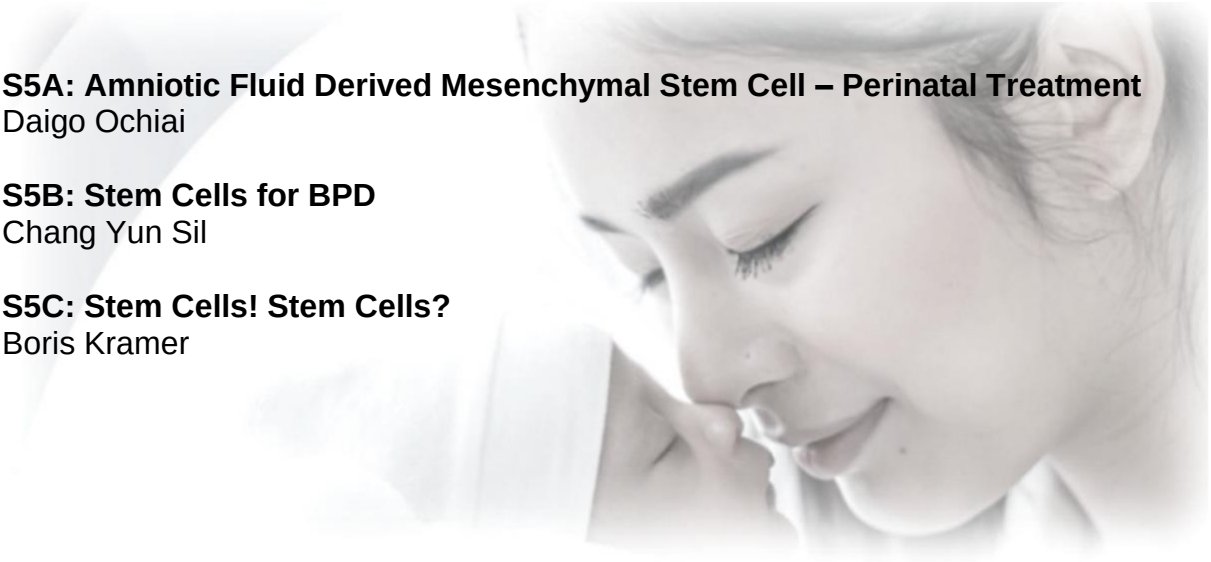
Since the onset of the pandemic in 2020, everyone from newborns to elderly patients has been infected with SARS CoV2 virus from wild type variants to the latest BA4 subvariant of the Omicron. Perinatal management of the pregnant mothers with COVID 19 infection and the subsequent newborn resuscitation has evolved from an unknown fearful approach to a more confident safety strategy in the last 2 years. COVID 19 vaccination of pregnant mothers heralded the sunrise of hope for millions of pregnant mothers all over the world and also the more safer environment for all healthcare workers involved in newborn resuscitation and NICU care. The rare incidence of vertical transmission in newborns is another advantage for the frontliners in the newborn resuscitation work. The experience in this aspect provides groundbreaking knowledge to deal with newborn resuscitation in future pandemics .

SYMPOSIUM 5:

New World Perinatal Science & Innovations

26th August 2022, Friday

Chairperson: Boo Nem Yun



S5A: Amniotic Fluid Derived Mesenchymal Stem Cell – Perinatal Treatment
Daigo Ochiai

S5B: Stem Cells for BPD
Chang Yun Sil

S5C: Stem Cells! Stem Cells?
Boris Kramer

S5A: Amniotic Fluid Derived Mesenchymal Stem Cell – Perinatal Treatment

Daigo Ochiai

[Objective]

Human amniotic fluid stem cell (hAFSC) is a type of mesenchymal stem cells (MSC) that can be autologously transplanted in the neonatal period. The aim of this study is to investigate the therapeutic effects of hAFSC for perinatal intractable neurological diseases using animal models of hypoxic-ischemic encephalopathy (HIE) and periventricular leukomalacia (PVL) to prevent the onset of cerebral palsy.

[Experiment. 1]

Method: Hypoxia-ischemia (HI) was induced in mice by right common carotid artery occlusion and exposure to hypoxia. Animals intranasally received hAFSC or PBS alone at 10 days post HI and were harvested for histological analysis after functional tests at 21 days post HI. We also implanted PKH26 labeled- hAFSC to assess their migration to the brain.

Result: hAFSC significantly improved sensorimotor function, restored brain volume, and reduced neuroinflammation and gliosis. PKH26 labeled- hAFSC were transiently observed in the brain section.

[Experiment. 2]

Method: Lipopolysaccharide (LPS) was intraperitoneally administrated in 3-day old rats to mimic PVL. Rats were pretreated with hAFSC or saline alone 3 hours before LPS stimulation. Serum levels of inflammatory cytokines were measured after LPS stimulation. Animals were harvested for histological analysis at 2 days and 28 days post LPS exposure.

Result: hAFSC significantly improved survival rate. Serum levels of inflammatory cytokines were reduced and inflammation-induced damage in brain, lung, and liver were histologically reversed by hAFSC.

[Conclusion]

These results indicated that hAFSC could have therapeutic potential for animal models of HIE and PVL. *In vitro* culture of autologous hAFSC during pregnancy could make them available for use soon after birth. Thus, stem cell therapy using autologous hAFSC could prevent the onset of cerebral palsy.

S5B: Stem Cells for BPD

Chang Yun Sil

Bronchopulmonary dysplasia (BPD) is a chronic lung disease associated with ventilator and oxygen therapy in very premature infants. Although the number of very preterm infants at high risk of developing BPD has increased due to recent advances in neonatal intensive care, BPD remains a significant cause of death and lifetime morbidities without effective ways to prevent or treat it. Thus, a new treatment modality is urgently needed to improve the prognosis of this intractable disorder. Previous preclinical studies have shown that mesenchymal stem cells (MSCs) attenuate hyperoxic-induced neonatal lung injury in an animal model simulating BPD of human infants.

In a first in human phase 1 clinical trial, we have demonstrated that intratracheal transplantation of umbilical cord blood derived MSCs for bronchopulmonary dysplasia (BPD) is safe and feasible in very preterm infants. Then, we performed a randomized, double-blind, placebo-controlled phase II clinical trial to investigate the therapeutic efficacy of MSCs (1×10^7 cells/kg) for BPD. It was conducted on 66 preterm infants born at 23 to 28 weeks of gestation and received mechanical ventilator support with respiratory deterioration between 5 and 14 postnatal days. The primary outcome of death or moderate to severe BPD was not significantly different between the control and MSC group. However, subgroup analysis revealed that MSC transplantation decreased secondary outcome of severe BPD in subgroup infants of 23 to 24 weeks, not in 25-28 weeks of gestation. We recently completed 5-year long-term follow-up study for these enrolled patients and the results are pending. Accordingly, we are now conducting an additional larger randomized double-blinded placebo-controlled phase II clinical trial that focuses on extremely preterm infants of 23 to 24 weeks of gestation. (NCT03392467).

S5C: Stem Cells! Stem Cells?

Boris Kramer

Stem cells can proliferate and differentiate. Stem cells respond to their local environment in a highly dynamic manner which may not only involve proliferation and differentiation, but also secretion of growth factors, cytokines, extracellular vesicles, and the transfer of mitochondria to neighboring cells. Stem cells have been clinically tested as therapeutics in many diseases. The success rate of translation from successful animal models to successful clinical trials has been however low. We therefore studied the basic five questions of any (stem cell) therapy: WHEN to give WHICH CELLS to WHICH PATIENTS in WHAT DOSE via WHICH ROUTE?

The time of transplantation depends on disease pathogenesis and the availability of stem cells. A heterologous product “off the shell” may be quickly available whereas a homologous product needs time for preparation and quality control. Usually, the cells of heterologous products have been expanded in vitro. The cultivation at 21% oxygen may affect the stem cells in a negative manner in addition to risks of genetic instability. The choice of homologous versus heterologous is therefore complex. The patients may benefit at different stages of their disease from stem cell treatment since stem cells can respond in many different ways. Different diseases may mandate also dose adjustments. However, all successful clinical applications of stem cell therapy use a wide range of doses. The ability of stem cells to proliferate may partially explain the wide range of doses.

Prophylactic treatment is the maximum aim of all treatments. However, regeneration, limitation of spreading the disease, and immune modulation in already existing disease conditions may be the desired effects of stem cell therapy. Stem cells may in particular allow regeneration if the stem cells reach the affected compartment. The route of administration [e.g. intravenous, intraarterial, intramuscular, intrathecal, intratracheal] may thus determine, which compartment stem cells can reach. The clinical studies in preterm babies at risk for bronchopulmonary dysplasia are discussed and compared to a very different clinical approach. Patients with spinal cord injury were treated with homologous stem cells isolated by negative selection from their bone marrow without manipulation of the stem cells by oxygen exposure, or proliferation (NeuroCells®, Neuroplast BV, Netherlands). The fresh, non-frozen stem cells were transplanted into the cerebrospinal fluid to make sure they reached the area of neurodegeneration. The first 18 patients have been treated without safety problems. The implication of this treatment concept for neonatal diseases will be discussed.

SYMPOSIUM 6:

Innovative Monitoring

26th August 2022, Friday

Chairperson: Wong Chee Sing

S6A: Brain Function Monitoring in Asphyxiated Infants
Alistair Gunn

S6B: Managing PPHN with Continuous Haemodynamic Monitoring
Willem de Boode

S6C: Cardiac Output Monitoring in Newborn Infants
Willem de Boode

S6A: Brain Function Monitoring in Asphyxiated Infants

Alistair Gunn

Perinatal hypoxia-ischemia (HI) is still a significant contributor to mortality and adverse neurodevelopmental outcomes in term and preterm infants. HI brain injury evolves over hours to days, and involves complex interactions between the endogenous protective and pathological processes. Understanding the timing during the evolution of injury is vital for guiding treatments. Post-HI recovery is associated with a typical neurophysiological profile, with stereotypic changes in EEG activity, cerebral perfusion and oxygenation. After the initial recovery, there is a delayed, prolonged reduction in cerebral perfusion mediated by endogenous metabolic suppression, followed by secondary deterioration with seizures, hyper perfusion and increased cerebral oxygenation, associated with altered neurovascular coupling and impaired cerebral autoregulation. These changes in cerebral perfusion are associated with the stages of evolution and injury severity. In this presentation, we will review evidence that changes in EEG, cerebral oxygenation and metabolism after HI may be useful biomarkers of prognosis.

S6B: Managing PPHN with Continuous Haemodynamic Monitoring
Willem de Boode

In this presentation the importance of advanced haemodynamic monitoring will be addressed in newborns with persistent pulmonary hypertension. Moreover, the risk of a blood pressure-based management will be demonstrated in these patients.

S6C: Cardiac Output Monitoring in Newborn Infants
Willem de Boode

An overview will be presented in the technologies available for cardiac output monitoring in newborn infants with emphasis on feasibility and validity.

SYMPOSIUM 7:

STAT! Perinatal Emergencies

26th August 2022, Friday

Chairperson: Mamoru Tanaka

S7A: Dopplers & Monitoring Methods for Fetal Growth Restriction – When to Intervene
Nitin Chaubal

S7B: The Distressed Fetus! – Timeliness of Intervention
Bavanandam Naidu

S7C: Dilemmas of Perimortem Caesarean Sections
TP Baskaran

S7B: The Distressed Fetus! – Timeliness of Intervention

Bavanandam Naidu

Fetal distress is an emergency condition requiring rapid caesarean delivery. Hence, it has been recommended that the decision-to delivery interval should be within 30 minutes. Many previous studies have failed to show any improved outcome with short decision-to-delivery interval. The reasons are (1) most of these studies were of small scale and retrospective with limitation in design; (2) the indications for caesarean deliveries recruited in these studies were not specific for life-threatening fetal distress; (3) selection bias as clinicians tended to deliver worse cases more quickly than less severe cases; (4) correlation was analysed between adverse fetal outcome and decision to delivery interval, but ignored the bradycardia-to-delivery interval, which reflected the actual duration of fetal hypoxia. Latest studies indeed have shown that bradycardia-to-delivery interval correlated significantly with arterial pH and base excess in life-threatening fetal conditions. The longer the bradycardia-to-delivery, the poorer the arterial blood gases parameters and neonatal outcomes. This result supports that every obstetric unit should have the capability to accomplish emergency caesarean section in 30 mins of decision for fetal safety.

For irreversible causes of fetal bradycardia such as cord prolapse, uterine rupture, placental abruption, cord arterial pH drop by 0.011 per minute during the bradycardia-to-delivery interval. Hence, rapid delivery is indicated in these conditions. For reversible causes or unknown causes of fetal bradycardia, cord arterial pH is not correlated with duration of bradycardia. It is essential to conduct a quick search to exclude any irreversible causes while waiting for signs of recovery of the fetal heart rate. Discontinuation of oxytocin infusion, and in-utero resuscitation, may be considered, especially the use of acute tocolysis for iatrogenic uterine hyperstimulation. With adequate training of medical and nursing staff, availability of anaesthetists and operative facilities, a decision-to-delivery interval of less than 30 minutes is achievable.

S7C: Dilemmas of Perimortem Caesarean Sections

TP Baskaran

Perimortem Caesarean Sections (PMSC) are a rare occurrence. It is often associated with the delivery of the fetus soon after the occurrence of a cardiac arrest in a pregnant woman. The cause for such a clinical situation may be preceded by significant maternal haemorrhage, an anaesthetic mishap or a trauma sustained by the patient. The procedure is carried out primarily to enable / facilitate optimal resuscitation of the mother. The fatal outcome is usually of secondary consideration. The survival of the mother and fetus is usually related to the primary cause of the cardiac arrest and outcome of the resuscitation efforts. In addition; the duration between the occurrence of the cardiac arrest and delivery appears to have a paramount impact on the outcome of the mother and fetus. For obvious reasons; no large-scale trial can be implemented to determine the ideal duration. The current policy of 'best delivered by the end of 5 minutes' is based on review of cases by Katz et al; first published in1998. Subsequent case serial years later by the same team (2005) and others standardised initiating the procedure at the end of 4 minutes from the time of cardiac arrest and deliver within a minute. Keeping in mind, PMCS beyond the 5 minutes time frame is not always a futile exercise. The place of delivery, availability of equipment on site and skill of the surgeon in attendance, will invariably contribute to the maternal outcome. Fetal outcomes will be dependent on the period of gestation and availability of neonatal backup. Hence best outcomes probably occur when PMSC is performed in a hospital /medical facility setting. Training protocols and skills drill must continue to occur to keep teams in readiness to perform the procedure. The protocol's primary need is to focus on team effort rather than clinical skill readiness. PMCS may be a rarity but crush CS are not; hence obstetric teams will always have the skill to perform a PMSC. It's the team work which will make the difference. In any obstetrics emergency, maternal and fetal outcomes are at its best when the team work is at its best. At the end of the procedure; irrespective of the outcome; remember to debrief the team.

SYMPOSIUM 8:

The Final Lifeline

27th August 2022, Saturday

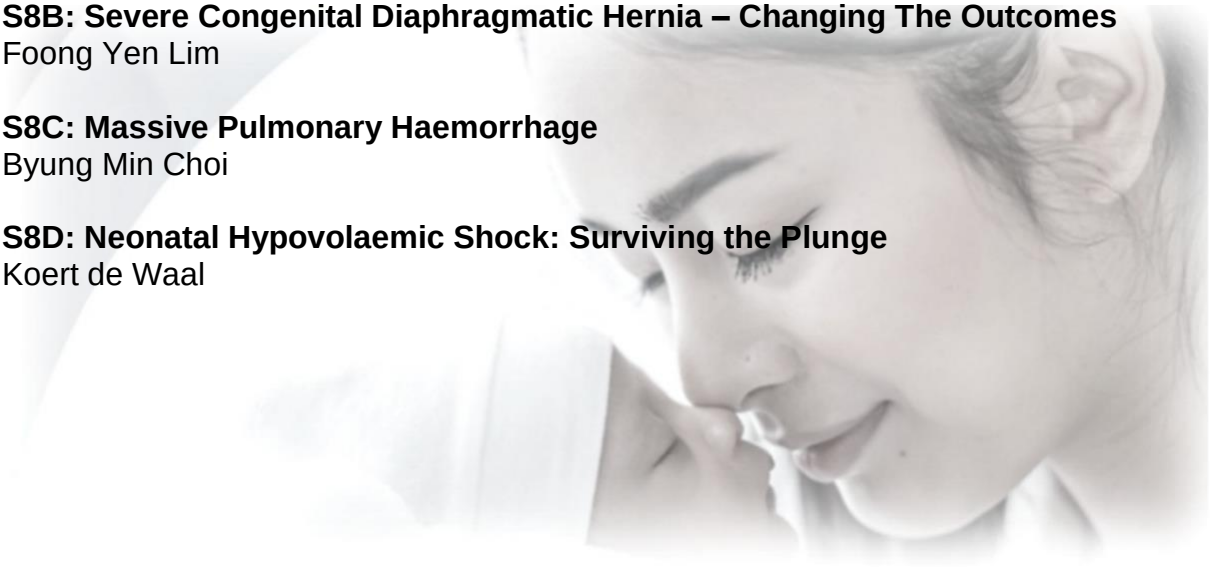
Chairperson: Azanna Ahmad Kamar

S8A: Babies with Hypoxaemic Respiratory Failure
Satyan Lakshminrusimha

S8B: Severe Congenital Diaphragmatic Hernia – Changing The Outcomes
Foong Yen Lim

S8C: Massive Pulmonary Haemorrhage
Byung Min Choi

S8D: Neonatal Hypovolaemic Shock: Surviving the Plunge
Koert de Waal



S8A: Babies with Hypoxaemic Respiratory Failure

Satyan Lakshminrusimha

Hypoxemic respiratory failure (HRF) is often associated with persistent pulmonary hypertension of the newborn (PPHN). This combination (HRF + PPHN) is seen in both preterm and term infants. The approximate incidence is around 2 per 1000 live births in the US. Neonates present with respiratory distress, labile hypoxemia and in some cases, differential cyanosis (lower oxygen saturations -SpO_2 – in the lower limbs compared to the right upper limb). Most cases of HRF/PPHN are secondary to lung disease such as meconium aspiration syndrome (MAS), congenital diaphragmatic hernia (CDH), respiratory distress syndrome (RDS), pneumonia, transient tachypnoea of the newborn (TTN) and asphyxia. However, some cases are not associated with lung disease and are due to pulmonary vascular remodelling or hyperactivity and are known as idiopathic or “black-lung” PPHN.

The diagnosis of HRF/PPHN is established by echocardiography. Absence of anatomical cardiac defect, right-to-left or bidirectional shunt at the level of the patent foramen ovale (PFO) or patent ductus arteriosus (PDA), right ventricular hypertrophy or dysfunction, bulging of the interventricular septum to the left and tricuspid regurgitation are common echocardiographic features of HRF/PPHN.

The management is based on diagnosis. In parenchymal lung disease such as MAS, pneumonia and RDS, optimal lung recruitment with respiratory support to provide adequate mean airway pressure (including mechanical ventilation if needed), surfactant, along with supplemental oxygen is needed. In patients with hypoplastic lungs such as CDH, gentle ventilation with low pressures will minimize volutrauma to the fragile lungs. If these measures are not adequate, pulmonary vasodilator therapy with inhaled nitric oxide (iNO), IV/PO sildenafil and IV milrinone may be considered.

Approximately 20-30% of patients with HRF/PPHN may not respond to mechanical ventilation and pulmonary vasodilator therapy. The most common reason for poor response is inadequate lung recruitment. Using adequate PEEP or mean airway pressure to open the lungs to functional residual capacity is crucial to reduce pulmonary vascular resistance (PVR) and optimize delivery of iNO. Managing hemodynamic with appropriate fluid and vasopressor support is needed in 30-40% of patients with HRF/PPHN. If all these measures fail, extracorporeal membrane oxygenation (ECMO) may be warranted.

S8B: Severe Congenital Diaphragmatic Hernia – Changing The Outcomes

Foong Yen Lim

Although we are able to achieve near 100% survival in low-risk isolated CDH, the management of patients with severe CDH remains challenging despite advancement in medical and surgical care in the past decades. During this presentation, we will review briefly some management strategies that have helped to improve the outcomes of these high-risk babies. These strategies include perinatal management, procedures on placental support, ECMO, and fetoscopic endoluminal tracheal occlusion (FETO).

S8C: Massive Pulmonary Haemorrhage

Byung Min Choi

Massive Pulmonary haemorrhage (MPH) is a fatal event associated with significant morbidity and mortality, particularly among extremely preterm infants in the neonatal intensive care unit. MPH occurs mainly in preterm infants with severe respiratory distress syndrome, typically present after surfactant administration within the first 72 hours of life.

Although the precise mechanism of MPH remains unclear, it has been suggested that enhancement of left-to-right shunting through the patent ductus arteriosus (PDA) is due to an acute decrease in pulmonary vascular resistance. Consequently, increased pulmonary blood flow can give rise to pulmonary oedema, microvascular injury, and eventual capillary haemorrhage. When MPH is precipitated by a hemodynamically significant PDA, it is important to consider treating the PDA either pharmacologically or surgically.

Although symptomatic treatment is the most preferred treatment strategy for proven symptomatic PDA, a considerable number of infants only received conservative treatment without any pharmacological or surgical interventions in the lower gestational age and lower birth weight group in Korea.

The present review will compare MPH and MPH related outcomes of infants treated conservatively without any intervention and those of infants managed by other therapeutic strategies in extremely preterm infants with symptomatic PDA.

S8D: Neonatal Hypovolaemic Shock: Surviving the Plunge

Koert de Waal

True hypovolemic shock is rare in neonates and is mostly seen early after birth. Causes include peripartum bleeding from the fetal side of the placenta, feto-maternal haemorrhage, feto-fetal haemorrhage or a postpartum haemorrhage of the neonate. With ongoing bleeding, the autonomic sympathetic system is activated with inhibition of the parasympathetic system leading to increased heart rate, cardiac contractility and arterial and venous tone. Blood volume from the non-vital organs and the venous system will be recruited to help preserve blood flow to the brain, heart and adrenal glands. If the bleeding cannot be stopped, severe hypovolemia will finally lead to severe acidosis and myocardial dysfunction, organ failure and death. The optimal approach to haemorrhagic hypovolemia in neonates has not been well studied. Most of what is known about physiology and management has been extrapolated from animal and adult data. Rapid replacement of the type of the fluid lost, most frequently whole blood, is the key approach along with appropriate supportive measures. Noradrenaline is the first line of vasopressor-inotrope used in adults as it induces significant venoconstriction at the level of the splanchnic circulation in particular. Echocardiography can be effectively used to monitor systemic perfusion during hypovolemic shock in neonates and to test fluid responsiveness at the bedside.

SYMPOSIUM 9:

Quality Networking

27th August 2022, Saturday

Chairperson: Zaleha Abdullah Mahdy

S9A: Asian Neonatal Collaborative Network
Tetsuya Isayama

S9B: Impact of Covid-19 on Perinatal Health in FAOPS Region
Mohammad Shahidullah

S9C: Global CoLab Collaborative
James Michael Roberts

S9A: Asian Neonatal Collaborative Network

Tetsuya Isayama

The reduction of neonatal death is one of the focuses of the Sustainable Development Goals (SDGs) adopted in the United Nations Sustainable Development Summit in 2015. Although neonatal mortality has been improving, it still remains high in low- and middle-income countries (LMICs). Therefore, how to reduce the neonatal mortality in LMICs is a key issue in global health. The top cause of neonatal death was prematurity followed by asphyxia. Therefore, the improvement in the care of preterm infants as well as birth asphyxia is important to reduce global neonatal death.

Many countries or regions developed national neonatal networks, which are the groups of people and facilities who collaborate to improve the quality of care and outcomes of newborn infants in neonatal intensive care units. In Japan, the Neonatal Research Network Japan (NRNJ) was established in 2004. The NRNJ currently includes approximately 190 NICUs across Japan and maintains a national neonatal database of very preterm infants. Furthermore, the NRNJ has been collaborating with other national or regional neonatal networks in high-income countries in a project called iNEO. Wide variations in clinical practice and outcomes of preterm infants were found between the countries or regions in the iNEO. The information has been used for benchmarking and quality improvement to improve preterm infants' outcomes in each country or region in the iNEO.

Following the success of the iNEO, we recently launched another new international collaboration in Asia; Asian Neonatal Network Collaboration (AsianNeo). The AsianNeo includes eight countries (Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, and Thailand). The aims of the AsianNeo are (1) to understand the differences in systems, clinical management and outcomes of sick newborn infants, (2) to improve the quality of neonatal care in participating countries or regions by applying the obtained knowledge and adopting methods of quality improvement, (3) to accelerate the communication among Asian neonatal networks, and (4) to educate young paediatricians and neonatologists. The uniqueness of the AsianNeo is the inclusion of both high-income countries and LMICs in Asia to learn from each other. In this presentation, I will introduce the current activities of the AsianNeo and the future perspectives of these collaborations.

S9B: Impact of Covid-19 on Perinatal Health in FAOPS Region

Mohammad Shahidullah

Coronavirus pandemic is a global public health problem caused by severe acute respiratory syndrome coronavirus 2 (SARS-COV-2). Since its inception, the world has experienced a new normal life. The devastating spread of this virus has made significant impacts on the world's economy, health system, education and many other sites which are essential for the development of a nation. Among the health impacts, perinatal health was undoubtedly affected and country members of FAOPS have encountered similar problems. Perinatal period is one of the valuable periods of life for both mothers and neonates. During the pandemic, it was evident that antenatal visits were reduced due to nationwide lock down, lack of transport and confusion about availability of service in health centers. A remarkable decrease was noticed in institutional delivery and essential newborn care in the community. Although mothers affected with COVID-19 required lesser admission to intensive care units, some reported birth of low-birth-weight newborns who needed specialized care. Specific COVID management guidelines were prepared by many countries which supported physicians to get through this critical situation. Routine immunization rate was also reduced. Other than these physical hazards, mothers dealt with mental health issues. There was a sharp rise of psychological symptoms especially depressive and anxiety symptoms in pregnant and post-partum women during COVID-19. The novel coronavirus has disrupted perinatal health a lot and still countries are passing out with its impacts. Moreover, appropriate measures have been taken by all countries but a comprehensive approach and learning attitude from each other can improve the situation in many aspects.

S9C: Global CoLab Collaborative

James Michael Roberts

One of the greatest opportunities for accelerating research progress is the enormous power of current computer technology to agnostically analyse huge amounts of data. This allows an understanding of physiology and pathophysiology as never before. This is particularly relevant to pregnancy where not only must we understand the complexity of the interactions of genes and environments but must do this for two individuals – mother and baby. This opportunity comes with challenges. How does one share data never meant to be shared? How can we economically collect biological materials? How do we determine the important research questions? How do we prevent this level of complexity from increasing the disparities between high income and low income settings? These considerations led to the formation of the Global Pregnancy Collaboration (CoLab). Begun with funding by the Bill and Melinda Gates Foundation in 2010, CoLab is a consortium of over 40 centres from high and low resource settings around the world.

The original goal of CoLab was sharing of data and biological samples. This was successful, resulting in several publications. However, three facts quickly became evident. 1. The best recognized sources of data and biosamples excluded low resource countries that were vastly underrepresented. 2. There is more to collaboration than sharing. 3. There is more to sharing than merging (attempting to merge) disparate data and differently collected biosamples. Based upon this CoLab extended its mission to increase the involvement of low resource settings in collaborative efforts. This included improving research infrastructure both human and analytical. We also moved to facilitate merging of data and biosamples through designing and encouraging harmonized data sets and participating in the standardization of biological sample collection. Working with investigators from high and low resource settings we sponsored workshops to identify questions in pregnancy research that required increased attention. The results were then published with recommendations in high impact journals. We also provide virtual educational presentations aimed at beginning investigators in low resource settings. In my presentation I will provide examples of what CoLab is doing and plans to do and how this can be useful to members of the audience.

SYMPOSIUM 10:

Saving babies - Diagnosis & Prevention

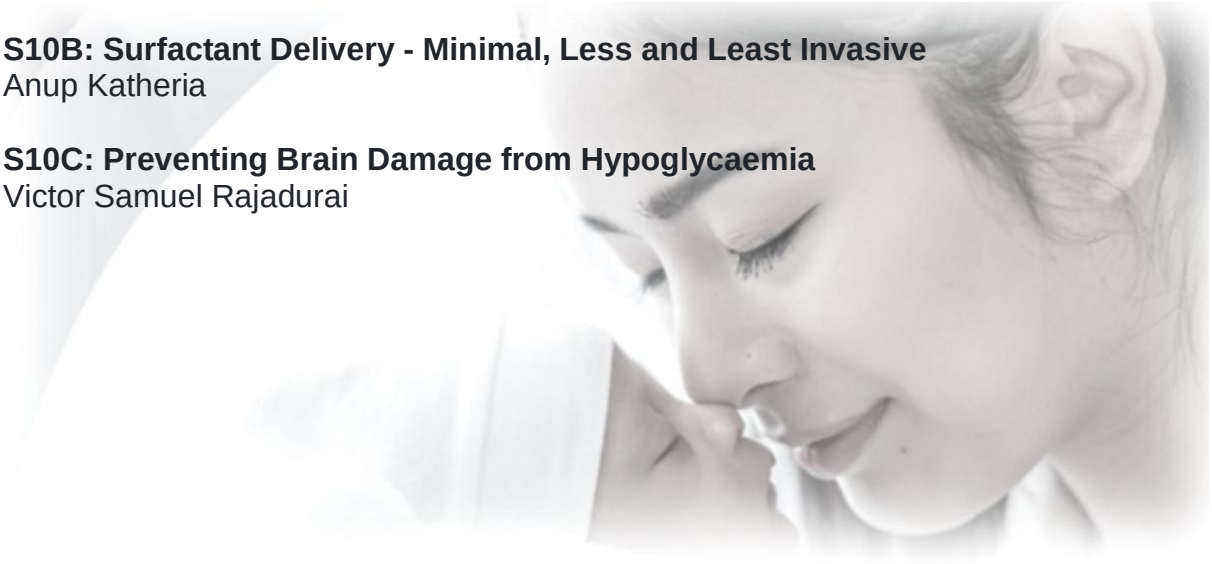
27th August 2022, Saturday

Chairperson: Cheah Fook Choe

S10A: Pitfalls in Functional Lung Ultrasound
Patricia Woods

S10B: Surfactant Delivery - Minimal, Less and Least Invasive
Anup Katheria

S10C: Preventing Brain Damage from Hypoglycaemia
Victor Samuel Rajadurai



S10A: Pitfalls in Functional Lung Ultrasound

Patricia Woods

A unique presentation sharing expertise to guide users discussing the very technical ‘tips and tricks’ of performing point of care lung ultrasound in NICU. Beyond the basics of A & B lines, this case-based presentation and discussion will help users optimise images and maintain awareness of the limitation in LUS.

S10B: Surfactant Delivery - Minimal, Less and Least Invasive

Anup Katheria

As further evidence demonstrates that the avoidance of intubation reduces lung damage and its resultant bronchopulmonary dysplasia, the need to administer surfactant non-invasively has become more critical. Yet, there are several types of methods for surfactant administration with varying benefits depending on factors such as gestational age. This talk will review the various alternatives for non-invasive surfactant administration. We will review the current evidence and discuss the most recent trials.

S10C: Preventing Brain Damage from Hypoglycaemia

Victor Samuel Rajadurai

Neonatal hypoglycaemia is the most common biochemical abnormality occurring in 15-20% newborn infants. About 10% require more intensive treatment and sub-optimal management may cause irreversible neurological sequelae. Persistent and recurrent hypoglycaemia can severely impair brain growth and its function. The duration of hypoglycaemia has a larger effect on brain injury rather than the severity of hypoglycaemia. The blood glucose threshold for neonatal hypoglycaemic brain injury (NHBI) is controversial and remains unclear. The pathological changes of NHBI characteristically involve grey matter of posterior parieto-occipital regions of the brain bilaterally. The cerebellum and brainstem are often not involved and haemorrhagic lesions are rare. Hypoglycaemia and cerebral hypoxia synergistically accentuate neuronal injury. MRI and MRS are the more sensitive and specific screening methods for diagnosing NHBI and they are superior to ultrasound and CT.

Skin-to-skin care soon after birth and early initiation of breastfeeding have shown to improve glucose homeostasis and are the most important factor for the prevention of NHBI. The management of the neonate needs to be based on a feed-centric pathway. The use of buccal glucose gel has markedly reduced the need for parenteral glucose administration and separation of the mother-infant dyad. It is more effective than milk feeds alone in reversing asymptomatic hypoglycaemia in infants ≥35 weeks gestation. The possibility of hyperinsulinemia as the underlying cause in persistent or recurrent hypoglycaemia must be considered particularly in infants after 72 hours of life. The etiologic factors include intra-uterine growth restriction (IUGR), infants of diabetic mothers (IDM) and Beckwith-Wiedemann syndrome, islet cell dysregulation syndrome and metabolic disorders. In these cases, the plasma glucose levels need to be kept above 3.5 mmol/l to prevent brain injury. They may need treatment with Diazoxide, Glucagon and/or Octreotide in addition to parenteral glucose. Genetic studies and DOPA pet scan in refractory cases enable to distinguish between focal & diffuse lesions in the pancreas and optimise therapy. Wide fluctuations of blood glucose and hyperglycaemia may aggravate brain injury, hence avoided. Early intervention programme can promote the functional reorganization of the central nervous system, promote the recovery and regeneration of injured brain cells in these high-risk infants.

SYMPOSIUM 11:

Improving Outcomes for the New World

27th August 2022, Saturday

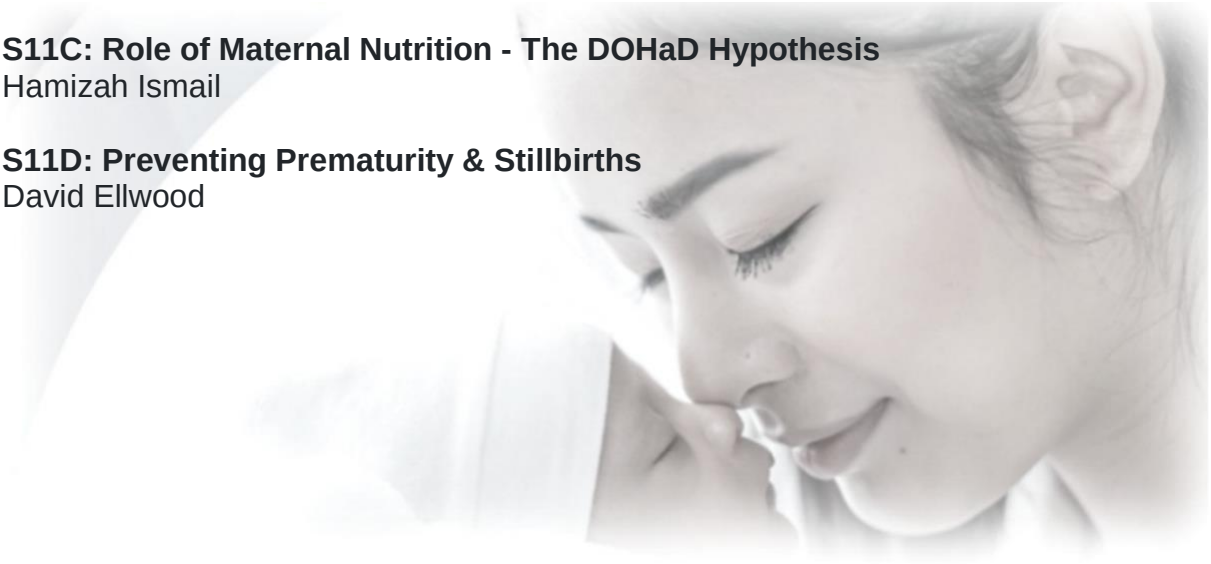
Chairperson: Diasdado Mariano

S11A: Towards Zero NEC - Risk Awareness Tools
Shiela M Gephart

S11B: Monitoring with Perinatal Telehealth
Zaleha Abdullah Mahdy

S11C: Role of Maternal Nutrition - The DOHaD Hypothesis
Hamizah Ismail

S11D: Preventing Prematurity & Stillbirths
David Ellwood



S11A: Towards Zero NEC - Risk Awareness Tools

Shiela M Gephart

Necrotizing enterocolitis is a global concern for fragile infants, especially those born premature. Risk factors have been documented in the literature, with formula exposure and premature birth commonly implicated. However, neonatal intensive care units have been able to reduce their NEC rates- even to near zero by prioritizing human milk feeding beginning with colostrum for oral care, following standardized feeding guidelines, stewarding empiric antibiotic use and avoiding antacids and using tube asepsis for feeding. Some units also restrict feeding during the immediate blood transfusion period as well. Along with using consistent approaches to prevent NEC, when NEC arises, bedside tools may be able to speed risk awareness and timely recognition so actions can be taken to rescue the infant. This presentation describes, broadly, approaches to reduce NEC and then focuses more closely on risk tools- especially GutCheckNEC to support bedside clinicians' ability to assess and act on NEC risk.

Results from a program of research will be shared, including a second validation of GutCheckNEC that has not yet been published. That study involves a correlational descriptive study from three affiliated NICUs (N=132, 88 controls, 44 NEC cases). In this analysis, cases were fed later ($p = 0.03$) and received less human milk. At 68 hours of life, GutCheck^{NEC} scores were associated with NEC requiring surgery or resulting in death (Relative risk ratio [RRR] = 1.06, $P = 0.036$), associations which persisted at 24 hours prior to diagnosis (RRR = 1.05, $P = 0.046$); and at the time of diagnosis (RRR = 1.05, $P = 0.022$) but showed no associations for medical NEC. GutCheck^{NEC} scores were significantly correlated with PEWS scores ($r > 0.30$; $P < 0.005$ for each comparison) and SNAPPE-II scores ($r > 0.44$, $P < 0.0001$ for each comparison). Clinical sign count was positively associated with GutCheck^{NEC} and PEWS scores at time of diagnosis (r=0.19, p=0.026; and r=0.25, p=0.005, respectively), but not with SNAPPE II scores. We urge caution against using GutCheck^{NEC} as a diagnostic tool but encourage it's use to structure and streamline communication and to raise awareness of NEC risk.

S11B: Monitoring with Perinatal Telehealth

Zaleha Abdullah Mahdy

Telehealth involves the use of technology to support the provision of health care, often when providers and patients, or providers and their colleagues, are separated by distance. Telemedicine is limited to delivery of direct patient services, whereas telehealth is a broader term that encompasses not only telemedicine, but also other health-related activities, such as provider consultations with one another regarding cases (i.e. teleconsultation) or health promotion exercises such as remote breastfeeding support and education (telelactation).

Telehealth services are typically delivered in one or more of the following ways: i) Live video, or synchronous telehealth, in which a patient and provider interact in real time via screen; ii) Store-and-forward services, in which a provider collects clinical data or information and sends it to another provider for an assessment or evaluation; iii) Remote patient monitoring, in which patients use technological tools and devices at home to send clinical data in real time to a provider or hospital; and iv) Mobile health, or mHealth, which refers to the use of mobile devices such as smartphones and tablets to support healthy behaviours through applications, text message reminder services, and other communication interventions.

Telehealth services have much benefits to offer in perinatology: i) Improved antenatal care quality and compliance (patient compliance as well as healthcare provider compliance to clinical guidelines); ii) Possible reduction in maternal anxiety; iii) Possible positive effect on neonatal outcome in general, including breastfeeding, possible reduction in preterm births and low birth weight; and iv) Facilitates triaging of care according to level of pregnancy risk.

Moving towards a happy and healthy digital-savvy community along the principles of Society 5.0, telehealth in perinatology should be promoted to become the new norm.

S11C: Role of Maternal Nutrition - The DOHaD Hypothesis

Hamizah Ismail

Barker hypothesised that adult disease has its origins in the foetal life while developing in the maternal womb, influencing the foetus' entire adult life and having multigenerational effects. This is later referred to as the DOHaD (Developmental Origin of Adult and Health Diseases).

For the purposes of this symposium, the generation of the new world would be the foetus or infant of the 1. SARS-CoV-2 gestational infections 2. current macronutrient or diet habit of the mother, and 3. micronutrient supplements received by the mother.

SARS-CoV-2 causes high C-reactive protein (CRP), a maternal inflammatory marker that is associated with fetal brain involvement. Vaccination may also cause high CRP to the level of maternal infection. Further to infection and vaccination, COVID-19 has caused many vulnerable families to experience increased food insecurity and poor food quality intake, posing a triple environmental risk to the developing foetus and infant. The total effects of the COVID-19 pandemic on the foetal brain will be determined long after the pandemic has ended; however, a report of 57 infants whose mothers had COVID-19 gestation infection, predominantly in the third trimester, showed decreased motor, communication, and social development at three months of age. Learning from previous experiences, viral infections during pregnancy have been linked to future autism and schizophrenia.

The maternal diet habits or macronutrient intakes such as fast food or junk food eaters contribute to gestational diabetes and maternal obesity. The majority of mothers consume little protein but plenty of carbohydrates and saturated fats. Maternal malnutrition results in poor foetal or infant programming, which leads to childhood obesity and an increase in diabetes and cardiovascular disease later in life.

Micronutrients (iron, folate, zinc, iodine, and choline) or vitamins (Vit B12, A, D, E) deficiencies or excesses during pregnancy have been linked to an increased risk of noncommunicable diseases and musculoskeletal problems in adulthood. The amount and composition of maternal micronutrients from different diets and supplements have significant short- and long-term effects on foetal and infant neurodevelopment. The effects are heavily influenced by the stages of foetal and infant development. Vitamin D and folate will be covered in this presentation due to availability of strong evidence and commonly used in our daily practise and prescription.

Investing in early childhood nutrition from conception to the first two years of life (the first 1000 days) maximises human development potential by preventing growth restriction, promoting optimal brain development, and ensuring the quality of life for survivors. This can be accomplished by promoting maternal and child health, reducing malnutrition through the provision of high-quality complementary foods, encouraging a well-balanced dietary pattern, and increasing health literacy. The importance of high-quality nutrition during pregnancy and lactation must be recognised by the general public and health professionals, as it has a significant and long-term impact on children's health.

S11D: Preventing Prematurity & Stillbirths

David Ellwood

Despite having excellent maternal and perinatal outcomes overall, there remains concern in Australia that the rates of stillbirth and preterm birth should be lower, and that more can be done to improve antenatal care for women at risk. The overall stillbirth rate, measured from 20 weeks gestation, has remained unchanged for several decades at about 7 per 1000 births, whilst the preterm birth rate has increased over the same period, from below 7 to nearly 9%. In some jurisdictions and for women from disadvantaged groups, the rate is much higher.

There are two national projects underway to address these problems, both of which are associated with the Perinatal Society of Australia and New Zealand. The 'Safer Baby Bundle' is a national intervention developed by the Stillbirth Centre of Research Excellence, using a bundle of care with five elements (smoking cessation, detection and management of fetal growth restriction, better management of women with decreased fetal movements, promoting of side sleeping, and improving timing of birth for women with risk factors for stillbirth). Also, there is an 'Australian Preterm Birth Prevention Alliance' recently formed and a national program, funded by the Federal Department of Health, to implement interventions targeting preterm birth. This is based on a successful program previously run in Western Australia. These interventions include smoking cessation, improved management of women at risk of early preterm birth based on cervical changes, preterm birth prevention for women with a prior history, and improved decision making on timing of birth for high-risk women in the late preterm period. The design of this program is an intense educational intervention across fifty maternity hospitals using a quality improvement methodology.

Clearly there is overlap in these two programs and areas in which there is some risk that the two objectives of stillbirth and prematurity prevention could be in opposition, especially to do with timing of birth. However, the two groups are working very closely together, have many researchers and clinicians in common, and there is an agreed way forward to ensure that both outcomes can be safely achieved. This presentation will describe the interventions and how the two programs are being implemented.

SYMPOSIUM 12:

Stay Safe!

27th August 2022, Saturday

Chairperson: Alice Ho Man Mooi

S12A: Leadership Role in Attaining Zero Harm
Pang Nguk Lan

S12B: Culture Eats Strategy - Building Robust Systems
Alvin S M Chang

S12C: Our People - Resilience in Academic Medicine
Tan Hak Koon

S12D: Large Scales Initiatives to Reduce Harm
Alvin S M Chang

S12A: Leadership Role in Attaining Zero Harm

Pang Nguk Lan

Most health care organizations are striving to attain high reliability with zero harm as the aim to mitigate adverse events while consistently providing high-quality care in the context of a rapidly changing environment. The governance framework and program structure are fundamental elements that are required to drive and lead their people towards a shared value to achieve zero harm. However, as the safety field evolves, there is a growing recognition of the role that organizational leadership plays in prioritizing safety and embracing the belief that all injuries are preventable and that no injury is acceptable.

Management's safety leadership lays the foundation upon which a solid system is built and leaders are the key influencers on the safety culture of an organization. The vital success to establishment of safety is through actions which create a strong culture in responding to patient and staff concerns with strong engagement and supporting efforts to improve safety by encouraging staff to speak up, reporting unsafe conditions and systems, help people make the best choices and monitoring progress.

Apart from having leaders to demonstrate safety through its actions, commitment, measures, and recognitions, the attitude, behaviour, and style of management can have a powerful effect on workforce safety to improve patient outcomes as well as to improve safety for healthcare workers.

S12B: Culture Eats Strategy - Building Robust Systems

Alvin S M Chang

While leadership plays an important role in setting strategic priorities of the organization, organizational culture plays an extremely important role at executing these priorities at ensuring a reliable safety and quality of care. Organizational culture is a shared way of thinking, feeling and behaving within the institution itself. It can be the culprit leading to downfalls of healthcare organizations. On the other hand, the right organizational culture can be a remedy for learning organizations to improve their safety and quality of care.

The recently published Ockenden report highlighted failings in the perinatal services of the Shrewsbury and Telford Hospitals NHS Trust. There was poor antenatal care for vulnerable women, repeated failures to correctly assess fetal growth, reluctance to refer women to tertiary centres to address fetal abnormalities, poor management of multiple pregnancies, poor management of gestational hypertension, failure to recognize sick or deteriorating women, failure to act on abnormal fetal heart patterns and failure to escalate concerns. These were the result of shortcomings within the leadership and teamwork. There was a culture of bullying and concerns raised by staff were taken lightly. This stemmed from poor working relationships, poor risk assessment, grossly inadequate response to adverse incidents, lack of board grip, inadequate clinical governance and emphasis on 'normal' birth particularly in high risk pregnancies at the expense of good care. The patients' voices were ignored leading to a gross lack of empathy in handling poor outcomes, mortalities and bereavement support.

As leaders, senior clinicians in the system need to be cognizant of team dynamics and communication among their members. Creating a psychologically safe environment for people to raise concerns and to learn from it for improvement is essential. This should include partnering and hearing the voices of patients. Leadership sets the culture. In turn, the culture determines the direction the organization is heading. A culture that promotes learning would steer away from merely blaming individuals for errors. In a psychologically safe environment, mistakes and errors are viewed as learning opportunities to strengthen the system. Focusing on this will help create robust processes to ensure a highly reliable delivery of care.

S12D: Large Scales Initiatives to Reduce Harm

Alvin S M Chang

The large-scale initiative was started with a view to reduce harm in healthcare institutions in Singapore by thirty percent in three years. This led to the formation of the Singapore Healthcare Improvement Network (SHINe). SHINe is a collaborative effort involving multi-stakeholders and multi-disciplinary teams across participating hospitals to reduce harm nationally. SHINe adapted the model for improvement by the Institute for Healthcare Improvement (IHI). The improvement tools and methods employed involve both the science and art of effecting change. Participating institutions gained knowledge, skills and attitudes in areas of improvement tools, change management, the psychology of change, spread, sustainability etc.

Target Zero Harm is a goal where KK Women's and Children's Hospital (KKH) is moving towards. Hence, the decision to participate in SHINe to achieve these goals. Improving hand hygiene compliance, prevention of catheter-associated urinary tract infection (CAUTI) and prevention of deep vein thrombosis (DVT) were at least three projects we embarked on using the SHINe method. Over a period of three years, we achieved hand hygiene compliance of more than 90% and reduction of CAUTI and DVT of more than 60%. More importantly, these efforts were sustained with further improvement in the outcomes even beyond the initial three-year objective. Obviously this translates to significant cost avoidance or savings both for the patients and the healthcare system.

More importantly, the lessons learnt from these efforts added value to the institution beyond SHINe. Unleashing intrinsic motivation in the people involved in the change, co-designing people-driven change, co-producing in authentic relationships, distributing power and adapting in action, principles behind the psychology of change by the IHI were key success factors for the achievement of the many objectives. Today, KKH had extrapolated the learnings from SHINe into other improvement work both in the clinical and operational settings. These are targeted to achieve robust process improvements that many high-reliability industries had achieved.

SYMPOSIUM 13:

Training in Perinatology

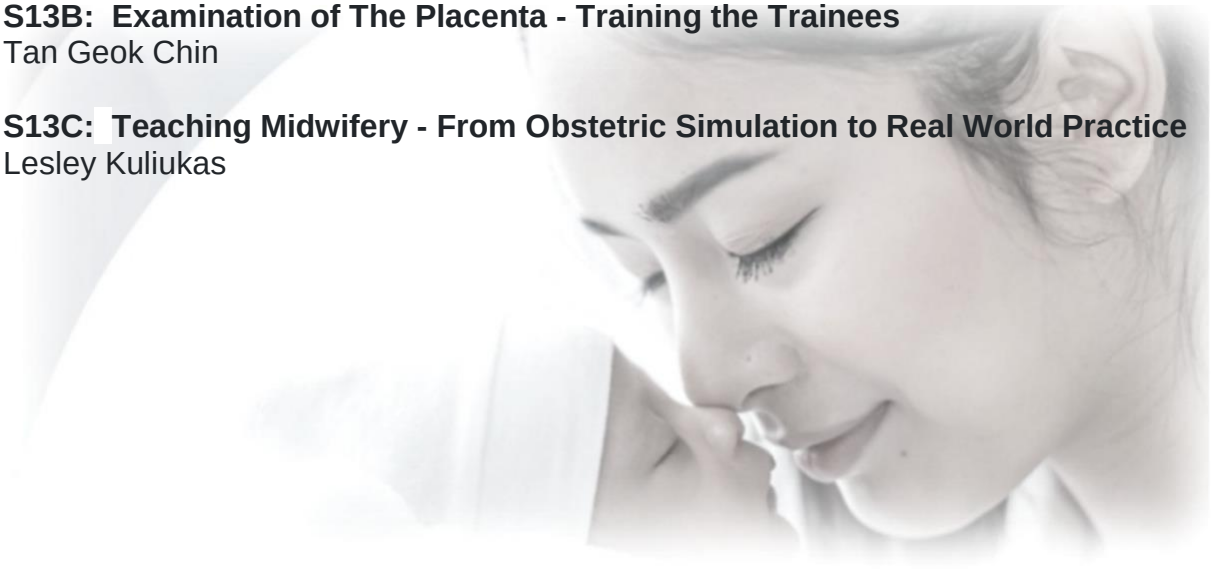
27th August 2022, Saturday

Chairperson: Khatijah Lim Abdullah

S13A: Simulation Training in Perinatal Emergencies – The ICOE Experience
Muniswaran Ganesan

S13B: Examination of The Placenta - Training the Trainees
Tan Geok Chin

S13C: Teaching Midwifery - From Obstetric Simulation to Real World Practice
Lesley Kuliukas



S13A: Simulation Training in Perinatal Emergencies – The ICOE Experience

Muniswaran Ganeshan

Perinatal emergencies are not uncommon and is associated with significant maternal and fetal implications. The perinatal period is often described as the most crucial phase with regards to maternal and neonatal health and hence having a skilled and a trained birth attendant remains a key indicator and a standard of care especially as we endeavor towards optimal perinatal outcomes.

Training has always been an essential part of medicine and there has been a significant evolution with regards to various training methodologies. From an observational approach to an apprentice based approach in medieval medicine, bedside teaching and simulation based hands on approach were the eventual evolution of training in modern medical education. However, the COVID-19 pandemic has dramatically elevated medical education to a digital platform which now seems to be the way forward. Despite the scarcity of the impact of learning and teaching, the virtual platform seems like the eventual evolution of training which has been instantly adopted and adapted by the medical fraternity.

Based on our own experience and observations in the organization of the Intensive Course in Obstetric Emergencies, (ICOE), we gained numerous and valuable experiences and realized that training in non-technical skills are now more important than ever before and needs to be incorporated in the training of perinatal emergencies. This essential skill is often not emphasized in the current curriculum. Communication, team management, leadership and situational awareness are skills that needs to be highlighted and taught as compared to the traditional teaching of focusing purely on surgical techniques. Our five year retrospective review shows that these skills can be effectively taught, simulated and analyzed while creating an impact as evidenced by the significant improvement in the post skills scores with regards to development of non-technical skills.

We realized that virtual learning, especially off-site teaching is as effective as on-site teaching for non-complex skills such a non-surgical management of postpartum haemorrhage. The Peyton's four step approach is an effective adult teaching methodology. Identifying specific objectives and optimizing virtual breakouts, short lectures but numerous virtual demonstrations and videos are essential measures which can be taught virtually especially for non-complex skills. The virtual platform also enables the resources to be recorded for a later reflection apart from being a cost-effective measure of learning, as the impact is truly significant across healthcare professionals of various seniorities beyond boundaries.

The impact of skills training was evaluated among doctors and midwifes in Malaysia and doctors in twelve other countries, namely Laos, Cambodia, Vietnam, Pakistan, India, China, Myanmar, Bangladesh, Mongolia, Japan, Nepal and Sri Lanka and the outcomes were significantly improved and were consistent despite differences in language, experience of participants, trainers and lack of resources and equipments. What is essential is a course that can be adaptive to local needs and challenges while optimizing a standardized teaching methodology as we endeavor towards improving maternal and fetal outcomes not only in Malaysia but in South East Asia as well.

As per the current evidences of the importance of a multi-professional team based approach, optimizing simulation based training using models of various fidelities, we believe that non-technical skills should be incorporated in training for perinatal skills while the pandemic and the virtual platform should not be a barrier for teaching in perinatal emergencies. A hybrid method of teaching is perhaps the next evolution as non-complex skills can be taught virtually while selected complex skills can be focused on-site and this remains to be evaluated in the near future as we continue to embrace the future.

S13B: Examination of The Placenta - Training the Trainees

Tan Geok Chin

Placenta has been described as the “diary of pregnancy”. Examination of placenta gives a glimpse into the adverse events that have occurred during the intrauterine life, and provides information for both mother and neonate well-being. A quick examination of placenta at labour room could provide information to decide whether it should be assessed further by a perinatal pathologist. Placental examination provides information on the possible causes of poor pregnancy outcomes such as preterm delivery, intrauterine growth restriction, stillbirth and neonatal death, recurrence miscarriage, hypoxic ischaemic injury as well as assessment of severity and confirmation of infection and underlying maternal medical diseases. Various pathologies can arise in the placenta, they can be broadly classified into umbilical cord lesions, vascular lesions, maternal uteroplacental insufficiency, inflammation and neoplasia. Some of the usual cord abnormalities such as hyper coiling and supercoiling are often overlooked. These lesions could result in adverse perinatal outcomes in the form of infection, vascular thrombosis, fetal growth restriction and fetal mortality. Other less common cord lesions such as stricture and knot should also be identified. The presence of small nodules over the fetal surface of the placenta is a tell-tale sign of oligohydramnios, lung hypoplasia and renal abnormalities. In conclusion, placenta histopathology examination is essential to support the management of mothers and babies at the postnatal period.

S13C: Teaching Midwifery - From Obstetric Simulation to Real World Practice

Lesley Kuliukas

Simulation in a safe environment has been demonstrated to improve clinical skills and enhance the learning experience. In order to transition from simulation to real world practice, midwifery students benefit from low and hi fidelity resources and professional expertise to be able to learn and practice vital skills. Within the Master of Midwifery course at Curtin University in Western Australia, students participate in many episodes of simulation throughout the course from skills development, e.g. vaginal examination, to full scale scenarios with actors or simulation manikins, e.g. postpartum haemorrhage. The level of simulation in these education experiences enables a close-to-reality situation as real equipment is used and the area is set up appropriately as either a hospital room or a woman's home. The actor wears a 'birthing suit' which has been designed to allow for vaginal examination, postpartum haemorrhage, managing cord prolapse, birthing of a shoulder dystocia and breech vaginal birth. The scenarios are stories based on real situations with hospital medical records, name labels and charts being used for the students to refer to and document their care.

It is important for students to be able to transition their skills to the clinical area, which is best achieved with interspersed blocks of clinical placement, in which students are allocated a preceptor midwife on a daily basis and a clinical facilitator who oversees the entire placement. The clinical facilitator is aware of each student's specific clinical learning objectives which build on their in-class simulation and skills practice. Any gaps in knowledge are addressed with individualised education in the clinical area so that the student feels confident when attending women for episodes of care where they are able to put their learning into practice.

SYMPOSIUM 14:

Saving babies - Rescuing strategies

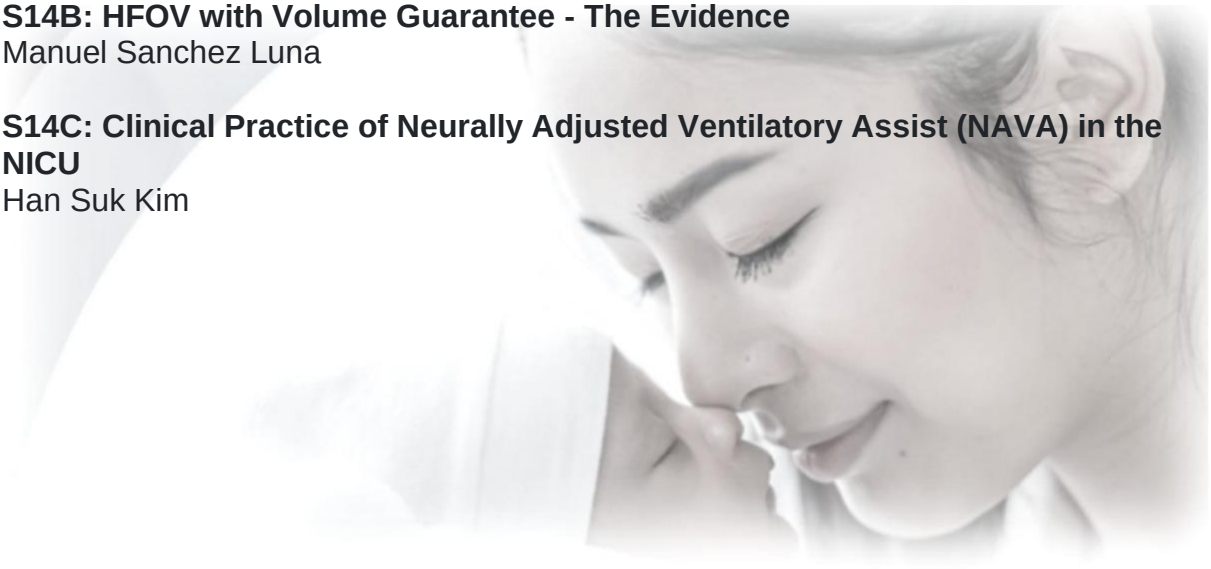
27th August 2022, Saturday

Chairperson: Azanna Ahmad Kamar

S14A: Can't Intubate, Can't Ventilate - What Next?
Hugh Simon Lam

S14B: HFOV with Volume Guarantee - The Evidence
Manuel Sanchez Luna

S14C: Clinical Practice of Neurally Adjusted Ventilatory Assist (NAVA) in the NICU
Han Suk Kim



S14A: Can’t Intubate, Can’t Ventilate - What Next?

Hugh Simon Lam

Intubation is a core skill that allows a neonatal resuscitation provider to control the airway and more effectively oxygenate and ventilate a newborn infant in cardiopulmonary failure. When intubation and ventilation are indicated, but is technically difficult, the time delay can result in rapid deterioration. It is important for resuscitators to have alternative techniques to control a newborn infant’s airway at their disposal. In this lecture these techniques will be discussed.

S14B: HFOV with Volume Guarantee - The Evidence

Manuel Sanchez Luna

The knowledge that the ventilator induced lung injury (VILI) in premature Newborn infants with respiratory failure can trigger Bronchopulmonary Dysplasia (BPD) modified recently the respiratory support applied to these population to a gentler and a less invasive mechanical ventilation, and the combination of initial lung stabilization with early surfactant therapy decrease the most severe forms of BPD.

But in some cases, it is still needed to intubate and use invasive mechanical ventilation. In this situation, the use of High Frequency Ventilation (HFV) has been proposed as an alternative to conventional ventilation from 1970s, as this technique can be beneficial due to its efficacy to recruit a collapsed lung and washout more CO_2 with less lung trauma. Although HFV can reduce the incidence of VILI and BPD, due to the use of different protocols, devices and clinical situations, the medical evidence of the potential benefits of the elective use over CMV is low.

More recently, the use of a well-defined lung recruitment protocols with a high lung-volume strategy and the possibility of measuring and controlling in a very precise manner the high frequency tidal volumes (VThf) during HFV with new ventilators offers a new alternative.
Also, measurement of the VThf can be an important advantage for a better control of HFV, as there is a narrow correlation of the VThf and the CO_2 washout.

So as today it is possible to decrease VThf during HFV by fixing it with the VG, CO_2 washout can be maintained constant by increasing the frequency. This effect in the lung was recently demonstrated in a neonatal animal model of RDS where the use of an approach of very low VThf at high frequencies produced a lung protective effect by a lower histologic damage score. This new strategy has been demonstrated to be feasible in newborn infants with respiratory failure, even extremely immature infants.

In our experience and using this new strategy, of an earlier use of HFOV+VG combined with the use of higher frequencies and lower tidal volume is associated to an increase in survival without bronchopulmonary dysplasia in immature infants.

S14C: Clinical Practice of Neurally Adjusted Ventilatory Assist (NAVA) in the NICU

Han Suk Kim

Neurally adjusted ventilatory assist (NAVA) is a new ventilatory mode that allows the patient to synchronize spontaneous respiratory effort via the detection of an electrical signal from the diaphragm muscle. By utilizing the electrical activity of the diaphragm (EAdi), NAVA can synchronize mechanical ventilatory breaths with the patient's neural respiratory drive and proportionally support this drive. Theoretically, by maintaining spontaneous breathing and improving the patient-ventilator interaction, NAVA may be able to prevent premature lung damage by avoiding high-pressure or high volume support and providing more physiologic mechanical ventilatory support.

Neurally adjusted ventilator assist (NAVA) was introduced to our unit via crossover-RCTs to assess its safety and physiological effects. First, mechanically ventilated preterm infants were randomized to crossover ventilation with NAVA and SIMV-PS for 4-hour each to determine the physiologic effects of NAVA (J Pediatr 2012). Peak inspiratory pressure (PIP), work of breathing, and peak-EAdi with NAVA were lower. Calculated TV to peak-EAdi ratio and PIP to peak-EAdi ratio were higher with NAVA. Second, we conducted another crossover-RCT to compare non-invasive NAVA (NI-NAVA) and NI-PS on patient-ventilator synchrony(ADC-F&E 2015). Maximum-Edi, swing-Edi and PIP were lower during NI-NAVA. All types of asynchronies and Asynchrony-index were reduced with NI-NAVA. In our unit, intubated-NAVA has been mainly applied for infants with higher and/or prolonged ventilatory support. Our cohort studies showed NAVA 1) improved ventilator variables and blood gas values in infants with BPD (PCCM. 2016) and 2) reduced cyanotic episodes and sedatives and dexamethasone uses for infants on prolonged mechanical ventilation (Pediatr Int. 2017). We have used NI-NAVA as a weaning mode from intubated ventilation. Our pilot-study suggested that NI-NAVA might have advantages in reducing extubation-failure compared to nCPAP (BMC Pediatr. 2019) and we has conducted an RCT to determine the clinical advantage of NIV-NAVA compared to nCPAP after extubation in preterm infants (NCT02590757).

SYMPOSIUM 15:

Preventing Birth Injuries

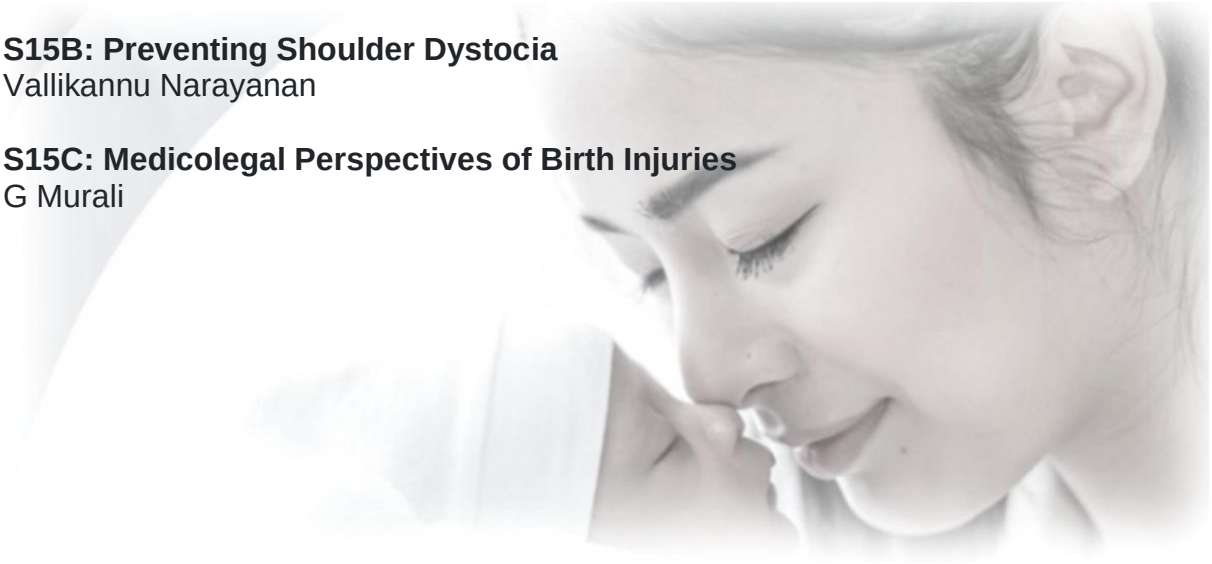
27th August 2022, Saturday

Chairperson: Buvanes Chelliah

S15A: Assisted Vaginal Birth for the 21st Century
Tim Draycott

S15B: Preventing Shoulder Dystocia
Vallikannu Narayanan

S15C: Medicolegal Perspectives of Birth Injuries
G Murali



S15A: Assisted Vaginal Birth for the 21st Century

Tim Draycott

Operative vaginal birth is at a tipping point: there have been eulogies for what has been deemed a redundant procedure in the face of rising Caesarean Section (CS) rates and falling OVB rates, but these are premature. Caesarean section is not without consequence, particularly in the 2nd stage of labour, and skilled, safe assisted vaginal birth remains a life saving option that should be available for women globally.

There is no universal best option to expedite birth in the 2nd stage of labour and best care requires accurate clinical assessment, supported decision making/personalisation of care, skilled use of instruments, anticipation of potential complications, with good communication.

There have been recent developments with device innovation, training, and strategies for implementation at scale that provide opportunities to both improve outcomes and reinvigorate an essential skill that can save mothers' and babies' lives across the world.

S15B: Preventing Shoulder Dystocia

Vallikannu Narayanan

The incidence of shoulder dystocia is 0.6% to 1.4% of all vaginal deliveries. This incidence has risen over the last decade, largely due to the almost epidemic national increase in maternal obesity, a major risk factor for foetal macrosomia. The rise in incidence could be due to improved awareness and proper documentation that has increased among clinicians as well.

It is one of the Obstetric emergencies that we as Obstetricians face our clinical practice. As Clinicians we know what shoulder dystocia is and what we should do when one happens. But can we prevent it from happening. It is still something that many of us cannot identify antenatally. One of the reasons being shoulder dystocia does not happen only with Diabetic or macrosomia foetus. It happens even in a normally weighing foetus.

Hence, I present in this lecture the risk factors and how we could try to prevent shoulder dystocia.

S15C: Medicolegal Perspectives of Birth Injuries

G Murali

The talk discusses the medico-legal aspects of birth trauma. In essence the law governing birth related trauma is similar to the law with respect to other aspects of medical law. Briefly, the Bolam Test which is essentially that the body of professionals themselves were the best people to determine the standard of care still holds true in areas concerning the dispersion of medical therapy, but with regards to disclosure related to treatment, complications has now shifted towards information which a prudent patient would consider important in making a decision.

The talk also includes the medico-legal aspects of birth defects, an area where litigation has been rapidly increasing and the laws that govern this area of perinatal medicine

SYMPOSIUM 16:

Perinatal Mortality

27th August 2022, Saturday

Chairperson: TP Baskaran

S16A: The Fetal Autopsy – Why, When & How
Lata Srinivasan

S16B: Progress in Stillbirth Prevention - International Perspectives
Jason Gardosi

S16C: Medicolegal Concerns for Investigation After Death
Marta Cohen

S16C: Medico Legal Concerns for Investigation After Death

Marta Cohen

Medicolegal issues may arise in cases involving:

a) Intrapartum death and issues of medical negligence

Fetal death may occur before the beginning of labour (antepartum) or during labour (intrapartum). Some babies die in the neonatal period as a consequence of intrapartum asphyxia, trauma or infection. In antepartum intrauterine death (IUD) the fetus will generally have evidence of gross maceration and histological autolysis. Intrapartum death occurs once labour has started. In general, the stillborn has no signs of maceration, thus indicating that death occurred within approximately 12 hours of delivery.

Severe birth trauma is now infrequent due to improved obstetric care, and most cases are associated with difficult deliveries. Many of the factors that predispose to intrapartum asphyxia increase the risk of birth trauma. Asphyxia itself is a predisposing factor for trauma and sometimes it may be difficult to decide whether asphyxia or trauma was the main cause of death. The other main predisposing factors are instrumental delivery, malpresentation, obstructed or prolonged labour, feto-pelvic disproportion, macrosomia, some fetal abnormalities and epidural anaesthesia.

b) Concealed pregnancies and neonaticide.

When investigating concealed pregnancies, it is mort relevant to consider developmental, macroscopical and histological features that can help the pathologist to estimate: i: fetal age; ii: time elapsed between intrauterine death and delivery; iii: stillbirth versus born alive (it had a separate existence). Assessing at post mortem whether an infant was alive at the time of delivery may be difficult, particularly if there has been a delay in retrieving the body, or if it has been affected by the environment (i.e.: temperature, water immersion, damaged by predatory fauna, etc.).

Infanticide should be considered and analysed in the context of the particular circumstances of each case. The most common methods of infanticide are smothering, strangulation and head injury. The face and neck should be carefully inspected in search of injuries, bruises, and/or ligature marks. It should be noted that marks, abrasions and focal bruising may take place during the extraction process in an unattended delivery and may not indicate inflicted injury, and that petechiae and retinal haemorrhages are very common finding in non-complicated delivery.

SYMPOSIUM 17:

Ethical Decisions in Perinatal Mortality

28th August 2022, Sunday

Chairperson: Neoh Siew Hong

S17A: Tinier and Tinier - Moving Targets for Definition of Viability
Brian Carter

S17B: Lethal No More – Saving Babies with Multiple Anomalies
John Lantos

S17C: Losing to Save - Termination of Pregnancy
Zaleha Abdullah Mahdy

S17D: Justice in Providing Maternal Somatic Support
Azanna Ahmad Kamar

S17A: Tinier and Tinier - Moving Targets for Definition of Viability

Brian Carter

With the passage of time and increased availability of technology to support the extremely premature infant, recent decades have seen the “edge of viability” move from 28 completed weeks gestation to 22 completed weeks gestation. But defining *viability*, per se, remains a constant: that gestational age at which the fetus, newly born, can reasonably be expected to survive outside of the womb with technological assistance and have a reasonable chance at survival without severe impairment. The ambiguity that exists across countries may be determined by legal definitions, health care access and provision – including its funding, those clinical conditions that influence why extremely preterm birth is happening, and personal or philosophic attitudes of clinicians. In this presentation each of these variables will be addressed.

S17B: Lethal No More – Saving Babies with Multiple Anomalies

John Lantos

The treatment of babies with complex congenital anomalies has changed over the last decades. With the advent of sophisticated life-support technology, many anomalies that were once considered to be “lethal” or “incompatible with life” are no longer uniformly fatal. Questions arise, then, about the benefits and burdens of treatment when treatment requires long stays in the ICU, is expensive and the outcome is uncertain. In this presentation, I review the history of debates about treatment of myelomeningocele and discuss the implications for other complex congenital anomalies.

S17C: Losing to Save - Termination of Pregnancy

Zaleha Abdullah Mahdy

Termination of pregnancy for maternal medical indications, more often than not, represents a failure of contraceptive advice. This figure may be as high as beyond 50%, and to make matters worse, contraceptive coverage post-abortion may only be 75%, far below 100%.

Most countries in the world legalize termination of pregnancy for maternal medical indications, and even for fetal anomalies up to a certain gestational age. This prevents the potential of creating medical litigations such as wrongful pregnancy, wrongful birth, and wrongful life. From the religious point of view, Islam the official religion of Malaysia, allows termination of pregnancy within certain limits.

Careful judgment in good faith to terminate certain pregnancies help save maternal lives, and physical and mental health, in order to restart all over again with a new conception, for example in the case of unanticipated severe preeclampsia with complications, and women with previously undiagnosed medical conditions such as correctable heart defects.

Preconceptional counselling and effective contraception play a crucial role in eliminating the need for such terminations, and should be emphasized, both on members of the public and members of the medical fraternity who care for such women.

S17D: Justice in Providing Maternal Somatic Support

Azanna Ahmad Kamar

Brain death that occurs during pregnancy further compounds the intricacy and complexity of ethical decision-making in brain-dead patients - legally dead, with a living being within. The scarcity of clinical guidelines and the uncertainty of fetal outcomes may result in unfavourable decisions, and hence, injustice for the woman, her baby, and the family. The decision to provide maternal somatic support (MSS) also known as maternal physiologic or corporeal support, which prolongs the state of pregnancy in a legally dead patient, requires multidisciplinary team input, in view of the vagueness of the science, the prognostic uncertainty of fetal survival, its outcomes, as well as its medicolegal and social implications. Prognostic factors for fetal survival include the latent period between the gestational age at diagnosis of brain death to the proposed delivery date, the fetus' biophysical profile or associated complications, maternal medical complications, the level of maternal or neonatal intensive care support that can be provided, and the parameters or indices obtained from fetal monitoring procedures.

Despite the need for consideration of justice for the mother, baby and family, I argue that justice in this situation should be first upheld from the viewpoint of the person with the highest stakes, that is, the baby. Although the in-utero fetus is said to have not achieved sufficient "personhood" nor have any legal rights, the baby's "rights to live" or being "preserved" is argued to be elevated as a living being within a legally dead person, being a just cause for prolonging the state of pregnancy. Hence, omitting MSS may be viewed as preventing the baby from existing and removing his/her rights to live. Providing MSS may however be unjust, as its provision can cause suffering or harm to a body, prevent timely burial after the declaration of death, cause great emotional distress to a grieving family, and result in higher use of resources by directly causing a shortage of critical beds.

The best interest of the baby can also be the driving factor for omission (termination of MSS), or commission (continuation of MSS). For example, the omission of MSS may be justifiable in the baby's best interest as there is an increased chance of total permanent disability of the baby, or in the mother's best interest where the observed natural decay of the state of the body results in obvious suffering, or, if the proposed delivery date is beyond the capability of either or of both the maternal and neonatal intensive care units. Each indication should be carefully spelled out by upholding the infant's best interests and by balancing the state of the mother to ethically justify the need to provide MSS. In conclusion, the desire and motivation to "save the baby" should be viewed as whether justice is served, by first and foremost upholding the interests of the baby, followed by that of the mother, the family, and the available resources.

SYMPOSIUM 18:

New World Perinatal Science & Innovations

28th August 2022, Sunday

Chairperson: Hamizah Ismail

S18A: EXIT Procedure – An Update
Foong Yen Lim

S18B: In-utero Myelomeningocele Repair
Tuangsit Wataganara

S18C: Targeting the Inflamed Lung & Sepsis - Use of Human Amnion Epithelial Cells
Atul Malhotra

S18D: Fetoscopic Laser Ablation for Monochorionic Twin
Suresh Seshadri

S18A: EXIT Procedure – An Update

Foong Yen Lim

Ex Utero Intrapartum Treatment or EXIT developed at UCSF was first reported in 1995. Since, the procedures have evolved and expanded for a much broader indication. We will review the principles of EXIT, its application in selected indications, and procedures on placental support (POPS).

S18B: In-utero Myelomeningocele Repair

Tuangsit Wataganara

Myelomeningocele (MMC) is the most severe form of spina bifida, and the most common congenital anomaly of the central nervous system (CNS). MMC is associated with lifelong physical and cognitive disabilities including neurogenic bowel and bladder, paralysis, hindbrain herniation, hydrocephalus, motor and sensory deficits, and neurodevelopmental problems. MMC repair can be performed in the prenatal or postnatal period to ameliorate the associated disabilities and complications. Preliminary data from animal studies consistently showed improvement of hindbrain herniation, which led to the initiation of the Management of Myelomeningocele Study (MOMS) to compare the safety and efficacy of prenatal repair to that of the standard postnatal repair in 183 infants. Prenatal MMC surgery using an open-hysterotomy approach was proven to improve outcomes such as need for shunting, hindbrain herniation, and motor function at a cost of risks to the fetus and the mother.

Initially, in-utero MMC repair was proposed after sequential ultrasounds showed (1) progressive damages to the functional (not necessarily anatomical) levels of the central and peripheral nervous system, (2) worsened hindbrain herniation and hydrocephalus, and (3) reduced fetal limb movement. Lately, candidates for prenatal MMC repair may opt for alternative approaches including (1)total percutaneous fetoscopic, (2) laparotomy-assisted fetoscopic, or (3)mini-laparotomy approach, which has been associated with similar outcomes for children and may decrease the procedure-related maternal risks. Non-medical factors need to be considered by the families prior to making medical decisions between prenatal and postnatal MMC repair include the religious and spiritual beliefs, finances, family values and planning, social support systems, and ability to care for the infant long term prior to physician consultation; all of which may have a significant impact on their day-to-day lives. There are still controversies in the following areas; (1) adjunctive uses of in-utero stem cell therapy, (2) roles of early vs late repair, (3) roles of watertight repair, and (4) phenotyping spina bifida in the fetal surgery era.

S18C: Targeting the Inflamed Lung & Sepsis - Use of Human Amnion Epithelial Cells

Atul Malhotra

Premature birth continues to be a major cause of mortality and morbidity in newborn babies around the world. Bronchopulmonary dysplasia (BPD) or preterm chronic lung disease is a common complication of very preterm, especially extremely preterm infants (born less than 28 weeks gestation). Inflammation is a key player in the development of BPD, and current strategies to target inflammation and hence reduce BPD in preterm infants is limited to postnatal steroids. Unfortunately, steroids are associated with number of adverse effects including deleterious effects on the developing brain. Human epithelial cells derived from the amnion lining of the placenta offer a ready source of low immunogenic, pluripotent cells with strong anti-inflammatory properties, which have been shown to reduce lung injury in preclinical models of adult and neonatal chronic lung disease. Our group at Monash University and Hudson Institute conducted the first-in-human trial of human amnion epithelial cells (hAECs) in preterm infants with established BPD a few years ago (1). We showed that at low doses, hAECs were well tolerated and safe when administered intravenously to six preterm infants. Two-year follow-up studies of these infants confirmed long term safety of hAECs in this group (2). We then commenced a dose-escalation study of hAECs in preterm infants at high risk of BPD, in the second or third week of life to prevent BPD (3). Whilst this dose escalation study is still recruiting, we have learnt some important lessons. By and large, hAECs are well tolerated by preterm infants when administered intravenously in the first few weeks of life. hAECs tend to stick to plastic, including infusion lines and syringes and accordingly, we have optimised the protocol for cell infusion of this cell product (4). This ensures that optimal doses of cells are delivered to the patient every time and cell loss during administration is minimised. We have also observed that the preterm pulmonary vasculature is sensitive and caution has to be exercised in the administration of these cells in certain specific conditions (infants with significant pulmonary hypertension, a common accompaniment of preterm lung disease/BPD). hAECs hold promising prospects for the treatment of the inflamed lung and sepsis, and the completion of ongoing studies will inform larger trials of this exciting therapy.

SYMPOSIUM 19:

Therapeutic Drifts In Perinatology

28th August 2022, Sunday

Chairperson: Cheong Shu Meng

S19A: Antenatal Steroids - Too Much, Too Little or Just Nice?
Alan Jobe

S19B: Tiny yet Mighty - Care of Extremely Preterm Infants
Satoshi Kusuda

S19C: Tiniest Babies' Amazing Race - The Artificial Placenta
Takushi Hanita

S19D: Therapeutic Drifts in Hypoxic Ischaemic Encephalopathy
Alistair Gunn

S19B: Tiny yet Mighty - Care of Extremely Preterm Infants

Satoshi Kusuda

Although the mortality rate among extremely preterm infants has been improving over time, morbidities among them are not reduced to an acceptable level yet. There is also a variation in the limit of viability, use of antenatal corticosteroid, choice of delivery mode, initiation of resuscitation, NICU care, and follow-up of survivors among extremely preterm infants. These variations can be attributable to the lack of a standardized approach in care based on strong evidence proved by well-designed clinical trials. Therapeutic drifts exist there.

There are several reasons why clinical trials were not sufficiently performed until recently. The major reason was due to the high mortality rate. If the majority of infants enrolled in clinical trials died, it would be very difficult to prove the benefit of new treatment due to high background noise. Therefore, most practices in NICU for extremely preterm infants have been developed by clinical experiences rather than randomized clinical trials. Accumulated realistic experiences from the front line of NICU care have provided in a way strong support for clinicians. In fact, as mentioned above, the current mortality rate among extremely preterm infants has been declining and reached about 10% by virtue of available clinical knowledge. In this sense, we should appreciate the thoughtfulness and tremendous efforts of many predecessors in modern neonatal medicine.

However, in order to achieve further improvement in outcomes of extremely preterm infants, basic and translational research which could fill the current knowledge gaps and new drug/device development in neonatal medicine are mandatory. Since 1980 when Prof. Fujiwara introduced pulmonary surfactant therapy for infants with respiratory distress syndrome, only limited interventions were studied and developed for the care of extremely preterm infants. Now when the mortality rate among extremely preterm infants has decreased enough, it is the most suitable time for introducing innovative care into our NICU through evidence-based medicine. For this purpose, international collaboration is essential because clinical trials involving tiny infants are not easy, even for countries with advanced neonatal care.

S19C: Tiniest Babies' Amazing Race - The Artificial Placenta

Takushi Hanita

Despite significant progress in neonatal intensive care, morbidity and mortality of extremely premature infants is still high. This is partially because urgent transition of the respiratory and circulatory systems from fetal to neonatal life is challenging for premature infants. Therefore, to avoid this urgent transition, treating extremely premature infants as fetuses using artificial placenta is an appealing option. The first experiment of artificial placenta was reported no less than 65 years ago. Since then, many researchers in the world have been working on developing artificial placenta. In our laboratory at Tohoku University Hospital, collaborating with the University of Western Australia, we have been working on the artificial placenta project for 15 years, mainly focusing on the application for the extremely preterm fetuses. Recently, we reported that our artificial placenta system could be applied on the extremely preterm ovine fetuses weighing ~800g, equivalent to ~25 weeks in human. However, there seems to be many problems remaining to overcome for the clinical trial. In this presentation, I would like to introduce our current results and future directions.

S19D: Therapeutic Drifts in Hypoxic Ischaemic Encephalopathy

Alistair Gunn

Therapeutic hypothermia (TH) is now well established to improve intact survival after neonatal encephalopathy (NE). However, since the completion of the randomized controlled trials there has been substantial therapeutic drift because many specific situations could not include in the trials. Should we cool late preterm newborns with NE? Is cooling beneficial for mild NE? Is cooling for 72 hours optimal, or should we cool for longer? Will either milder or deeper hypothermia be effective? Why was TH not effective in the HELIX trial? In this presentation I will dissect the underlying pathophysiological principles that can guide practice and future research.

SYMPOSIUM 20:

Saving 2 Lives - Rescue Strategies

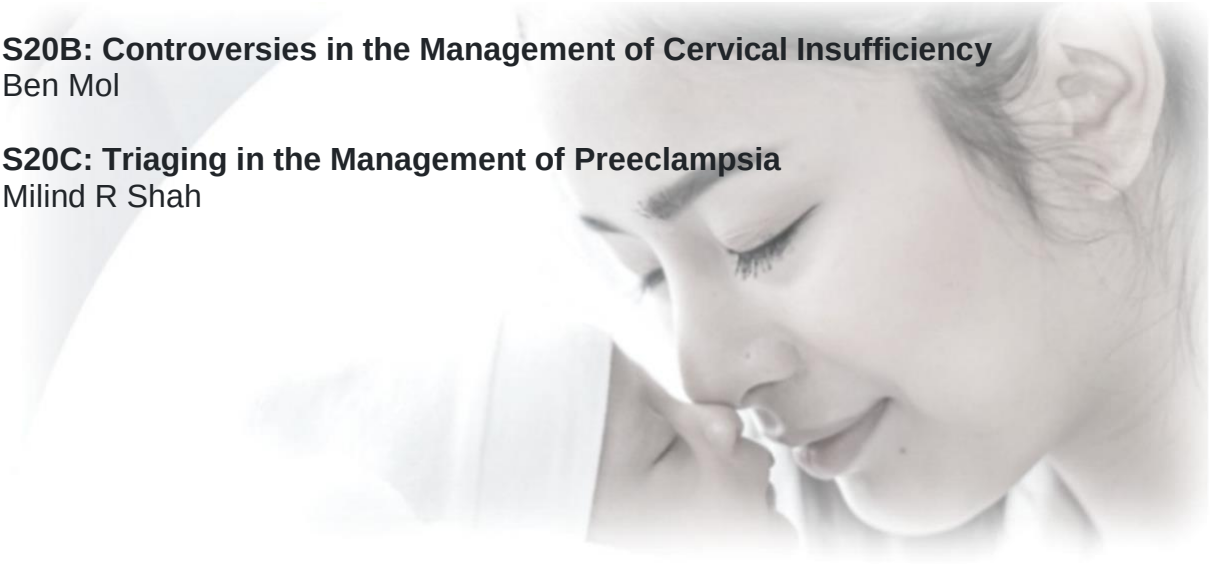
28th August 2022, Sunday

Chairperson: Hamizah Ismail

S20A: Treatment of Postpartum Bleeding in Japan
Jun Takeda

S20B: Controversies in the Management of Cervical Insufficiency
Ben Mol

S20C: Triaging in the Management of Preeclampsia
Milind R Shah



S20A: Treatment of Postpartum Bleeding in Japan

Jun Takeda

Critical obstetrical hemorrhage refers to obstetrical bleeding that is life-threatening for pregnant women. It has long been the most frequent cause of maternal death in Japan; however, in recent years, the number of maternal deaths has been declining due to various efforts such as registration of maternal death, cause analysis, and revision of “Japanese Clinical Practice Guide for Critical Obstetrical Hemorrhage”. For its management, it requires intensive team management including general management, blood transfusion management, and hemostasis treatment. Balloon tamponade is recommended as a first line mechanical hemostasis method because of its minimal invasiveness. The next option would be compression sutures. Since there are various methods for compression suturing, understanding its characteristics and choosing the appropriate method is important. Arterial embolization would also be an option that has been widely used because of its high hemostatic effect, but it is difficult to respond for 24 hours depending on the facility. As a pitfall, vasospasm may be accompanied when blood pressure is not stable, hence rebleeding occurs in some cases as blood pressure rises after achieving temporary hemostasis. In addition, there are reports of infertility and uterine rupture, so careful judgment is required rather than doing it easily. Hysterectomy would be performed only when bleeding does not stop even with these methods, but it should be avoided when vital signs and coagulation function are unstable. The concept of damage control, which stabilizes vital signs and coagulation function by temporarily suppressing bleeding and transfusing blood containing a high concentration of coagulation factors, is important.

S20B: Controversies in Management of Cervical Insufficiency

Ben Mol

Preterm birth (PTB) is considered the leading cause of neonatal mortality and morbidity, both in women with singleton pregnancies and women with a multiple pregnancy. The majority of women delivering preterm do so after spontaneous preterm birth.
While the treatment of women with threatened preterm birth with tocolysis is effective, the cornerstone of effective management of preterm birth is prevention.

For spontaneous preterm birth, progesterone is the cornerstone of prevention, with cervical cerclage and cervical pessary as alternatives. Cervical cerclage is used in women with a typical history of cervical insufficiency, i.e. the spontaneous loss of a pregnancy without contractions.

Randomised clinical trials have learned us a lot in recent years. We know now that any preventative treatment (progesterone or pessary) is only effective in women with a short cervix, defined as <25 or <30mm. Also, pessary seems to be more effective, but pessary might have additional value specifically in nulliparous women and women with a twin pregnancy. In my lecture, I will discuss the available evidence on the topic.

S20C: Triaging in the Management of Preeclampsia

Milind R Shah

Disease of many theories, known from centuries back, Preeclampsia is an enigmatic condition of pregnancy, can't predict, can't prevent, can't treat absolutely. There are controversies from definition to conclusion. Hypertensive disorders of pregnancy are responsible for significant maternal and perinatal morbidity. Hypertensive disorders of pregnancy complicate approximately 10% to 17% of all pregnancies. Approximately 2 – 3% of PE cases lead to hypertensive crisis. It is the second leading cause of maternal mortality after PPH. Hypertension during pregnancy is responsible for 17% of maternal deaths in India. Approximately 1/3 of hypertensive disorders in pregnancy (HDP) are due to chronic hypertension and 2/3 are due to gestational hypertension– preeclampsia. The spectrum of the disease ranges from mildly elevated blood pressures with minimal clinical significance to severe hypertension and multi organ dysfunction.

Latest classification of hypertensive disorders of pregnancy includes 1.Chronic hypertension 2.Pre eclampsia –eclampsia 2.Superimposed preeclampsia on chronic hypertension 4.Gestational hypertension. Classification of severity is primarily based on the level of blood pressure and the presence of proteinuria, clinicians should be aware of the potential involvement of other organs when assessing maternal risk, including placental disease with fetal manifestations. Ambulatory management or outpatient treatment is appropriate for Gestational hypertension without severe features or preeclampsia without severe features whereas inpatient management is appropriate for severe preeclampsia or poor adherence to monitoring recommendations. Delivery is recommended for women with preeclampsia if they have reached 37 weeks gestation or if they develop • Repeated episodes of severe hypertension despite maintenance treatment with 3 classes of antihypertensive agents • Progressive thrombocytopenia • Progressively abnormal renal or liver enzyme tests • Pulmonary edema • Abnormal neurological features, such as severe intractable headache, repeated visual scotomata, or convulsions • Non reassuring fetal status. While choosing antihypertensive one should take into account familiarity of that drug to clinician, which preserves GFR and renal blood flow,, with few or no drug reactions, little or no potential for exacerbation of co-morbid conditions, rapid onset and offset of action

Minimal hypotension overshoot and with minimal need for continuous BP monitoring and frequent dose titration. While managing PE, emphasis on correct BP recording, immediate & appropriate action if there is increased BP, close vigilance on various tests for maternal and fetal well being, and timely intervention to avoid life threatening complications.

SYMPOSIUM 21:

Benefits of Early Detection

28th August 2022, Sunday

Chairperson: Matthew Chong

S21A: Hypothyroidism in Preterm & Ill Babies
Wu Loo Ling

S21B: Expanding the Scope of Non-invasive Prenatal Testing (NIPT)
Shaw Sheng Wen

S21C: Screening for Inborn Errors of Metabolism – A Cost-Effective Method
Carmencita D Padilla

S21D: Pitfalls with Fetal Cardiac Scans – Universal vs Target Groups
Rima Bader

S21A: Hypothyroidism in Preterm & Ill Babies

Wu Loo Ling

Thyroid hormones are crucial for neurogenesis and myelination of the central nervous system during prenatal and postnatal periods. Deficiency results in neurological damage and mental retardation. Preterm and ill babies are at greater risk to develop hypothyroidism compared to the term babies due to immaturity of their hypothalamic-pituitary-thyroid (HPT) axis, limited thyroid gland reserve, inability to handle iodine imbalances. Preterm and ill babies are also at risk to develop non-thyroidal illnesses such as sepsis, IRDS, malnutrition and are likely to be on medications including dopamine, steroids. These co-morbidities and medications may further suppress their HPT axis and secretion of thyroid hormones by the thyroid gland.

At birth, preterm babies have low levels of thyroid hormones in proportion to their gestation. Due to the immaturity of HPT axis, post-natal TSH surge is often blunted or even absent in the very preterm babies. There is a delayed postnatal TSH rise. Recovery of T3, T4 is slow and may take up to 6-10 weeks to reach the level comparable to the term infant. As a result of these dynamic changes, newborn screening using TSH may have a false negative result and miss detecting congenital hypothyroidism in the first week of life. Hence a post-screening strategy is recommended for all preterm and ill babies.

Hypothyroxinaemia is common in preterm and ill babies. It is often transient and normalizes within 6-10 weeks. Thyroxine replacement is controversial as large scale randomized studies are lacking. However current guidelines do not recommend thyroxine replacement as recent studies had shown no beneficial effects in reduction of neonatal mortality, morbidity or improvement in neurodevelopmental outcome in childhood and young adulthood. Moreover, reports from Japan had shown an association of thyroxine therapy with late-onset circulatory collapse in the VLBW infants.

Hypothyroxinaemia in preterm and ill babies should be differentiated from congenital hypothyroidism with delayed TSH elevation and central hypothyroidism which would require thyroxine therapy. Careful evaluation and follow-up is essential.

S21C: Screening for Inborn Errors of Metabolism – A Cost Effective Method

Carmencita D Padilla

Newborn screening is a universally accepted public health program aimed at the early identification of infants who are affected by certain genetic, metabolic, or infectious conditions. The presentation shall highlight the Philippine Newborn
Screening (NBS) program, the factors for the success of the expanded NBS program, and the continuing challenges.

The Newborn Screening Study Group first introduced newborn screening in the Philippines in 1996 with 24 participating hospitals with six (6) conditions being screened. With the initial data and continuous initiatives undertaken, the Department of Health (DOH) recognized the need to ensure nationwide implementation of the program. In 2004, Republic Act 9288 known as the Newborn Screening Act of 2004 was enacted. With the law in place, numerous improvements have been made such as insurance coverage, expanding of conditions screened, participating NBS facilities, and strategies to ensure program continuity. To date, the country is fully implementing the ENBS program in more than 7,000 hospitals with its fees covered by PhilHealth, the national health insurance.

Prior to the enactment of the NBS Act of 2004, research studies have already demonstrated that the benefits of the NBS program versus a do-nothing alternative far outweighs the costs. The Philippine NBS program will not be successful without the support of its partners: the national government, the Department of Health, researchers, and the people. Even with an established and mature NBS program, challenges continue to arise. Early discharge and prompt recall of results, accessibility of information, confirmatory centers, and specialists, adherence to treatment and management, and response to disasters and pandemics may still be improved for better delivery of service and wider screening coverage.

S21D: Pitfalls with Fetal Cardiac Scans – Universal vs Target Groups

Rima Bader

The detection and diagnosis of congenital heart disease in the fetus remains the most challenging component of fetal sonography. Unfortunately, till now the most of congenital heart disease is still being missed in most communities around the world.

The correct diagnosis of congenital heart disease depends on meticulous attention to normal structural detail of the fetal heart with an understanding and recognition of the structural abnormalities of the fetal heart.

Understanding fetal physiology and function throughout gestation adds to the accuracy of detection of structural heart anomalies in the prenatal life. It is worth stating that ultrasound results are greatly operator dependent.

However, ultrasound results remains deeply dependent upon angle of insonation, fetal lie and maternal habitus considerations. Recently most congenital heart anomalies can be diagnosed in the first trimester of pregnancy; with a strong recommendation for a follow up echo around 22 weeks gestation.

Thus, effective detection and precise diagnosis remains time-intensive tasks, requiring patience, training in addition to high-resolution imaging equipment.

ABSTRACTS FOR ORAL AND POSTER PRESENTATION

Abstract ID: A-0006

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

A Case Report: Maple Syrup Urine Disease Encephalopathy

Authors & Institutions:

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Abstract Text:

Maple syrup urine disease (MSUD) is a rare metabolic condition that affects one in 185,000 births of the population, irrespective of gender. It is passed down genetically by autosomal recessive inheritance. The name of the disease takes after the smell of the urine when the serum amino acid, isoleucine, is raised as a result of the defect in amino acid degradation pathway. An increase in branched-chain amino acids such as leucine, isoleucine and valine can cause multisystem disorders if it is left undetected.

We report a case of a newborn male with underlying Glucose-6-Phosphate Dehydrogenase (G6PD) deficiency, who had presented at the 3rd week of life with weight loss, poor feeding and was less active. He was hypotonic and had bradypnoea with unequal sluggish pupils. The reflexes were brisk in his limbs and the anterior fontanelle was tensed and bulging. Maple syrup odor was present in the urine. The blood results showed metabolic acidosis while radio-imaging of the brain revealed cerebral edema. Electroencephalogram (EEG) recording showed the absence of brain activity. Marked elevation in the leucine, isoleucine, valine and allo-isoleucine in the inborn errors of metabolism (IEM) screening was highly suggestive of maple syrup urine disease.

Although MSUD is a rare incidence, it is essential to rule out metabolic cause if the patient is not thriving well. MSUD may be fatal if not treated early, as high branched chain amino acids will accumulate in the body leading to progressive encephalopathy. Early intervention by BCAA-restriction diet and close follow up on nutritional and growth parameters are the mainstay of treatment.

Keywords:

Maple syrup urine disease, encephalopathy, inborn errors of metabolism, branched-chain amino acids

Abstract ID: A-0007

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Non-Immune Hydrops Fetalis: Case series from Sabah Women and Children Hospital

Authors & Institutions:

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Abstract Text:

Introduction:
Hydrops fetalis is a clinical condition characterized by the pathological fluid accumulation in fetal serous cavities, involving at least 2 compartments. Skin edema is often associated with this condition. The basis of the disorder is an imbalance in the regulation of fetal fluid movement between the vascular and interstitial space. Hydrops fetalis is broadly classified into Immune Hydrops Fetalis (IHF) and Non-Immune Hydrops Fetalis (NIHF). The widespread use of anti-D immunoglobulin has resulted in a decline in the incidence of iso-immune fetal hydrops, but an increasing prominence of non-immune causes of this severe and highly lethal condition.

Report:
We hereby report 4 cases of non-immune hydrops fetalis encountered at Sabah Women and Children Hospital (SWACH) in the year of 2021, looking into the different causes for this condition. They were all associated with preterm delivery ranging 30 weeks to 34 weeks. One out of 4 of them were detected antenatally. Out of these four cases the mortality rate was 75%. The average length of stay for the expired cases was around 1 day. One of the cases was discharged home after 85 days of stay in our hospital. The causes of these 4 cases of NIHF were placental chorioangioma, twin-to-twin transfusion syndrome, trisomy 21 and cardiomyopathy.

Conclusion:
The mortality of non-immune hydrops fetalis is still high despite recent advances. It is important to detect and determine the cause of the non-immune hydrops fetalis in order to administer optimal multidisciplinary management during the perinatal period. In view of the high morbidity and mortality rate, parental counselling should be initiated early.

Keywords:

Placental chorioangioma, Twin-to-twin transfusion syndrome, Trisomy 21, Cardiomyopathy

Abstract ID: A-0008

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Obstetrics	Case Report

Abstract Title:

Thyrotoxicosis during pregnancy diagnosed from thrombocytopenia.

Authors & Institutions:

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Abstract Text:

Introduction:
Thyrotoxicosis is a severe condition with the potential to develop into a thyroid crisis, which can be triggered by delivery. However, because universal screening for thyroid dysfunction has not been recommended, it is very difficult to diagnose in asymptomatic pregnant women. Although thrombocytopenia has been linked to hyperthyroidism, there have been few reports of pregnant cases. Here we report a successfully managed thyrotoxicosis case during pregnancy diagnosed from thrombocytopenia detected in routine prenatal visit.

Report:
A Japanese primiparous pregnant woman with well-controlled gestational diabetes mellitus (GDM) in her 35th week gestation was referred to our hospital due to progressing thrombocytopenia with a platelet count of 7.4x10^{4}/μL. Screening for autoimmune diseases revealed her thyrotoxicosis (TSH 0.008 μIU/mL, FT4 3.36 ng/dL, FT3 7.12 pg/mL, negative for thyroid autoantibodies). Ultrasonography detected a thyroid nodule of 20 mm and hyperperfusion around it, which suggested she was suffering from Graves' disease or Plummer's disease. Her thrombocytopenia seemed autoimmune. Fetal ultrasonography found her fetus to be normal. Multidisciplinary discussion concluded that her condition was at high risk for thyroid crisis at delivery. Antithyroid drug therapy (methimazole and iodine) was started, which successfully stabilized her condition. In the 39th week, a non-stress test recorded a prolonged deceleration, and after failed labor induction she underwent an emergent C-section. She delivered a healthy baby weighing 3,225 g with Apgar scores of 8 and 10 at 1 and 5 minutes, respectively, and normal thyroid function. Her postpartum course was uneventful, and her thyroid function was stable with methimazole at 2 months postpartum. In conclusion, thyroid function tests should be considered in thrombocytopenic pregnant women.

Keywords:

pregnancy, thyrotoxicosis, hyperthyroidism, thrombocytopenia

Abstract ID: A-0009

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

A 2-year analysis on outcome of Infants of Diabetic Mothers (ill babies) admitted to NICU Taiping in 2019-2020

Authors & Institutions:

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Abstract Text:

OBJECTIVE:
To determine the outcome, mainly respiratory and cardiac complications of infants born to mothers with Gestational Diabetes Mellitus and pre-existing Diabetic, and to analyze the differences in outcome according to the type of maternal diabetes and their modes of treatment.

METHODS:
It was a retrospective cohort study. Medical records of neonates who are infants of diabetic mothers (IDM) admitted to NICU for ventilatory support for the period of January 2019-December 2020 were reviewed.

BACKGROUND:
Diabetes is the most common medical complication in pregnancy, affecting about 0.5-5% of all pregnancies. Infants of diabetic mothers are at increased risk of periconceptional, fetal, neonatal and long-term complications such as: diabetic embryopathy, hypoglycemia, hypocalcemia, polycythemia, myocardial hypertrophy and delayed lung maturation.

RESULTS :
A total of 296 IDM babies were admitted to NICU Taiping Hospital from 2019 to 2020 for ventilatory support. Out of these 296 babies, data of 200 babies were analyzed. We observed a mortality rate of 9%. The commonest cause of death was persistent pulmonary hypertension (PPHN) which carried a 66.67% mortality rate. Highest percentage of this death is among the term babies with good birth weight. Term RDS complicated by PPHN contributes to this high rate of mortality in term babies. Infants born to mothers with GDM on diet control have poorer outcomes as compared to GDM on treatment (oral hypoglycaemic agent and Insulin). Significant association was found between various complications in the infants and maternal glycemic control (based on HbA1c levels).

CONCLUSION :
Various complications are seen in IDMs, which consequently increases the morbidity and mortality in these babies. Strict glycaemic control in the mothers, planned pregnancy, proper antenatal care and strict monitoring in babies are required to prevent morbidity and mortality in IDMs.

Keywords:

Gestational Diabetes Mellitus (GDM), Infant of Diabetic Mother (IDM), Persistent Pulmonary Hypertension in Newborn (PPHN), Respiratory Distress Syndrome (RDS)

Abstract ID: A-0010

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

TRPV4 Mutation in Congenital Distal Spinal Muscular Atrophy: A Case Report

Authors & Institutions:

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Abstract Text:

BACKGROUND:
TRPV4 (transient receptor potential vanilloid 4 cation channel) mutation is associated with a spectrum of neuropathies and skeletal dysplasias inherited in an autosomal dominant pattern. It is expressed mainly in bones, skin and motor neurons. Patients affected with TRPV4 mutation can present with congenital or late onset of progressive neuropathy, skeletal abnormalities and respiratory failure. We herein describe a rare case of a neonate with TRPV4 mutation, who had suffered from respiratory failure and neurological disabilities at birth.

REPORT:
We report a female neonate who was born at 37 weeks with a low birthweight of 2.27kg, via an elective lower segment caesarean section for intrauterine growth restriction and breech presentation. Antenatally, the mother had Grave's Disease and was on treatment. A detailed fetal scan done on the 36th week showed excessive scalp hair with lower limb deformities. The baby was born vigorous but was intubated at 15 min of life in view of bradycardia and poor saturation. At birth, the baby was hypotonic and areflexic, with no spontaneous limb movement or facial grimacing. She also had muscle atrophy and arthrogryposis multiplex. Bedside echocardiogram, ultrasound cranium and eye screening were normal. Her creatine kinase was high. There was no family history of neuromuscular or skeletal disorder. Her whole exome sequencing showed a pathogenic missense variant in TRPV4 gene (p.Arg269His). This variant is known to cause autosomal dominant distal neuronopathy, also known as Congenital Distal Spinal Muscular Atrophy. Both parents refused for further family genetic testing. Parents wished for palliative management and withdrawal of care was done on day 11 of life.

CONCLUSION:
Prevalence of the TRPV4 associated conditions has not been well studied in Malaysia. There is a wide spectrum of disorders associated with TRPV4 mutation, although overlap within each other can happen. Genetic studies are necessary to confirm the diagnosis. Management of this condition is mainly supportive and genetic counselling.

Keywords:

TRPV4, Neuropathies, Skeletal Dysplasia, Genetics

Abstract ID: A-0011

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Comparison of Neonatal Outcomes of Small for Gestational Age and Appropriate for Gestational Age Preterm Infants Born at 34 to 36 Weeks Of Gestation

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Abstract Text:

Background:
Small for gestational age (SGA) are known to have higher perinatal morbidity and mortality as well as morbidity risk later in life as compared to appropriate gestational age (AGA) infants. The risk factors for SGA are complex and may be caused by maternal, placental or fetal factors.

Objectives:
To study the risk factors and perinatal complications in late preterm SGA infants.

Methods:
This is a retrospective case control study of late preterm infants admitted over a 2-year period (January 2019-December 2020) in NICU Hospital Sultan Ismail Johor Bahru. The risk factors were analyzed and the frequencies of perinatal complications were compared between the two groups.

Results:
A total of 96 SGA and 229 AGA infants were analysed. The risks of SGA were significantly higher among mothers with pregnancy induced hypertension (aOR: 4.049; 95% CI: 2.263-7.244) and oligohydramnios (aOR 3.628; 95% CI:1.086-12.119). There were no significant differences among the perinatal complications studied but the SGA group achieved full feeding later (p value: 0.018) and had a longer hospital stay (p value: 0.031) compared to the AGA group.

Conclusion: In conclusion, SGA is the result of multifactorial interaction and can cause perinatal complications. By strengthening the perinatal care and monitoring, the complications of SGA can be reduced.

Keywords:

SGA, perinatal outcome

Abstract ID: A-0012

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Glucose Monitoring among Infants of Diabetic Mothers on Treatment Admitted to Special Care Nursery in a Tertiary Center - a Retrospective Study

Authors & Institutions:

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Abstract Text:

Introduction
Neonatal hypoglycemia can lead to long-term neurodevelopmental impairment. Infants of diabetic mothers (IDM) are at high risk of developing hypoglycemia in the immediate hours after birth. Various international guidelines recommend screening of asymptomatic IDM for hypoglycemia.

Objectives
This study aims to determine the incidence of hypoglycemia and to review our local management among IDM on treatment admitted to Special Care Nursery (SCN) in a tertiary center – in order to conclude whether there should be changes implemented to our current practice.

Material and method
This was a single center, retrospective study involving healthy term and late preterm IDM on treatment who were admitted to SCN from 1st May 2021 to 30th September 2021 for blood glucose monitoring. These infants were identified from the admission registry; medical records were then traced and reviewed.

Result
Overall incidence of hypoglycemia from 476 infants was 0.6% (*N*=3). All the three infants' mothers were on combination therapy of insulin and oral hypoglycemic agent (OHA); only one of the three infants had symptomatic hypoglycemia. The median age on admission and first feed given was 38 and 73 minutes of life respectively. Only 24.2% of infants were given their first feeding by one hour of life. First blood glucose was obtained at a mean age of 2 hours. The median number of blood glucose heel pricks done for each infant was 9 (range 3-39) and monitoring was stopped at a median age of 27 hours.

Conclusion
Hypoglycemia incidence was low among this cohort of infants. This needs to be confirmed by a properly designed observational or randomized controlled trial. A local protocol should be designed to standardize blood glucose monitoring with a potential to reduce the number of painful heel pricks.

Keywords:

Hypoglycemia, Infant of diabetic mother

Abstract ID: A-0013

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

A Case Report : Pulmonary Artery Thrombosis in a Newborn with Severe Dehydration

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Abstract Text:

Background:
Pulmonary artery thrombosis in the newborn is a rare occurrence. It is approximately 1 in 40,000 births, with 90% of cases linked to indwelling intra-arterial catheters. Very few cases of spontaneous neonatal pulmonary arterial thrombosis have ever been described.

Case report:
We report a 10-day old baby who was born at term gestation of 38 weeks, presenting to us with a history of watery stools and feeding intolerance. He was critically ill, having 16% weight loss with severe dehydration and was in hypovolemic shock. He required aggressive fluid resuscitation and inotropic support with the initial blood investigation showing acute kidney injury with severe metabolic acidosis. Bedside echocardiogram showed an incidental huge mobile intracardiac mass at the right ventricular outflow tract measuring 0.53 cm^2. Excluding the possibility of cardiac tumors, we initiated unfractionated heparin infusion, followed by low molecular weight heparin for a total treatment duration of 3 months. Serial echocardiogram during admission showed that there was reduction in the size of thrombus and final resolution of it was seen prior to discharge home at day 50 of heparin treatment.

Conclusion:
Neonatal pulmonary artery thromboembolic events are infrequent. However, it can occur in neonates particularly with predisposing factors such as sepsis, dehydration, asphyxia, indwelling central lines, and prematurity. This case highlights the importance of not underestimating dehydration as a cause of thrombosis.

Keywords:

Neonatal , Thrombosis

Abstract ID: A-0014

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Neonatal Tuberous Sclerosis Complex - A case report

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Abstract Text:

Background:
Tuberous sclerosis complex (TSC) is a rare genetic multisystem disorder causing non-cancerous tumours (hamartomas) in the brain, heart and other vital organs. Incidence of TSC is about 1 in 6000 livebirths. Cardiac rhabdomyomas, arrhythmias and cerebral lesions detected on antenatal scans are the major presenting findings in the fetus.

Report:
Here we report a male infant born at term with a presumptive diagnosis of TSC. Fetal scan had demonstrated multiple huge rhabdomyomas and subependymal giant astrocytoma. Postnatal examination and imaging studies confirmed the antenatal scan findings. He did not have clinical seizures but his EEG showed sharp wave discharges over the frontal and temporal region – hence he was started on vigabatrin at Day 7 of life.

Conclusion:
Infants with TSC can be identified early, before the onset of clinical seizures and neurologic sequelae – enabling earlier diagnosis and possibly disease-modifying treatment to improve overall outcome.

Keywords:

TSC, Cardiac rhabdomyoma, SEGA, vigabatrin

Abstract ID: A-0015

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Fatal cases of Urea Cycle Disorders in male infants - A case series

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Abstract Text:

Background
Urea cycle is a cyclical process involved in hepatic removal of ammonia from the bloodstream. Its disorder is an inborn error of urea synthesis leading to hyperammonemia which in turn leads to irreversible neurological deficit and coma. This disorder has a high mortality rate.

Report
Here we report two fatal cases of male neonates with urea cycle disorder.
Baby A was born at term via vacuum-assisted delivery and was complicated with a subaponeurotic hemorrhage which had required treatment with fresh frozen plasma transfusion. He presented in a collapsed state at day 2 of life and had recurrent seizures requiring antiepileptics. Baby B was born at term via spontaneous vaginal delivery and was discharged to mother post-delivery. He was admitted at 13 hours of life for pathological jaundice. He was found to be unresponsive at 65 hours of life. Both infants were ventilated and investigated for possible causes of acute onset of neonatal encephalopathy. Their IEM study confirmed urea cycle defects. Unfortunately, both babies succumbed despite all resuscitative and treatment measures. There were no family history of sudden infant death, recurrent miscarriages or early neonatal death, and they were products of non-consanguineous marriages.

Conclusion
Newborns with Urea cycle defects typically appear well at birth and shortly after can present with non-specific signs and symptom. Thus, IEM should always be included in differential diagnosis of any newborn or infants presented with unexplained overwhelming progressive disease.

Keywords:

Urea cycle disorders

Abstract ID: A-0016

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Newborn Atrial Flutter in Hospital Miri - a case report

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Abstract Text:

Introduction
Atrial flutter is an uncommon cardiac arrhythmia in newborns and infants. It is usually diagnosed on the electrocardiogram with a fast, irregular atrial activity up to 500 beats per minute and no association with structural heart disease in most of the cases. Synchronized cardioversion remains the most effective way in establishing sinus rhythm.

Report
We report a case of a 36 weeks gestation baby born via emergency cesarean section due to fetal tachycardia of up to 210 beats per minute. She was ventilated at birth due to respiratory distress. She started to develop tachycardia at 14 hours of life, ECG has shown supraventricular tachycardia with the presence of P wave and narrow QRS. Echocardiography revealed no structural abnormality. We tried fluid therapy, vagal maneuver as well as anti-arrhythmic medications, including adenosine, amiodarone and digoxin, to which the baby did not respond to. The administration of adenosine resulted in the obvious typical “sawtooth” flutter wave on the ECG. Due to the uncontrolled rate and rhythm, synchronized cardioversion was performed and the rhythm converted to normal immediately. The baby was discharged well after 2 weeks of hospitalization.

Conclusion
Neonatal atrial flutter is a rare type of tachyarrhythmia which has a good prognosis. Synchronized electrical cardioversion may be needed in cases that are not responsive to antiarrhythmic drugs.

Keywords:

Atrial flutter, antiarrhythmic, synchronized cardioversion, tachycardia, sinus rhythm

Abstract ID: A-0017

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Neonatal Neuroblastoma with a Racing Heart: A Case Report

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Abstract Text:

Background:
Neuroblastoma is an embryonal malignancy of the sympathetic nervous system. It is the most common extracranial tumour in infancy. It can occur anywhere along the sympathetic nervous system, including the superior cervical, paraspinal, and celiac ganglia; the majority arise in the adrenal glands. The presentation may vary from asymptomatic or may also be found incidentally from imaging done for other reasons.

Case:
We present a case of thoracic and abdominal neuroblastoma manifesting with supraventricular tachycardia (SVT). A term neonate at 38 weeks gestation was delivered to a mother with an uneventful antenatal history. He was intubated for respiratory distress at birth. Later he developed SVT at 10 hours of life which had required medical treatment. Initial parameters were not suggestive of infection, electrolyte imbalance, or hyperthyroidism. Heart rate remained stable on propranolol. However, a chest x-ray done at day 10 of life for an increase in work of breathing, showed a clear border mass over mediastinum. Bedside echocardiography showed a thoracic mass. A CECT thorax revealed heterogeneous enhancing soft tissue mass at the left lower posterior mediastinum and right retroperitoneal space which was suggestive of a neuroblastoma. The child underwent excision of the tumor, and the HPE had confirmed the diagnosis.

Conclusion:
Neuroblastoma in infancy commonly presents with compressive symptoms. As it is an embryonal neuroendocrine tumor, originating from neural crest progenitor cells, sympathetic symptoms are possible but rare. High suspicion should prompt further diagnostic workup and intervention as early diagnosis yields a better prognosis.

Keywords:

neonatal neuroblastoma, supraventricular tachycardia (SVT), embryonal malignancy

Abstract ID: A-0018

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Congenital Pulmonary Airway Malformation (CPAM) With Recurrent Pneumothorax, A Diagnostic Conundrum: A Case Report

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Abstract Text:

Introduction:
Congenital pulmonary airway malformation (CPAM) is a developmental lung malformation characterized by benign cystic or adenomatoid lung tumors that grow on the terminal bronchioles. The malformation usually occurs sporadically, not hereditary and no association with maternal factors. Infants with this condition may be asymptomatic or can present with hydrops or fetal heart failure, recurrent respiratory infection or pneumothorax..

Case Presentation:
We report a 5-month old baby girl, under our care since birth. She was a term baby intubated at birth for respiratory distress, complicated with persistent pulmonary hypertension of newborn (PPHN) secondary to meconium aspiration syndrome (MAS). She developed recurrent episodes of pneumothorax from day 10 of life, which was initially attributed to MAS. She was ventilated from birth until 2 months old due to recurrent pneumothorax and nosocomial pneumonia. CT Thorax at 1 month old showed right apical pneumothorax and mediastinal emphysema secondary to bronchopleural fistula. Discussion with the paediatric surgical and paediatric radiologist later concluded the possibility of a ruptured CPAM. Child underwent a right upper and middle lobe lobectomy at three months af age. Intraoperative, the right upper and middle lobes appeared emphysematous, with abnormal bullae. Histopathology examination confirmed the diagnosis of CPAM. We weaned her off oxygen on day 16 post-op and the baby was discharged home well.

Conclusion:
CPAM is often misdiagnosed as a persistent and localized pneumothorax. Therefore, CPAM should be considered in neonates with radio-imaging which are compatible with spontaneous or recurrent pneumothorax. Surgery remains the cornerstone treatment of symptomatic lesions and prognosis is excellent.

Keywords:

congenital pulmonary airway malformation, pneumothorax, infant

Abstract ID: A-0019

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

A Case Report of Neonatal Grave's Disease

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Abstract Text:

Neonatal thyrotoxicosis is rare. Most cases are secondary to transplacental passage of thyroid-stimulating immunoglobulin (TSI) from mothers with Grave's disease (GD). The incidence reported in 1-2% of infants born to these mothers. Transplacental passage of maternal thyroid stimulating hormone receptor antibodies (TRAb) binding to fetus Thyroid stimulating hormone (TSH)-receptor on thyroid follicular cells and lead to autonomous thyroid hormone production, can cause in utero and/or postnatal hyperthyroidism. It may last 1-3 months until the maternal TRAb is eliminated from the infant's bloodstream. Even though it is a self-limiting disease, it can be life-threatening and can cause permanent brain damage if the diagnosis and treatment is delayed. We report a female infant who presented with clinical signs of thyrotoxicosis at day 8 of life, with irritability, tachycardia and hyperthermia. She was born to a mother with antenatally undiagnosed Grave's disease but was symptomatic of hyperthyroidism. Her cord TSH level was < 0.01mU/L. Repeated thyroid function test at day 6 of life showed markedly elevated Free T4 (FT4) 66.4pmol/L with suppressed TSH level. She turned euthyroid after a week of Carbimazole. TRAb was detected with a level of 2.35 IU/L, confirming the diagnosis of neonatal GD. In conclusion, thyrotoxicosis should be anticipated in high-risk infants with careful clinical and biochemical surveillance in preventing life threatening events.

Keywords:

Neonatal Grave\\\'s Disease

Abstract ID: A-0020

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

The Outcomes of Neonates with COVID-19 Positive Mothers in University Malaya Medical Centre (UMMC)

Authors & Institutions:

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Abstract Text:

Introduction:
Studies on outcomes of neonates of mothers with COVID-19 are sparse and limited in Malaysia. Given the limited evidence, this study is conducted to explore better evidence-based perinatal care practices.

Objectives:
To determine the outcomes of neonates with pregnant mothers of COVID-19 in University Malaya Medical Centre (UMMC).

Subjects/Patients/Materials:
The study was conducted on 72 pregnant mothers with COVID-19 and 71 neonates in UMMC from January until early December 2021.

Methods:
This is a descriptive cohort study with the data obtained from the medical record and analyzed using the SPSS software.

Results:
There was a total of 72 deliveries with 71 (98.6%) live births and one (1.4%) stillbirth. 48 (66.7%) were term neonates and 24 (33.4%) were preterm neonates. The anthropometric measurement has an average birthweight of 2.793 kg (SD = 0.6333,95% CI = 2.642-2.944), length of 45.814 cm (SD = 3.897, 95% CI =44.885 - 46.744) and head circumference of 32.62 cm (SD = 2.634, 95% CI = 31.993 - 33.249). 28 (39.4%) neonates were in respiratory distress and 19 (26.8%) had neonatal sepsis. Out of 56 neonates with SARS-Cov-2 nucleic acid testing using RT-PCR, one (1.8%) was tested positive on day three of life. Overall, 68 (97.2%) neonates were fit during discharge and two (2.8%) passed away due to other underlying medical issues.

Conclusions :
The average anthropometric measurement showed normal values. There is 1 to 3 percent risk of stillbirth, vertical transmission and neonatal death. The study shows 20 to 40 percent incidence of prematurity, respiratory distress and neonatal sepsis. However, other risk factors should be considered including the sample size and the maternal health throughout pregnancy. The majority of the neonates were fit and well during discharge.

Keywords:

neonatal outcomes COVID-19, vertical transmission COVID-19, birth outcomes COVID-19

Abstract ID: A-0021

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Poster	E-Poster	Obstetrics	Research Study

Abstract Title:

The Incidence of SARS-CoV-2 Vertical Transmission in University Malaya Medical Centre (UMMC)

Authors & Institutions:

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Abstract Text:

Introduction:
Coronavirus disease 2019 (COVID-19) is a highly infectious airborne disease caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2)virus, with high risks of severe infection amongst pregnant women. Although recent recommendations suggest low risk of vertical transmission, the lack of consensus opinion for specific practices, such as mode of delivery, skin-to-skin practice, and breastfeeding, warrant further review of the incidence rates for perinatal SARS-CoV_2 acquisition in the newborns.

Objectives:
- To evaluate the incidence rate of COVID-19 vertical transmission in UMMC.
- To investigate the association of perinatal practices with SARS-CoV-2 vertical transmission.

Methods:
A retrospective cohort study of pregnant mothers with positive SARS-CoV_2 RRT-PCR, and of babies delivered between January to October 2021 was conducted at the University of Malaya Medical Centre (UMMC). The newborns underwent SARS-CoV2 RRT-PCR tests on the first day of life and repeated between days-3 to 5.

Results:
Of 135 COVID positive pregnant women, 32 women were of category-3 COVID or higher, with one maternal death leading to perimortem Caesarean section. Details of 74 babies, including one set of twins, and one stillbirth were analyzed. 72 (97. 3 %) babies tested negative while two were SARS-CoV-2 positive (2.7 %). Both positive cases were delivered to mothers of category 2 COVID-19, via Emergency Caesarean section at 38- and 40-weeks' gestation respectively. They did not receive skin-to-skin, nor were roomed-in following delivery. One baby received mixed expressed breast milk and formula milk, whilst another was on formula feeds from birth till discharge. Infants who were tested negative for SARS-CoV2 were mixed feeding, with two babies roomed in with their mothers from day-3 of life.

Conclusion:
The risk and incidence proportion of SARS-CoV-2 vertical transmission is very low. Transmission risks are not significantly different between perinatal practice norms for those babies affected.

Keywords:

Vertical Transmission of COVID-19

Abstract ID: A-0022

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Polyethylene Cap as an Adjunct in Reducing Admission Hypothermia in Preterm Infants

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Abstract Text:

Background:
Hypothermia is defined as body temperature of <36.5°C by the World Health Organisation (WHO). It has been reported previously that up to 55% of preterm infants had hypothermia upon admission to a neonatal unit. Admission hypothermia in preterm infants has been closely related to multiple morbidities and even mortality. Various adjunctive methods have been studied to reduce the incidence of hypothermia.

Objective:
This study was designed to determine the effectiveness of polyethylene cap as an adjunct to polyethylene body wrap in reducing hypothermia among preterm infants.

Methods:
A prospective study on polyethylene cap as an adjunct in reducing admission hypothermia in all preterm infants below 35 gestational weeks or infants with birth weight less than 1500g admitted to Neonatal Intensive Care Unit (NICU), Tengku Ampuan Rahimah Hospital (HTAR). Syndromic infants or infants with open congenital anomaly lesions were excluded. Infants in both groups were wrapped in polyethylene sheets from the neck downwards immediately after birth without prior drying. A polyethylene cap will be placed immediately in the study group. On arrival to NICU, axillary temperature was taken immediately in the transport incubator, before being transferred out to NICU incubator.

Results:
90 infants included in this study. Median admission temperature to NICU in the infant group with polyethylene cap was higher (36.4°C vs 36.2 °C). Even the difference was statistically not significant (P=0.20), however there was lower incidence of admission hypothermia in the infant group with polyethylene cap (25/45; 55.6%) as compared to the infant group without polyethylene cap (31/45; 68.8%).

Conclusion:
Usage of polyethylene cap as an adjunct to other hypothermia preventive measures reduces the incidence of admission hypothermia among preterm infants. However, in view of small sample size and a single centre study, we recommend a larger prospective multicentre trial in future.

Keywords:

Polyethylene Cap in Reducing Admission Hypothermia in Preterm Infants

Abstract ID: A-0023

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Congenital Pulmonary Lymphangiectasia: A Case Report of Management

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Abstract Text:

Background:
Congenital pulmonary lymphangiectasia is a rare cause of non-immune hydrops fetalis in neonates. We report a successful management of congenital pulmonary lymphangiectasia.

Case Report:
A 33 week and 3 days' gestation neonate with birth weight of 2.83kg was referred at birth for hydrops fetalis. Baby required bilateral chest tube insertion. Further investigations suggestive of non-immune hydrops fetalis.
Baby developed persistent pleural effusion despite chest drain. Pleural fluid analysis concurred with the diagnosis of chylothorax. The pleural fluid turned into chylous drainage on establishing enteral feeding on Day 10 of life. Pleural fluid sent was suggestive of exudative effusion; lymphocytes predominantly, triglycerides (TG)154 mg/dL. TORCHES and Parvovirus screening were negative. Her chromosomal studies were reported as 46, XX. She was then started on octreotide and medium chain triglyceride (MCT) formula (Portagen). By day 53 she was able to tolerate full EBM.

Discussion:
Management of congenital chylothorax can be challenging in view of multiple issues such as respiratory failure, increased risks of infection and nutritional deficiency. Prognosis can be guarded particularly with confounding factors of prematurity. Approach mainly directed to effective ventilation, pleural drainage, Somatostatin analog and nutritional support with total parenteral nutrition and medium chain triglyceride formula.

Conclusion:
Progressive non-invasive approach of drainage, MCT formula and octreotide is initiated prior to decision of surgical intervention, and this approach is often used to reduce lymphatic flow which gradually resolves the lymphatic leakage.

Keywords:

neonate, hydrops fetalis, chylothorax, octreotide, Portagen

Abstract ID: A-0024

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Neurodevelopmental Complications in Neonates with Severe Hyperbilirubinaemia

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Abstract Text:

BACKGROUND:
Hyperbilirubinemia is one of the most common problems during the neonatal period. Severe neonatal hyperbilirubinaemia is a known cause of lifelong neurodevelopmental impairment. Early prompt recognition and timely interventions are imperative for a significant reduction in complications associated with severe hyperbilirubinaemia.

OBJECTIVES:
The objectives of this study are to study the neurodevelopmental outcomes of babies with severe hyperbilirubinaemia and to identify its associated risk factors.

METHOD:
Neonates admitted to Hospital Sultan Ismail Johor Bahru (HSIJB) from January 2018 to December 2019 for severe neonatal jaundice and had subsequently completed follow-up up to 2 years old were included in the study

RESULTS: There were 1,150 babies admitted for severe neonatal jaundice during this two-year study period of which only 90 babies were followed up till 2 years of age. The study showed that babies who required longer duration of phototherapy were associated with delayed developmental milestones (p= 0.036) of which speech and language milestones were most frequently affected (p=0.0437). Risk factors found to be associated with severe hyperbilirubinaemia were infants of diabetic mothers (p= 0.054), infants of mothers with blood group O+ve (p= 0.001), babies with blood group other than O+ve (p=0.058) and babies with neonatal sepsis (p= 0.03).

CONCLUSION: There is risk of neurodevelopmental sequelae in neonates with severe hyperbilirubinaemia, especially in the speech and language milestone. The risk was higher in babies requiring longer duration of phototherapy.

Keywords:

Severe Hyperbilirubinaemia, Neurodevelopmental complications

Abstract ID: A-0025

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Congenital Cytomegalovirus infection In A Preterm Infant

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Abstract Text:

Report:

Congenital cytomegalovirus infection is the most common congenital viral infection and is the leading non-genetic cause of sensorineural hearing loss and an important cause of neurodevelopmental disabilities. We report here a case of a preterm infant at 33 weeks gestation with congenital cytomegalovirus infection presented with multiorgan involvement. Interestingly, the electrocardiogram showed extensive ST depression which could be related to viral-induced myocarditis and his ultrasound brain revealed lenticulostriate vasculopathy over the basal ganglia region. The diagnosis of congenital cytomegalovirus infection was confirmed with urine and blood cytomegalovirus polymerase chain reaction tests. The infant was started on a 6-months course of oral valganciclovir. He tolerated the medication without major side effects and he responded well to the treatment.

Keywords:

congenital cytomegalovirus, lenticulostriate vasculopathy, valganciclovir

Abstract ID: A-0026

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Risk Factors and Outcomes of Necrotizing Enterocolitis in Preterm Infants: A Retrospective Case-control Study in a Tertiary Neonatal Centre

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Abstract Text:

Background:
Necrotizing enterocolitis (NEC) is one of the most unpredictable and devastating diseases in premature infants. The pathogenesis of NEC is multifactorial and has been associated with enteral feedings, bowel ischemia and infectious causes.

Objectives:
Current study aims to describe the incidence, perinatal risk factors and neonatal outcomes of necrotizing enterocolitis for preterm infants in a regional tertiary hospital.

Methods:
This retrospective cohort study examined the medical records of infants born at 24-31 weeks gestation (n=222) in the year 2020 at a regional tertiary neonatal intensive care unit. The incidence, perinatal risk factors and neonatal outcomes of necrotizing enterocolitis were examined and analyzed using SPSS version 27.0.

Results:
NEC was diagnosed in 19 (8.5%) of 222 very preterm infants including 14 stage II NEC and 5 stage III NEC. Multivariate binary regression analysis demonstrated that the requirement of inotropic support within the first week of life (OR: 11.073, *P*= 0.003) and anaemia requiring red cell transfusion (OR: 3.304, *P*= 0.031) were the significant predictors of NEC. Administration of empirical antibiotics within the first 72 hours of life was associated with reduced NEC risk (OR: 0.168, *P*= 0.011). With respect to outcomes, the NEC group had a longer duration of total parenteral nutrition (*P*< 0.001), higher rate of intraventricular haemorrhage (*P*= 0.056), higher rate of periventricular leukomalacia (*P*= 0.033) and higher rate of mortality (*P*= 0.035).

Conclusion:
The incidence of NEC for very preterm infants in the current study is 8.5% which is similar to that of other multicenter studies. Requirement of inotropic support within the first week of life and anaemia requiring red cell transfusion can independently predict the risk of NEC. The increased morbidity and mortality associated with NEC is significant and NEC remains a major health problem among preterm infants.

Keywords:

Necrotizing enterocolitis, risk factors, incidence, preterm infants

Abstract ID: A-0027

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Are these legs short? - A case report of Proximal Femoral Focal Deficiency (PFFD)

Authors & Institutions:

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Abstract Text:

Proximal femoral focal deficiency (PFFD) is a complex birth defect of the upper part of the femur bone which is either malformed or missing, causing one leg to be shorter. This difference causes problems with walking and can stress other bones and joints in the body.

This baby boy was born at 39 weeks via Emergency LSCS for fetal distress with a birth weight of 3.23kg. His mother is 29 years old, Para 2 with no significant antenatal history. He was vigorous however required CPAP support due to episodes of grunting. On examination of the lower limbs, the right leg appeared shorter than the left with a fixed right Congenital Talipes Equinovarus (CTEV). Right and left femur length was 10 cm and 12 cm respectively, the tibial length was 8 cm bilaterally. The muscle bulk over the right lower limb was reduced. The spine was normal and systemic examination was normal. The Ortolani and Barlow test was negative. He was referred to the orthopaedic team and was screened for Developmental Dysplasia of Hip (DDH). Ultrasound of the hip showed mild DDH. He was put on double diapers and the right leg was on serial casting. He was discharged well after 3 days and planned to be reviewed in 1 week.

PFFD is a condition that affects 1 in 200,000 children and can vary in severity. Children with PFFD have other bone and muscle disorders such as malrotation, limb-length discrepancies, fibular hemimelia, joint instability and muscle weakness. The cause of proximal femoral focal deficiency is unknown.

A team of pediatric orthopaedic surgeons, nurses, prosthetists and physical therapists are needed to customise the treatment plan i.e. staged surgeries, limb-lengthening procedures and prosthetics to address the baby's functional defects. Children with severe PFFD may require a prosthesis to walk, treatment is geared toward improving the baby's functionality with the prosthetics.

Keywords:

Proximal femoral focal deficiency, CTEV, DDH

Abstract ID: A-0028

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Vertical Transmission of COVID-19, How Common?

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Abstract Text:

BACKGROUND:
The coronavirus disease 2019 (COVID-19) pneumonia was first reported in Wuhan, Hubei Province, China, in December 2019, it then became a worldwide pandemic as declared by the World Health Organization on March 11, 2020. As of March 2022, there have been more than 3,800,000 confirmed cases and more than 33,000 deaths reported in Malaysia. Vertical transmission of COVID-19 is reported as 1- 3.2%, defined as the transmission of the infectious pathogen from the mother to the fetus during the antepartum intrauterine periods, intrapartum body fluid contact during childbirth, or through direct contact owing to breastfeeding after birth.

OBJECTIVE:
This study aims to look at the number of infants contracted with COVID-19 via vertical transmission.

METHODS:
A retrospective study from March 2021 to February 2022 in Hospital Tengku Ampuan Rahimah (HTAR), Klang was conducted on the vertical transmission rate of all infants born to mother tested positive within 10 days from the time of delivery. Nasopharyngeal swab for COVID-19 reverse transcriptase polymerase chain reaction (RT-PCR) was done soon after birth in the neonatal ward, and this was repeated after 48 hours of life if the first swab was negative.

RESULTS:
212 infants were born to women tested COVID-19 positive at or near delivery in HTAR, Klang. Out of these 212 infants, 3 infants (1.4%) were tested positive within the first 72 hours of life. Two infants were diagnosed from the first swab, and another from the second swab.

CONCLUSION:
Even though vertical transmission of COVID-19 is uncommon, the vulnerability of neonates population and unfamiliarity with this novel virus imposed a great challenge to the health care team.

Keywords:

Vertical Transmission of COVID-19

Abstract ID: A-0029

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Correlation of Risk Factors, Severity and MRI Brain Findings in Newborns Diagnosed with Moderate to Severe Neonatal Encephalopathy Requiring Therapeutic Hypothermia in a Regional Tertiary Hospital

Authors & Institutions:

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Abstract Text:

Background:
Hypoxic ischemic encephalopathy (HIE) is one of the most serious birth complications mainly affecting term infants.

Objectives:
Our study aims to describe the incidence of HIE and risk factors associated with moderate to severe neonatal encephalopathy.

Methods:
Medical records of patients diagnosed with moderate and severe neonatal encephalopathy who underwent therapeutic hypothermia from July 2016 to November 2021 were reviewed in this retrospective cohort study. The incidence, risk factors and MRI brain findings were analyzed using SPSS version 26.0. Binary logistic regression was performed to determine the risk factors associated with severe neonatal encephalopathy.

Results:
There were 90 newborns who fulfilled the criteria for therapeutic hypothermia, of which 75 (83.3%) had moderate and 15 (16.7%) had severe HIE based on modified Sarnat staging. The incidence of HIE was 1.5 per 1000 live births. All patients required intubation at birth with median (IQR) Thompson score of 12.0 (5.0) at first hour. The need for cardiopulmonary resuscitation (CPR) increased the odds of severe HIE with adjusted OR (95% CI) of 15.97 (1.86, 137.52). Delivery by caesarean section reduced the odds (95% CI) of developing severe HIE by 80% (29-99%) while every one-point increase in the APGAR score at ten minutes, reduced the odds of severe HIE by half (0.264, 0.819). Out of the 90 newborns ,73 had an MRI brain done, at a median (IQR) age of 11 (3.3) days. 43(58.9%) of them had evidence of HIE while 18(24.7%) had normal MRI's.

Conclusion:
The incidence of HIE in our centre was comparable to rates reported in developed countries. Need for CPR at birth increased the risk of development of significant HIE, while delivery by caesarean section and good 10-minute APGAR scores, reduced this risk. A significant proportion of the studied newborns (24.7%) were found to have a normal MRI brain.

Keywords:

Moderate-severe neonatal encephalopathy, Neonatal Encephalopathy, Hypoxic-Ischemic Encephalopathy, Magnetic Resonance Imaging, Therapeutic Hypothermia

Abstract ID: A-0030

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Neonatal	Research Study

Abstract Title:

Prediction Of Neonatal Morbidity And Birth Defects In Diabetic Pregnancies In A Regional Tertiary Hospital Cross-Sectional Study

Authors & Institutions:

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Abstract Text:

Background:
Diabetes mellitus (DM) in antenatal mothers is a major public health issue in Asia. This study aims to describe the incidence of neonatal morbidities and birth defects among infants of diabetic mothers (IDM) born in our center and its associated factors.

Methods:
This is a cross-sectional study conducted at a regional tertiary hospital in Malaysia between November 2021 and February 2022. All neonates born to mothers with diabetes mellitus were enrolled. Exclusion criterion was parental refusal to consent. Logistic regression was performed to determine factors associated with diabetic-related neonatal morbidities.

Results:
A total of 170 infants were enrolled in the study of whom 51% were female. One hundred and fifty-one (89.9%) mothers had Gestational diabetes, while 5 (3%) had type 1 diabetes mellitus and 12 (7.1%) had type 2 diabetes mellitus. Morbidities that were observed in IDM include jaundice (50, 29.6%), respiratory distress (40, 23.5%), hypoglycemia (31, 18.2%) and birth trauma (7, 14.1%). Median (IQR) haemoglobin A1C of mothers with diabetes mellitus ranged between 6.9% (1.1%) to 7.1% (1.2%). Thirty two (76.2%) mothers were on low dose insulin and 25 (14.8%) of them had suboptimal sugar control during pregnancy. Congenital heart disease (CHD) was the most common birth defect among infants of diabetic mothers and logistic regression showed significant associated risk factors were third trimester HbA1c, insulin treatment and type of DM. With every 1% increment in HbA1c, the odds ratio (95% confidence intervals) for CHD doubled (1.13-3.88). Insulin treatment and diagnosis of type 2 DM increased the odds of CHD by 34 (4.24-283.18) and 12 (2.83 – 51.60) times respectively.

Conclusion:
Infants of diabetic mothers in this cohort had a variety of neonatal morbidities and birth defects. Poor glycaemic control during pregnancy predicts development of these morbidities.

Keywords:

birth defect, gestational diabetes mellitus, neonatal morbidity

Abstract ID: A-0031

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Congenital Infantile Fibrosarcoma: A Rare Cause Of A Large Tongue Mass In Newborn

Authors & Institutions:

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Abstract Text:

Congenital infantile fibrosarcoma is an uncommon tumour that usually occurs in the first four years of life. Despite its rarity, it is the most common soft tissue sarcoma in infants and constitutes between 20% to 50% of the malignant soft tissue tumours in neonates. To date, the treatment modalities are surgery, chemotherapy and radiotherapy. Distant metastases are rare in Infantile Fibrosarcoma, but local recurrence is common. Infantile fibrosarcoma generally has better prognosis than adult fibrosarcoma with 90% survival at 5 years.

We report an exceptional case of huge fibrosarcoma involving solely the tongue of a term infant with uneventful antenatal history who was delivered via EXIT (Ex Utero Intrapartum Treatment) procedure. A huge oral mass was detected and evaluated during antenatal and postnatal period respectively by magnetic resonance image (MRI) scan. Postnatal MRI revealed a large hypervascular solid tongue mass, causing expansion of the tongue and oral cavity and protruding out of the mouth. The mass involves the entire tongue from the base till anterior tip and normal muscle architecture is not visualised. Doppler ultrasonography noted dilated lingual artery and its branches at the posterior tongue and increased vascularity in the rest of the tongue mass. Open tracheostomy was done in anticipation of airway compromise. Histopathology and immunohistochemistry of tongue mass biopsy done at one week of life showed the spindle cells are positive toward Vimentin, CD99, Bcl2 and TLE-1 (nuclear, moderate intensity, 50% of cells). The immunohistochemical profile is non-specific. Following histopathology and immunohistochemistry report, 4 cycles of neoadjuvant chemotherapy and surgery were planned. This infant will be closely followed up with serial MRI imaging to determine the outcome.

Keywords:

Fibrosarcoma, tongue, infant

Abstract ID: A-0032

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Pierson Syndrome: A Rare Etiology of Congenital Nephrotic Syndrome

Authors & Institutions:

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Abstract Text:

Background:
Pierson syndrome is a rare autosomal recessive disorder, typically characterized by congenital nephrotic syndrome with diffuse mesangial sclerosis, peculiar ocular anomalies with microcoria and neurodevelopmental deficits. These phenotypes are caused by mutations in the LAMB2 gene, which encodes laminin β2.

Report:
We are reporting a borderline premature boy (35 weeks 1 day) who is the firstborn of non-consanguineous, healthy parents. Antenatally, the mother was detected to have oligohydramnios and the fetus had a unilateral calcified fetal kidney. This index case was born with good Apgar scores, but had poor tone. He later developed worsening oedema, oliguria, and kidney impairment. He was found to have congenital nephrotic syndrome and he had progressed into end stage renal failure within 1 week of age. Bilateral fixed narrowing of pupils (microcoria) was noted. Ultrasound KUB showed bilateral enlarged kidneys with loss of corticomedullary differentiation. He was treated conservatively and had succumbed at day 20 of life due to the end stage renal failure. A referral was made to the genetic team, and the buccal swab done for the whole exome sequencing confirmed the diagnosis of Pierson syndrome. He had a compound heterozygous mutation in the gene encoding laminin beta2 (LAMB2), and this is likely to be of an autosomal recessive inheritance pattern.

Conclusion:
We hereby describe a LAMB2 gene nonsense mutation causing severe form of neonatal presentation of Pierson syndrome. There is no specific therapy for Pierson syndrome. The prognosis is poor because of the progressive impairment of renal function and complications of renal failure.

Keywords:

Pierson syndrome, microcoria, congenital nephrotic syndrome, LAMB2 gene

Abstract ID: A-0034

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Respiratory Syncytial Virus Hospitalization among High-Risk Premature Infants in Hospital Melaka

Authors & Institutions:

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Abstract Text:

Background
Premature infants have been associated with a higher risk of developing respiratory syncytial virus (RSV) infection requiring hospitalization, as well as a higher mortality rate. Palivizumab is used as prophylaxis against RSV infection. This research was conducted with the aim of obtaining data on palivizumab prophylaxis among preterm infants and its associated hospitalization and mortality rate, as compared to those without palivizumab prophylaxis, in a Malaysian context.

Objectives
To compare the RSV hospitalization and mortality rates among high-risk premature infants with and without palivizumab prophylaxis delivered in Hospital Melaka from 2014 till 2020.

Methods
This is a retrospective cross-sectional study using a purposive sampling method to recruit the patients. The study was conducted in the paediatric department of Hospital Melaka. Medical records of preterm infants less or equal to 35 weeks delivered in 2014 till year 2020 were reviewed. Data were analysed using IBM SPSS Statistics version 26.0. Descriptive statistics and Chi-square test were applied, and the statistical significance was set at $p < 0.05$.

Results
Out of the 493 preterm infants recruited, 57.4% were male infants, the Malay ethnic being the majority group (84%) and the predominant age group was 28-32 gestational weeks (48.3%). 8.9% were hospitalized due to RSV infection. 17.6% of the premature infants had underlying bronchopulmonary dysplasia. Those administered with palivizumab prophylaxis had significantly lower rates of RSV hospitalization (5.8%, p value 0.000) as compared to those without palivizumab prophylaxis (9.6%) during the first year after administration. Similarly, the RSV mortality rate was significantly higher amongst those without palivizumab prophylaxis (10.3%, p value 0.000) compared to those with palivizumab prophylaxis.

Conclusion
Preterm infants without palivizumab prophylaxis administration demonstrated a significantly higher rate of RSV hospitalization and mortality as compared to those who had been administered with palivizumab prophylaxis.

Keywords:

Palivizumab, respiratory syncytial virus, preterm, hospitalization, mortality.

Abstract ID: A-0035

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

A Rare Neonatal Presentation of Incontinentia Pigmenti with Severe Pulmonary Hypertension

Authors & Institutions:

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Abstract Text:

Background:
Incontinentia Pigmenti (IP) is a rare X-linked dominant multisystem disorder characterized by evolving skin lesions following the Blaschko lines. Pulmonary hypertension (PHT) is a severe, lethal, and rarely reported complication. We describe a case of IP in a newborn female, who presented with vesiculopapular skin lesions and persistent pulmonary hypertension of newborn (PPHN) at birth, followed by severe pulmonary hypertension at day 11 of life, and had responded to vigilant pulmonary hypertension management.

Report:
A term 39 week gestation female infant was born vigorous via caesarean section with birth weight 2.7kg and after an uneventful antenatal history. There was no family history of skin disorders. Few vesicles and papules were noted over the trunk and limbs at birth. At 4 hours of life, she was intubated for respiratory distress. Echocardiography revealed severe PPHN. She responded well to inhaled nitric oxide (iNO), 2 inotropes, intravenous prostaglandin, and was extubated to nasal prong oxygen on day 5 of life. Meanwhile, her skin lesion turned verrucous (Stage 2) with a blaschkoid pattern, suggesting IP. A skin biopsy (day 5 of life) was consistent with the diagnosis (eosinophilic exocytosis and spongiosis). On day 11 of life, she was reintubated for severe pulmonary hypertension, responding poorly to iNO. Sildenafil was added and optimized expeditiously with careful titration of inotropes. She had improved and was successfully extubated on day 21 of life. Meantime, she developed hyperpigmentation and hyperkeratotic plaques at 3 weeks old. She remained oxygen-dependent and was discharged with home oxygen therapy at 2 months old. Her latest echocardiography (3 months old) revealed a well-controlled PHT, while home oxygen therapy was continued.

Conclusion:
Pulmonary hypertension is an exceptional and fatal complication of IP with few reported surviving cases among neonates. Our case suggests that vigilant pulmonary hypertension management and efficient use of sildenafil may change this dreadful outcome.

Keywords:

incontinentia pigmenti, pulmonary hypertension, persistent pulmonary hypertension of newborn, sildenafil, Blaschko lines, verrucous, hyperpigmentation, hyperkeratotic plaque, inhaled nitric oxide

Abstract ID: A-0036

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Acute Neonatal Hepatitis following Asymptomatic COVID-19 infection: An Infrequent Cause of Neonatal Hepatitis

Authors & Institutions:

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Abstract Text:

Background
Neonatal hepatitis following COVID-19 infection has been reported as a sequela of COVID-19 infection. However, the association between COVID-19 severity and the degree of acute hepatitis is unclear. The natural course and duration of hepatitis following the infection is still unknown. This case illustrates a case of prolonged neonatal hepatitis following asymptomatic COVID-19 infection resembling metabolic liver disease.

Report
This female Malay infant was referred to our centre on Day 48 of life for prolonged jaundice. She was exclusively breastfeeding and was thriving well. She was diagnosed with asymptomatic Covid-19 infection on Day 24 of life. The patient remained afebrile and well throughout her quarantine period.
Examination revealed hepatomegaly (2cm below the costal margin, soft consistency, smooth surface, regular margin and non-tender). Apart from that, she had no splenomegaly or other evidence of chronic liver disease. She had no dysmorphism, and precordial examinations were normal. Ophthalmological examination found no chorioretinitis or cataract.
Blood tests revealed unconjugated hyperbilirubinemia, raised alanine aminotransferase (ALT), aspartate aminotransferase (AST), gamma-glutamyl transferase (GGT), and lactate. Urine organic acids profile showed mild elevation of 4-hydroxyphenyl acetate and homovanillate (which might indicate phenylketonuria or certain types of tyrosinemia). Repeated tests over two months showed worsening transaminitis, unconjugated hyperbilirubinemia, persistent hyperlactatemia. Out of expectation, liver enzymes and serum lactate have been down-trending and normalised at five months old.

Conclusion
This case illustrates that acute hepatitis might still occur in an asymptomatic neonatal COVID-19 infection patient. Hence, liver enzymes monitoring might be routinely needed regardless of the clinical severity. Furthermore, the complication of acute hepatitis might run a long course before resolution. Larger case series or cohort studies are needed to study the prevalence and natural course of neonatal hepatitis following Covid-19 infection.

Keywords:

Acute neonatal hepatitis, neonatal COVID-19 infection

Abstract ID: A-0038

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Obstetrics	Research Study

Abstract Title:

Iron Deficiency without Anemia among Labouring Women in a University Hospital, Kuantan, Malaysia

Authors & Institutions:

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Abstract Text:

Background:
In Malaysia, approximately 40% of pregnant women were reported to be anemic and the majority were due to iron deficiency. However, iron deficiency without anemia (IDWA) is often underdiagnosed. This is an alarming problem because the foetus acquires most of its iron in the third trimester and iron deficiency is linked to neurodevelopmental impairment.

Methods:
A cross sectional study was conducted involving 115 healthy, term pregnant women who delivered in Sultan Ahmad Shah Medical Center @IIUM. Maternal blood for hemoglobin level and serum ferritin was taken prior to labour and cord blood for neonatal serum ferritin was taken at birth. The prelabour hemoglobin was then compared with the booking hemoglobin level which was obtained from the antenatal card. Correlation between maternal and cord blood serum ferritin levels were identified using Pearson correlation analysis.

Results:
We found that 49.1% of the labouring women were IDWA while only 7.1% were iron deficiency anemia (IDA). 12.3% of the pregnant women were anemic at booking with the lowest Hb 9.9 (M = 12.09, SD = .97). Prior to labour, 12.2% of them were anemic with lowest Hb 8.4 g/dL (M = 11.76, SD = 1.15). The average level of serum ferritin was 37.75µg/L (range 2.10µg/L - 209µg/L). However, there was no evidence of a significant relationship between serum ferritin of the mother and serum ferritin of the cord, r (110) = .16, p = .11.

Conclusion:
Most of the healthy pregnant women had low iron despite normal levels of hemoglobin. While treatment in IDWA is controversial and debatable, recommendations should be made to standardize all pregnant women to be tested for iron status since iron is pivotal for the mother and the first 1000 days of their newborn.

Keywords:

Iron deficiency without anemia, labour, nutrition, 1000 days of life

Abstract ID: A-0039

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Isolated Ascites in Neonates: Two Cases of Different Aetiology

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Abstract Text:

Background:
Neonatal ascites is a rare and perplexing problem with numerous possible aetiologies.

Report:
We report two cases of isolated neonatal ascites with differing aetiologies, which we encountered in our district hospital setting. Both cases were detected antenatally as hydrops fetalis hence delivery was facilitated immediately. The babies were intubated at birth due to respiratory distress from gross abdominal distention. Post-delivery, the babies were found to have only isolated ascites with gross hydrocele. Both cases required surgical intervention and were referred to a tertiary centre. In case 1, the baby was noted to be anuric in the first 24 hours of life with acute kidney injury. Imaging studies done were suggestive of posterior urethral valve complicated with grade 3 right vesico-ureteric reflux with perinephric urinoma. Urinary ascites occurred due to high pressure obstructive uropathy. The baby underwent vesicostomy without complications. In case 2, the baby presented with rapidly worsening abdominal distention with persistent greenish Ryles tube aspirates. The presence of air under diaphragm in abdominal x-ray were suggestive of a perforated viscus. The baby underwent emergency exploratory laparotomy on day 2 of life, intraoperatively there was a single perforation found at the terminal ileum. Histological finding confirmed spontaneous neonatal intestinal perforation which most likely occurred in utero. In both cases, the ascites resolved postoperatively and the babies were able to be discharged well.

Conclusion:
Isolated fetal ascites is a separate entity from hydrops fetalis and has shown to have good prognosis with early identification of the underlying aetiology and subsequent surgical intervention.

Keywords:

posterior urethral valve , perinephric urinoma, urinary ascites, spontaneous neonatal intestinal perforation, gross abdominal distension

Abstract ID: A-0040

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Incidence of Exchange Transfusion and associated Factors among Neonates with Severe Hyperbilirubinemia

Authors & Institutions:

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Abstract Text:

Background
Severe hyperbilirubinemia can lead to kernicterus and hearing loss, and exchange transfusion (ET) is a last line defence method of reducing bilirubin levels. ET has known complications. Consequently, the incidence of ET has declined in developed countries largely due to improved surveillance of neonates with clinically significant jaundice. In contrast, excessive rates of ET still persist in low and middle-income countries over the years. The aim of our study was to evaluate the incidence of ET in our population, associated factors for those who underwent ET, and the clinical outcomes.

Methods
A retrospective study was conducted based on a Severe Jaundice Registry from 2017 to 2019. Neonates born ≥35 weeks of gestation who were hospitalized for jaundice and underwent ET were included in the study. Severe jaundice was defined as total serum total bilirubin levels exceeding 340mmol/L. We examined clinical characteristics and adverse events after ET.

Results
A total of 8,137 out of 31,501(25.8%) neonates were admitted to our centre for jaundice. 324 (4.0%) of them had severe jaundice. Of these 324, 66 (20.4%) neonates had undergone ET. We found that those who had undergone exchange transfusion presented with early age onset at day 3 of life and higher serum bilirubin on admission (> 390mmol/L). In addition, we found that neonates with ABO incompatibility, neonates with blood group type B had a higher risk of undergoing ET even though their Coomb test was negative. Other associated factors were those with significant weight loss and g6PD deficiency.

Conclusion
The results of this study demonstrate that hyperbilirubinemia requiring ET is still high in our population. Important factors are those who have significant weight loss, ABO incompatibility and G6PD deficiency.

Keywords:

neonatal Hyperbilirubinemia , exchange transfusion

Abstract ID: A-0042

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Obstetrics	Research Study

Abstract Title:

Maternal to Neonatal Transmission of Antibody against Covid-19 Study - The TRAB CoV-19

Authors & Institutions:

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Abstract Text:

Background:
The efficacy of vaccination among pregnant women has thus been established. However, fetal protection via vertical antibody transmission during pregnancy remains uncertain. Therefore, we aim to consolidate evidence of transplacental antibody transfer post-maternal vaccination as neonatal protection.

Method:
A prospective study was conducted with all vaccinated pregnant women with or without a history of COVID-19 infection admitted for delivery at term, were included. Maternal and umbilical cord blood samples were collected within 30 minutes of delivery for quantification of antibodies via ImmuSAFE® kits and tested for nucleocapsid (N) protein (recent infection) and SARS-CoV-2 (S) (current vaccination) antibodies. Results were considered positive if Anti -N >4634 and Anti -S >3648 based on manufacturer instruction.

Result:
About 197 mother-baby dyads were included with a mean age of 31.32 years. Most mothers were overweight (26.47 kg/m2) and received mRNA vaccine (Pfizer®) (93.9%). At least 13.2% (n=26) were noted to have recent or past COVID-19 infection. Anti-N antibody was negative for both mother and fetus; Anti-N Ab <4634 (baby: 2642.67, range 1355-5561.42; mother: 2937, range 1681.92-6183, respectively). In contrast, positive antibody (Anti-S antibody) following vaccination was noted to be higher (>3648) in both groups (mother: 17535, range 13533-23000; baby 18349, range 13982-23139). The correlation between maternal and neonatal findings significantly suggested the possibility of transplacental transmission of antibodies from mother to fetus ($p<0.06$). Furthermore, there was a significant rise of anti-N in babies of mothers with past or recent COVID-19 infection ($p<0.001$). Otherwise, either mRNA or live inactivated vaccine had no significant effect on antibody formation ($p>0.05$).

Conclusion:
Mothers with past or recent COVID-19 or a history of COVID-19 vaccination demonstrated transplacental antibody transmission to the fetus. Hence, maternal COVID-19 immunization should be strongly encouraged as it confers a significant humoral benefit to the newborn, potentially reducing perinatal morbidity and mortality.

Keywords:

Covid 19, Vaccination, Transplacental antibody, Immunization

Abstract ID: A-0043

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Poster	E-Poster	Nursing	Research Study

Abstract Title:

Epidemiology and Aetiology of Medication Administration Errors amongst Neonates: a Systematic Review

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Abstract Text:

Introduction/Background
Medication errors (MEs) may arise throughout the various stages of the medication use process. Although MEs during prescribing are the most common, their likelihood to be intercepted is higher as compared to administration. Hence, medication administration errors (MAEs) are most likely more harmful especially in neonates.

Objective(s)
This systematic review aims to critically appraise the evidence on the epidemiology and aetiology of MAEs amongst neonates.

Material and Method(s)
Nine electronic databases and grey literature were searched for studies without language and publication date restrictions. Studies were included if they were conducted in the Neonatal Intensive Care Unit (NICU) and quantified the MAEs reported or the contributory factors. Study selection, quality assessment, and data extraction were conducted by the lead researcher. Throughout the entire process, all data were double-checked by two independent researchers to ensure reliability, and any differences in interpretation or ambiguous studies were discussed to reach a consensus. A narrative approach to data synthesis was adopted; data related to error causation were synthesised according to Reason's Accident Causation model.

Result(s)
Twenty unique studies were included. The median error rate (IQR) for nine studies reporting total opportunity errors as the denominator for MAEs was 68.0% (41.1% – 86.0%). Amongst the three studies reporting MAEs per neonate, the rate of prevalence was between 17 and 75 MAEs per neonate. Wrong administration technique, wrong drug-preparation and wrong time errors were the three most common types of MAEs. Six studies reported the causes leading to MAEs and found an error-provoking environment to be the most common cause followed by active failures.

Conclusion
This is the first comprehensive systematic review gathering available evidence emphasizing the epidemiology and aetiology of MAEs amongst neonates. Important targets such as the common types of MAEs and the reasons for MAEs identified will guide policymakers to implement remedial measures.

Keywords:

medication administration errors, prevalence, error causation, systematic review

Abstract ID: A-0044

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Neonatal Sepsis in Very Low Birthweight Infants: A retrospective cohort study in a tertiary hospital in Malaysia

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Abstract Text:

Background:
Sepsis is one of the commonest causes of neonatal mortality. Neonatal sepsis may be classified into early-onset sepsis (EOS) which is defined by positive blood or cerebrospinal fluid (CSF) culture before 3 days of life and late-onset sepsis (LOS) for those after 3 days of life. Data on risk factors, causative organisms and outcome of neonatal sepsis among very low birth weight (VLBW) infants in Malaysia is sparse. This information is important to prevent and improve management of neonatal sepsis.

Objective:
To describe the incidence, causal organisms, risk factors and neonatal outcomes of neonatal sepsis in VLBW infants in Hospital Tunku Azizah (HTA).

Methods:
Data of all inborn VLBW infants delivered from 1st October 2019 to 30th September 2021 in HTA were collected and reviewed. The data were analysed for incidence of EOS and LOS, causal organisms, risk factors and associated morbidity and mortality.

Results:
A total of 406 VLBW infants were included in the study. EOS was found in 0.7% of VLBW infants and LOS in 11.1%. The common organisms that contribute to EOS were *Streptococcus agalactiae while* ESBL- producing Klebsiella pneumonia contribute to 13% of LOS.
Lower birth weight, longer duration of mechanical ventilation, longer duration of central line use and total parenteral nutrition (TPN) use were associated with increased risk of LOS. Prior exposure to broad spectrum antibiotics, which include Cefepime, Meropenem, Vancomycin and Tarzocin, were significantly associated with increased risk of LOS. LOS was associated with increased risk of death, severe intraventricular hemorrhage, necrotising enterocolitis and bronchopulmonary dysplasia.

Conclusion:
LOS was a significant cause of morbidity and mortality among VLBW infants. Clinical guidelines on prevention and management of neonatal sepsis that are tailored to centre specific characteristics of LOS should be developed.

Keywords:

VLBW, neonatal sepsis

Abstract ID: A-0045

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

The Crumpled “Tummy”

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Abstract Text:

Background:
Prune belly syndrome (PBS) also known as Eagle-Barrett syndrome or the triad syndrome, is a rare congenital multisystem disease with an estimated incidence of 3.6 to 3.8 per 100,000 live male births. Less than 5% of those affected are female. It is characterised by a triad of absent or deficient abdominal musculature resulting in a prune-like wrinkled abdomen, urinary tract abnormalities, and cryptorchidism. It is also associated with pulmonary, cardiovascular, gastrointestinal and musculoskeletal abnormalities. The exact aetiology of PBS is unknown, but the proposed theories include in-utero bladder obstruction, maldevelopment of the mesoderm, yolk sac defect, and an underlying genetic abnormality.

Report:
We report a baby girl born at 32 weeks and 2 days of gestation with a birthweight of 1.42kg. She was born via Caesarean section to a 29-year-old primigravida mother, who had presented in a hypertensive crisis with pre-eclampsia which was complicated by peripartum cardiomyopathy and acute pulmonary oedema. Prenatal ultrasound scan at 30 weeks showed an elongated head with frontal bossing, ventricular septal defect, and bilateral grossly dilated kidneys. Upon delivery, she was intubated for poor respiratory effort and tone. On examination, she had facial dysmorphism, a systolic murmur, a grossly distended wrinkled abdomen, absence of urethral opening, an imperforate anus, and bilateral flat and inverted feet. Echocardiogram revealed a small perimembranous ventricular septal defect. Ultrasound abdomen reported bilateral multicystic dysplastic kidneys with severe hydronephrosis and grossly dilated bowels. In view of multiple congenital anomalies with a very poor prognosis, comfort care was opted, and she succumbed at 41 hours of life.

Conclusion:
PBS is a rare congenital anomaly of uncertain aetiology and poor prognosis with stillbirths and early neonatal deaths being common. We report a case of female neonate with PBS because of its rarity in females with fewer than 30 cases reported in the literature.

Keywords:

prune belly syndrome, neonate

Abstract ID: A-0046

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Incidence of Failed Hearing Test and Associated Factors among Neonates with Severe Jaundice

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Abstract Text:

Background:
Up to 60% of term neonates have neonatal hyperbilirubinemia in Malaysia. Reported incidence of hearing loss at the initial testing ranged between 6.7–14.3% at 3 months follow-up. However, apparent medical and economic advantages are yet to be validated in our populations. Therefore, the aim of the study was to retrospectively determine the incidence of abnormal hearing loss and the associated factors among neonates with severe jaundice.

Methods:
This retrospective study is based on the severe jaundice registry, from 2017 to 2019. Severe jaundice was defined as total serum total bilirubin of more than 340 mmol/L. Primary outcome was failed confirmatory hearing loss. The associated risk factor was identified. Hearing screening was done by Automated Auditory Brainstem Response(AABR). Confirmation test was done by auditory brainstem response(ABR).

Results:
A total of 8,137 out of 31,501(25.8%) neonates were admitted to our centre for jaundice. Of these admitted, 324 (4.0%) neonates had severe jaundice. Among all, 24(7.4%) neonates have failed the hearing screening. However, only 1 neonate (0.3%) had confirmed sensory hearing loss. Risk factors that were identified in the guideline did not appear in our study. The proportion of neonates who had undergone exchange transfusion (ET) with failed hearing screening (25%), did not differ significantly from the portion of neonates with normal hearing who had also undergone ET(20%). Those who had undergone ET presented early, from day 3 of life, and with high serum bilirubin levels on admission(>390mmol/L). In addition, 3.6% of those who have prolonged jaundice, which supposedly has a lower risk, can still potentially have abnormal hearing screening, even though all of them eventually passed the confirmatory hearing test.

Conclusion:
Hearing loss is a known risk for infants with severe neonatal hyperbilirubinemia. However only 1 out of our 324 babies went on to develop sensory hearing loss. Hearing loss does not appear to be a common complication of severe neonatal hyperbilirubinemia in our centre, possibly due to our early intervention strategies.

Keywords:

neonatal hyperbilirubinemia , hearing loss

Abstract ID: A-0047

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Risk Factors and Outcomes of Very Premature Neonates Less Than 32 Weeks with Anaemia Requiring Transfusion

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Abstract Text:

Background:
Anaemia of prematurity (AOP) is a common condition with serious consequences among very premature infants. Although its pathophysiology is well-described, the risk factors and minimum blood transfusion threshold are still debatable with no accepted universal consensus.

Objectives:
To compare the risk factors, gestation-specific haemoglobin trends, and outcomes of infants less than 32 weeks gestation who require transfusion, versus those not transfused. We aimed to identify modifiable risk factors to enable implementation of preventive and corrective measures to ultimately reduce blood transfusion needs in this population.

Methods:
A retrospective cohort study was conducted in a tertiary teaching hospital in Malaysia between January 2016 and December 2019. The socio-demographic characteristics, risk factors, and haemoglobin trends were evaluated using univariate and multivariate analysis.

Results:
Data of 295 premature infants were analysed, where 135 (45.8%) received blood transfusion. All premature infants experienced variable degrees of anaemia, with mean haemoglobin (Hb) trough levels being 7.4±3 g/dL in the transfusion group. Transfusion group had significantly lower Hb at birth (16.1±3 g/dL, $p<0.05$), but comparison of the haemoglobin trends between the two groups was not significant. Multiple logistic regression revealed that extremely premature infants, extremely low birth weight, mechanical ventilation days, umbilical catheter insertion, and phlebotomy frequency were significantly associated with transfusion requirement. Premature infants requiring blood transfusion had poorer outcomes where there were delays in achievement of full feeding, prolonged hospital stay, and higher mortality rates compared to those not transfused.

Conclusion:
Gestational age, birth weight, mechanical ventilation days, umbilical catheter insertion, and phlebotomy frequency affect the requirement for blood transfusion. Ensuring better Hb at birth by possibly delaying cord clamping, and reducing iatrogenic blood loss as a modifiable risk factor will help reduce the requirements for blood transfusion. Infants requiring transfusion have poorer outcomes i.e., bronchopulmonary dysplasia, retinopathy of prematurity and higher mortality rate.

Keywords:

Anaemia of prematurity, risk factor, blood transfusion, less than 32 weeks

Abstract ID: A-0048

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Neonatal	Research Study

Abstract Title:

Clinical Characteristics of COVID-19 in Young Infants and the Protective Effect of Maternal COVID-19 Vaccination and Breastfeeding Against Severe Disease

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Abstract Text:

Background
COVID-19 presents in a spectrum with varying severity across different age groups of patients. Young infants may also present with severe disease.

Objective
We describe the clinical characteristics of infants hospitalized with COVID-19 and examine the relationship between maternal COVID-19 vaccination and breastfeeding on the outcomes and severity of COVID-19.

Method
A retrospective observational study was performed among infants aged 6 months and below who were hospitalized for COVID-19 in Hospital Tuanku Ja'afar Seremban, Negeri Sembilan between 1 February 2022 to 30 April 2022. Demographic, clinical data, breastfeeding practices and maternal vaccination status were extracted from medical records and evaluated against the severity of COVID-19 among infants.

Results
A total of 102 infants were included, 53.9% were males with a median age of 11 weeks old (IQR 5-20). 16 patients (15.7%) had pre-existing comorbidities, including prematurity. Fever was the most common presenting symptom (82.4%), followed by cough (53.9%) and rhinorrhea (31.4%). 41 infants (40.2%) presented with severe disease, defined as pneumonia requiring supplemental oxygen and 2 (2%) required PICU admission. All patients were discharged alive. The median age of infants with severe disease was 13 weeks (IQR 7-22). The proportion of infants who are exclusively breastfed was higher in the non-severe group (37.7%) compared to the severe group (9.8%, p = 0.002). The proportion of mothers who were recently vaccinated for COVID-19 was also higher in the non-severe group (47.5% vs 26.8%, p = 0.036).

Conclusion
Maternal COVID-19 vaccination was associated with lower rates of severe COVID-19 in young infants. Exclusive breastfeeding was associated with lower rates of severe disease. These observations suggest a role for maternal vaccination and breastfeeding to protect young infants from severe COVID-19.

Keywords:

COVID-19, infants, risk factors, vaccination, breastfeeding

Abstract ID: A-0049

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Obstetrics	Research Study

Abstract Title:

The Impact Of Covid-19 On Progression Of Labour: A Single-Institution Case Series Report

Authors & Institutions:

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Abstract Text:

Background:
While COVID-19 has been spreading, management of vaginal delivery in COVID-19 remained unclear due to lack of research focusing on the effects of COVID-19 on characteristics of labour. Lack of information for management of labour have resulted in increasing iatrogenic caesarean section. Our hospital established a multidisciplinary scheme for expectant management.
Objectives:
The objective of our study is to investigate the effects of COVID-19 on vaginal delivery: not only its characteristics but its safety, including vertical transmission.

Methods:
This was a single-institution retrospective study for investigating the effects of COVID-19 on vaginal labour. Pregnant COVID-19 women who transferred and delivered in our hospital from September 2020 to March 2022 were enrolled. We defined COVID-19-infected women undergoing vaginal delivery during and post-isolation as COVID-19 group (n=50). Control group was defined as non-COVID-19 women undergoing vaginal delivery at term gestation (n=258). With comparison between both groups, we analysed labour time, Bishop score, and COVID-19 antigen from pregnancy-associated materials.

Results:
Our main results were as follows: 1) COVID-19 group showed rapid progressing labour on 1st and 2nd stage of labour and after rupture of membrane compared with control group (control vs. COVID-19, min: 545.7 ± 459.1 vs. 291.3 ± 155.2, P<0.01; 38.8 ± 42.8 vs. 20.9 ± 14.6, P<0.01; 80.6 ± 104.3 vs. 47.9 ± 50.2, P=0.02, respectively); 2) COVID-19 group represented higher Bishop score on initiation of labour than control group (control vs. COVID-19; 5.1 ± 2.7 vs. 6.4 ± 2.6, P<0.01). No vertical transmission was found on conventional COVID-19 testing from pregnancy-related materials.

Conclusion:
We found the novel characteristics of labour in COVID-19, rapid labour and well-ripening uterine cervix on labour. Systemic inflammation may affect well-ripening cervix and excessive contraction, resulting in rapid progression of labour. Our findings can contribute to further management of labour in COVID-19.

Keywords:

COVID-19, labour time, management of labour, perinatal outcome, pregnancy, rapid delivery

Abstract ID: A-0050

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Neonatal	Research Study

Abstract Title:

A Multi-institutional Web-based Survey of Cardiopulmonary Management for Extremely Preterm Infants During the Transitional Phase in Japan and the UK

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Abstract Text:

Introduction
Less invasive surfactant administration (LISA) and neonatologist-performed echocardiography (NPE) are expected to have the potential to reduce morbidities associated with prematurity (i.e., bronchopulmonary dysplasia, haemodynamically significant patent ductus arteriosus [PDA] and intraventricular haemorrhage). However, the prevalence of these new therapeutic strategies may differ worldwide.

Objective
This survey aims to evaluate the uptake of LISA and NPE in Japan and the United Kingdom (UK).

Material and Method
From June to December 2021, we conducted a web-based survey to evaluate the uptake of LISA and NPE in Japan and the UK. The questionnaire consisted of questions about the general information of each NICU, interest in LISA and NPE, and the implementation status of their strategies. In Japan, the web-based questionnaire was disseminated to the members of the Perinatal Circulation Management and the Japanese Neonatologist Association. In the UK, the members of the British Association of Perinatal Medicine and the Wales Maternity and Neonatal Network were involved in this survey.

Results
Overall, 227 neonatologists (162 institutes) completed the questionnaires: 202 (150) from Japan and 15 (12) from the UK. Only 8% of neonatologists used LISA, and 75% would not plan to start LISA. The main reasons for not implementing LISA were the inexperience of the technique and the doubt about the evidence of LISA. Meanwhile, 89% of neonatologists performed LISA in the UK. Almost all Japanese neonatologists (99%) and a quarter of British neonatologists (27%) performed echocardiography independently. Besides, Japanese neonatologists preferred to intervene in PDA proactively based on the echocardiographic findings, whilst British neonatologists tended to expect spontaneous PDA closure.

Conclusion
Most Japanese neonatologists are still indifferent to LISA, as they doubt its advantages. NPE has become commonplace in Japan, but NPE is not a standard modality in the UK.

Keywords:

Preterm infant, Less invasive surfactant administration, Echocardiography, Survey

Abstract ID: A-0051

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Obstetrics	Research Study

Abstract Title:

The Combination Effect of Oxytocin Administration and Epidural Anesthesia in Labor for Short- and Long- Term Offspring Outcome. A Scoping Review.

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Abstract Text:

Introduction:
Although epidural analgesia (Epi) and oxytocin administration before birth have been investigated, their association with offspring's outcome and they are often used together, the combined effect of them are still unclear.

Objective:
This scoping review aimed to map current evidence on the outcome of offspring from mothers who were exposed to both Epi and oxytocin in labor.

Evidence review:
We followed the Preferred Reporting Items for Scoping Reviews and Meta-analyses Extension for Scoping Reviews (PRISMA-ScR). All studies were identified by searching MEDLINE/Pubmed, Web of science, Cochrane library and hand searched articles since inception to 30 December 2021. Two independent reviewers screened articles with title, abstract and full-text screening which described the offspring's outcome who were delivered from mothers exposed to both oxytocin administration and epidural anesthesia in labor. Evidence was mapped to several themes that answer the research questions of this review.

Findings:
We identified only 7 of 487 studies were eligible for this scoping review. The seven studies were one systematic review (including 2 randomized control trials), 5 cohort studies and 1 retrospective study. Regarding neonatal outcome from birth to one month after delivery, babies from mothers medicated with both Epi and oxytocin showed some differences in behavior or physical assessment when compared to those from mothers with no Epi or no oxytocin. No studies investigated after one month the outcome of offspring from mothers exposed to both Epi and oxytocin in labor.

Conclusions:
This scoping review found all of the included studies focused on offspring's outcome up to 1 month of age who were delivered from mothers exposed to Epi and oxytocin administration before birth and the gap of knowledge after then. Further study is needed in this area which will be helpful and additional information for both women and clinicians considering Epi and oxytocin administration during birth.

Keywords:

oxytocin, epidural analgesia, delivery, neurodevelopment

Abstract ID: A-0052

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Young-onset non-obese type 2 diabetes in a patient who was born as an extremely preterm small-for-gestational age infant

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Abstract Text:

Introduction:
Small-for-gestational age (SGA) infants who have restricted growth in utero are at high-risk for type 2 diabetes in adulthood after developing obesity. Furthermore, an early timing of adiposity rebound (AR) at ≤ 4 years of age has been reported to be related to the development of obesity and type 2 diabetes.

Report:
The patient was a 20-year-old man. He was born by caesarean section at 27 weeks and 4 days of gestation with SGA. His birthweight was 642 g (-2.89 standard deviation). The cause of SGA was due to hypertensive disorders during pregnancy. No early AR or obesity were observed in his infancy, childhood, or school age. He visited his family physician with a chief complaint of pain when urinating. A urine analysis revealed positive urine glucose levels (5+), and he was referred to a diabetologist. At the time of admission (20 years), his height, body weight, and BMI were 169.3 cm, 58.5 kg, and 20.4, respectively. His fasting blood glucose and HbA1c levels were 175 mg/dL and 11.6%, respectively. The insulin response on a glucagon load test and urinary storage connecting peptide immunoreactivity test was normal. The results were negative for anti-glutamic acid decarboxylase antibody and anti-insulinoma-associated antigen-2 antibody. Based on these results, he was diagnosed with type 2 diabetes. His body composition analyses using InBody s10® (medical device approval number: 223AFBZX00130000) at the onset of diabetes, his body fat percentage and body fat mass were within the normal range (18.4% and 10.8 kg, respectively). However, his muscle mass was 44.7 kg, which was low compared with a standard reference, and he did not exhibit significant fat accumulation.

Conclusion:
We suggest that patients born as extremely preterm SGA infants should be under careful observation for the development of diabetes, even if they do not become obese.

Keywords:

adiposity rebound, body composition analysis, glucagon load test

Abstract ID: A-0053

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Neonatal	Research Study

Abstract Title:

Gene Expression Profile Analysis of Umbilical Cord Mesenchymal Stem Cells Revealed Fetal Programming due to Chorioamnionitis

Authors & Institutions:

Yusuke Noguchi[1], Atsuko Taki[1], Izumi Honda[2], Manabu Sugie[1], Akira Koyama[2], Kaoru Okazaki[3], Masatoshi Kondo[3], Chikako Morioka[1], Kenichi Kashimada[1,*], Tomohiro Morio[1]

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Abstract Text:

Background:
Although chorioamnionitis (CAM) has been demonstrated to be associated with numerous short- and long-term morbidities, the precise mechanisms remain unclear. One of the reasons for this is the lack of appropriate models for analyzing the relationship between the fetal environment and chorioamnionitis and fetal programming in humans. Recent reports suggest that umbilical cord-derived mesenchymal stem cells (UCMSCs) may have the capacity to reflect fetal programming and could be used as an *in vitro* model.

Objective:
In this study, we aimed to clarify the fetal programming caused by CAM using UCMSCs.

Material and Method:
From nine very low birth weight preterm neonates with CAM (n=4) or without CAM (n=5), we established UCMSCs and subsequently analyzed their gene expression profile and cell function. The diagnosis of CAM was based on clinical and histological findings, and Blanc classification II or severer CAM cases were included in this study.

Result:
The gene expression profiles obtained by RNA-seq analysis revealed distinctive changes in the CAM group USMSCs. The UCMSCs in the CAM group had a myofibroblast-like phenotype with significantly increased expression levels of myofibroblast-related genes, including α-smooth muscle actin ($p<0.05$). In the pathway analysis, the genes involved in DNA replication and G1 to S cell cycle control were remarkably decreased, suggesting that cellular proliferation was impaired, as confirmed by the cellular proliferation assay and cell cycle assay. Pathway analysis also revealed that genes related to white fat cell differentiation were significantly increased.

Conclusion:
Our analyses revealed that CAM affected dramatically the characteristics of UCMSCs, which could explain the long-term outcomes of patients who were exposed to CAM and revealed that UCMSCs could be an *in vitro* model of fetal programming affected by CAM. Besides, for future utilization of autologous cell treatment, CAM would affect the outcome of the therapy.

Keywords: UCMSCs, fetal programming, transcriptome analysis, cell cycle

Abstract ID: A-0054

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Poster	E-Poster	Neonatal	Research Study

Abstract Title:

Oxygenation Saturation Index as a Marker of Neonatal Hypoxemic Respiratory Failure

Authors & Institutions:

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Abstract Text:

Objective:
To investigate the relationship between hypoxemic respiratory failure (HRF) biomarkers, including oxygenation saturation index (OSI) and ratio of percutaneous oxygen saturation (SpO_2) to fraction of inspired oxygen (S/F)

Study design:
Between January 2013 and 2020, 77 neonates (gestational age 31.7 ± 6.1 weeks; birth weight 1768 ± 983 g) requiring invasive mechanical ventilation for respiratory disorders were recruited, totaling 1226 arterial blood gas samples. We calculated the oxygenation index (OI), OSI, and S/F ratio from medical records. We performed regression analysis to evaluate the correlation between OI and OSI in all samples, those with SaO2 ≤98%, and the first sample obtained after ventilator management. The optimal cut-off point of the OSI and S/F ratio for predicting HRF severity was calculated based on the Montreux definition of neonatal acute respiratory distress syndrome (ARDS); mild ARDS: 4 ≤ OI < 8, moderate: 8 ≤ OI < 16, and severe: OI ≥ 16.

Results: Overall, OI and OSI showed a positive correlation, which improved when the analysis was limited to samples with SaO2 ≤98%. Receiver operating characteristic curve analysis based on mixed effect modeling using only SaO2 ≤98% samples showed that OSI and S/F ratio could robustly predict HRF. Furthermore, the optimal cut-off points of OSI and S/F ratio for predicting severe HRF were 7.5 and 201, respectively. Similarly, the optimal cut-off points of OSI and S/F ratio for predicting moderate HRF were 4.5 (98.2%, 95.3%) and 306 (98.2%, 92.2%), and those for predicting mild HRF were 2.5 (95.0%, 91.6%) and 325 (89.3%, 90.8%), respectively.

Conclusion: OSI and S/F ratio are useful predictors of neonatal HRF. As evaluation of these parameters allows continuous monitoring of changes in oxygenation in neonates in a non-invasive manner, this approach has the potential for wider clinical application.

Keywords:

oxygenation saturation index; ratio of percutaneous oxygen saturation to fraction of inspired oxygen; neonatal hypoxemic respiratory failure; non-invasive markers

Abstract ID: A-0055

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Lower Birth Weight in Newborns with Trisomy 18 and Esophageal Atresia

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Abstract Text:

Background:
The effects of medical and surgical interventions on the survival of patients with trisomy 18 (T18) have been reported, leading to changes in perinatal management and decision-making. In patients with T18 who have esophageal atresia (EA), attending physicians and the family sometimes conflict regarding the use of surgical interventions due to their small body sizes. Here, we hypothesized that T18 newborns with EA have a lower birth weight, which affects the selection of the surgical procedure.

Objective:
To characterize T18 newborns with EA at our hospital over the last 27 years.

Methods:
T18 newborns delivered at our tertiary NICU between 1994 and 2020 were retrospectively reviewed. Clinical information was extracted from our hospital database, and we then made comparisons between the T18 newborns with and without EA.

Results:
A total of 101 newborns with T18 were reviewed, with 33 having EA with tracheoesophageal fistulae (TEF) (Gross type C). T18 newborns with EA presented significantly higher rates of polyhydramnios and threatened preterm labor than those without EA (91 vs. 51%; 79 vs. 52%, respectively). The gestational age and body weight (BW) at birth were significantly lower in T18 newborns with EA than those without EA (35.3 vs. 36.9 weeks; 1,282 vs. 1,626 g, respectively). Among 33 newborns with T18 who had EA, 23 (70%) received surgical treatments. However, only 5 received radical repair for EA and the other 18 underwent palliative surgeries such as esophageal banding or TEF division.

Conclusions:
We found that T18 newborns who had EA were born preterm and smaller, probably due to severe polyhydramnios, which limited the selection of surgical procedures. Although this was a retrospective study at a single center, the observation of a low BW in combination with an accurate prenatal diagnosis of EA are important information when counseling parents of T18 newborns.

Keywords:

trisomy 18, esophageal atresia, surgical intervention, body weight

Abstract ID: A-0057

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

A Prospective Study of Respiratory Support Requirements, Bronchopulmonary Dysplasia and Outcome of Premature newborns in a Tertiary Hospital, Kuala Lumpur.

Authors & Institutions:

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Abstract Text:

Introduction:
Prematurity is the leading cause of death for children under five years old. Current technology and nursing care have increased the survival rate of premature newborns.

Objective:
We aimed to determine the requirement of respiratory support at birth, outcomes at first discharge from the hospital (or at 40 weeks gestation) and associated factors for bronchopulmonary dysplasia(BPD).

Methodology:
A prospective non-interventional study of newborns delivered between 25^{+0} to 33^{+6} gestational weeks from 1st July 2020 till 31st July 2021 in a tertiary centre, Kuala Lumpur.

Results:
There were 358 premature newborns included. Following the WHO classification of prematurity, there were extremely preterm, very preterm and moderate to late preterm of 43(12%), 138(38.5%) and 177(49.4%), newborns respectively. There was significantly higher need for intubation and ventilation, high-frequency oscillatory ventilation (HFOV), non-invasive ventilation (NIV), oxygen supplementation and surfactant therapy among extreme and very preterm($p<0.001$) newborns. Very preterm newborns developed more necrotizing enterocolitis (NEC), intraventricular haemorrhage (IVH), anaemia requiring blood transfusion, patent ductus arteriosus (PDA) in failure and bloodstream infection compared to moderate to late preterm. The overall mortality rate was 8.9%. Of those who survived to 36 weeks of gestational age, 16% developed BPD. Univariate analysis of factors associated with BPD was low birth weight, intubation, HFOV, NIV, oxygen, surfactant therapy, NEC, IVH, anaemia requiring blood transfusion, PDA in failure, clinical sepsis and bloodstream infection. Multivariate analysis showed that low birth weight, oxygen requirement, anaemia requiring blood transfusion, and PDA in failure were associated with BPD development. The median age at discharge was 36^{+1} gestational weeks, and the median duration of hospital stay was 30.5 days. About 13.6% of premature newborns required hospitalization beyond 40 weeks of gestational age.

Conclusion:
In general, premature newborns were associated with high respiratory support at birth with high mortality and morbidities that imposes an economic burden on a country.

Keywords: Newborn, Premature, Bronchopulmonary dysplasia

Abstract ID: A-0058

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Calorie-protein intake and growth status in very preterm babies: a preliminary analysis.

Authors & Institutions:

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Abstract Text:

Introduction
Preterm babies need a calorie intake of parenteral 90-120 kcal/kg/day or enteral 110-135 kcal/kg/day (EPSGHAN recommendation) to achieve an in-utero third trimester growth velocity of 15 g/kg/day (AAP guideline). The protein intake should concurrently be adequate at 2.5-3.5g/kg/day from day 2 of life (EPSGHAN) to maintain a protein energy ratio PER of 3.2-4.1 g/100 kcal. The objective of this study is whether very preterm babies receive adequate calories and protein intake, and the impact on their growth.

Methodology
Prospective cohort study on preterm babies with birth weight ≤1500g and gestation ≤32 weeks was conducted in 2020. The calorie-protein intake and body weight were monitored in the first 4 weeks of life. A comparison will be made between infants weighing ≤1000g (G1) and 1005-1500g (G2).

Results
There were 221 babies, 89 in G1 and 132 in G2. The mortality rate was 21.7%. Ten babies had NEC (4.5%), and 5 died. The birthweight was 1074±275g and gestation 28.9±2.5g. The age at achieving full enteral feeding was 16.4±9.3days and 115 kcal/kg/day was 23.2±10.3days (longer for G1, p=0.010). At 21 days, the calorie intake was 106.0±22.6 kcal/kg/day (less for G1, p=0.047). It required 28 days to achieve 3.00±1.1 g/kg/day of protein. The mean PER was less than 2.6 g protein / 100 kcal throughout the 4 weeks. The average z scores were -0.59±0.76 at birth, -2.18±0.73 at 28 days and -2.64±0.73 at 36w postmenstrual age. The mean growth velocity by the exponential method was 5.1±3.6 g/kg/day at 28 days and 8.8±3.1 g/kg/day at 36w PMA.

Discussion
The calorie-protein provision and weight status of very preterm babies are suboptimal even for those 1005 to 1500g birthweight. A greater effort to intensify parenteral and enteral feeding is required to reduce long-term nutritional morbidities in these vulnerable babies.

Keywords:

very preterm, calorie-protein intake, growth status

Abstract ID: A-0059

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Association Between Antenatal Corticosteroid and Severity of Respiratory Distress Syndrome: A Single Centre Experience in East Malaysia

Authors & Institutions:

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Abstract Text:

Background
Respiratory Distress Syndrome (RDS) is one of the predominant respiratory diagnoses for newborns in Malaysia but it was not well studied in East Malaysia.

Objectives
We aim to identify the association between the number of antenatal corticosteroid (ACS) doses received with severity of RDS and effects of rescue dose ACS in newborns in our centre.

Methodology
Newborns diagnosed with RDS at birth in SWACH between April 2021 and December 2021 were studied. Those with other congenital lung pathology were excluded. ACS was given to mothers based on local protocol. Data on the staging of RDS, number of surfactants required, highest FiO2 requirements and highest ventilation mode were obtained using a standardized audit form and data was analysed using SPSS v26.

Results
A total 144 newborns with RDS were included with a median gestation of 32.4 weeks (27 - 37.6 weeks) and median birth weight of 1.665kg (0.72 - 3.68kg). The number of ACS did not show any association with the stages of RDS (p=0.877), numbers of surfactant required (p= 0.230), highest ventilation mode (p=0.739) and highest FiO2 (p=0.072). It showed association with complication of BPD (p=0.010), but further regression analysis was unable to explain the correlation (p=1.0, OR 1.0, 95% CI= 0.116-8.637). Newborns that received rescue dose ACS (n=8) showed no association with the stages of RDS (p=0.092), doses of surfactant required (p=0.716), highest ventilation mode (p=0.791) and highest FiO2 (p=0.592) compared to those did not receive any doses. They also did not show restricted growth in terms of birth weight (p=0.76), length (p=0.978) and head circumference (p=0.25), compared to those who did not receive.

Conclusion
We found no significant association between number of ACS received and severity of RDS in our centre, however this could be due to the small sample size of this study.

Keywords:

antenatal corticosteroid; respiratory distress syndrome.

Abstract ID: A-0060

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Incidence and Risk Factors of Retinopathy of Prematurity in Premature Neonates in a Tertiary Neonatal Center

Authors & Institutions:

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Abstract Text:

Background
Retinopathy of prematurity (ROP) is a vaso-proliferative disorder in premature infants. It remains an important preventable cause of blindness in infants.

Objectives
This study aims to describe the incidence of ROP amongst premature infants born in Hospital Tunku Azizah (HTA) and its associated factors.

Methods
This is a retrospective review of all inborn infants screened for ROP in HTA, from 1 October 2019 to 31 October 2021.

The screening criteria are premature infants born ≤ 32 weeks gestation and/or birth weight ≤ 1500g. After subject identification, the medical records of each subject were reviewed from the electronic hospital information system.

Results
During the study period, 104 (23.7%) of the 438 infants who underwent screening had ROP. 10 (9.6%) of the infants with ROP had severe disease and all of them regressed after treatment. ROP was associated with female gender (Odds ratio (OR) 1.59, 95% confidence interval (CI) 1.01-2.44), maternal gestational diabetes mellitus (GDM) (OR 1.54, 95% CI 0.97-2.47), maternal chorioamnionitis (OR 2.54, 95% CI 0.038), late onset sepsis (OR 3.27, 95% CI 1.73-6.16), blood transfusion (OR 4.25, 95% CI 2.67-6.76), significant intraventricular haemorrhage (OR 5.53, 95% CI 2.08-14.6), bronchopulmonary dysplasia (OR 5.32, 95% CI 3.31-8.55), increased respiratory support, lower gestational age and lower birth weight. On multivariate analysis, ROP was associated with maternal GDM (OR 1.85), female gender (OR 2.01), lower birth weight, lower gestational age and increased respiratory support.

Conclusion
ROP remains an important complication of prematurity. Improvement in both antenatal maternal and neonatal care would help to reduce the incidence of ROP.

Keywords:

Incidence, Risk Factors, ROP

Abstract ID: A-0061

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

A Neonate with Severe Protein C Deficiency - Clinical Manifestations and Management

Authors & Institutions:

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Abstract Text:

Background
Homozygous protein C deficiency is an extremely rare genetic condition affecting approximately 1 in 400 000 to 1,000 000 live births. It is associated with catastrophic and fatal *purpura fulminans* or thrombotic complications with disseminated intravascular coagulation. Symptoms may develop within a few hours of life or days after birth. Early recognition of such patients may be life-saving.

Report
We report a case of a male newborn delivered prematurely at 34 weeks gestation with a birth weight of 2.54kg. He developed spontaneous *purpura fulminans* over both gluteal regions, feet and scalp on day 2 of life. These lesions progressively worsened within the next 24 hours. He also had intracerebral bleed but no midline shifts or obvious neurological deficit. Ophthalmology review showed an intraocular involvement with persistent hyperplastic primary vitreous. Thrombophilia screening noted protein C level of 3.76%. However, the sample was taken after 1 unit of fresh frozen plasma (FFP) and this level is likely to have been lower if taken before the transfusion. He was treated with regular FFP transfusion for protein C replacement as protein C concentrate is not available in Malaysia. Enoxaparin 1.5mg/kg given twice daily as an anticoagulant. He showed an excellent response to the above measures with complete resolution of *purpura fulminans* within a week. Further imaging did not show any evidence of renal or cerebral vein thrombosis. This patient requires lifelong protein C replacement and anticoagulant.

Conclusion
Considering the rarity and potentially irreversible outcomes of severe protein C deficiency, prompt recognition and timely intervention can highly impact prognosis. In countries where the protein c concentrate is not available, FFP combined with enoxaparin can be used with excellent outcome. We report this case to highlight the recognition of early onset neonatal *purpura fulminans* in preventing morbidity and mortality.

Keywords:

protein c, purpura fulminans

Abstract ID: A-0062

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Real Time Ultrasound Guided Umbilical Vein Catheterization - The UltraCath Study

Authors & Institutions:

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Abstract Text:

Background
Umbilical vein catheterisation is a safe and effective route for administration of various medications and fluids especially in sick neonates with limited venous access. The appropriate placement of the catheter tip has been conventionally determined using plain X-rays. However, malposition is commonly seen and leads to inadvertent risks, complications and increases radiation exposure.

Objectives
The aim is to determine the efficacy and feasibility of ultrasound guided umbilical vein catheterization in reducing malposition and radiation exposure in neonates.

Methods
This is a prospective cohort study done in our neonatal intensive care unit (NICU). Neonates admitted from 1/6/2021 – 27/4/2022, who require umbilical vein catheterization and fulfilling the inclusion criteria were selected. They were divided into 2 groups, the intervention (ultrasound-guided) and control (conventional) group. Ultrasound was performed by medical officers who were trained for this intervention purpose. Data was then tabulated and analysed.

Results
119 umbilical vein catheterization were included fulfilling the inclusion criteria with a mean gestational age of 34 weeks and birth weight of 2.14kg. The proportion of malposition in the intervention group was 14.5% compared to 57.8% in the control (RR 0.25, 95% CI 0.1238 - 0.5152, p=0.0002). The proportion of increased radiation exposure in the treatment group was 14.5% compared to 55% in the control group (RR 0.27, 95% CI 0.1297 - 0.5434, p=0.0003). These results are very encouraging and implies the beneficial role of ultrasonography.

Conclusion
Ultrasound is a reliable modality in detecting malposition and preventing its complications. It reduces multiple cannulations and radiation exposure to neonates. This intervention is cost-effective, easily replicable, and the physicians can be easily trained to do it. The findings of this study facilitates the usage of interventional ultrasonography in our daily practice.

Keywords:

umbilical vein catheterization, ultrasound guided, neonates

Abstract ID: A-0063

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Congenital Cytomegalovirus Infection: a Case Report on a Symptomatic Infant with Mega Cisterna Magna

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Abstract Text:

Background:
Congenital cytomegalovirus infection (cCMVI) is one of the most common congenital infection that cause significant morbidity and mortality. The data on prevalence of symptomatic cCMVI in Malaysia is still limited. We reported an infant with incidental finding of mega cisterna magna on prenatal scan who turned out to have symptomatic cCMVI.

Case Report:
A baby boy, born at 38 weeks with a birth weight of 2.16kg, was referred at birth for mega cisterna magna. Detailed scan at 25 weeks showed mega cisterna magna. Amniocentesis at 28 weeks showed normal karyotyping of 46, XY. Mother's TORCHES screening reported as CMV IgG positive while IgM negative. MRI Fetus at 34 weeks showed mega cisterna magna and colpocephaly.

Tests for TORCHES sent on day 2 of life were positive for CMV IgM. CMV (PCR) was also detected in the urine. Postnatal MRI Brain on Day 26 of life showed presence of mega cisterna magna and periventricular calcification. Hearing assessment (AABR) showed hearing loss bilaterally. Baby was started on IV Ganciclovir on Day 28 of life for 6 weeks. He was discharged with oral Valganciclovir for a total duration of treatment of 6 months.

Discussion:
Majority of children with cCMVI are asymptomatic at birth. Finding of mega cisterna magna during prenatal scan should warrant screening for cCMVI. After birth, detailed clinical examination and timely investigation are important in establishing the diagnosis. Treatment should be discussed with the parents, and to be commenced within the first 30 days of life to improve hearing and neurodevelopmental outcome.

Conclusion: Presence of mega cisterna magna in prenatal scan should prompt an investigation for congenital infection such as CMV. Treatment may be offered to symptomatic patients after balancing the risks and benefits.

Keywords:

neonatal, congenital infection, cytomegalovirus, prenatal, mega cisterna magna

Abstract ID: A-0064

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Poster	E-Poster	Obstetrics	Research Study

Abstract Title:

Prescriptions of Anti-Rheumatic Drugs for Women of Childbearing Age in Japan: An Analysis of Real-World Data from Nationwide Claims-Based Database

Authors & Institutions:

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Abstract Text:

Background:
Rheumatoid arthritis (RA) develops frequently at reproductive age and may require treatment with one or several disease-modifying antirheumatic drugs (DMARDs). However, some DMARDs have been associated with increased teratogenic risk, and newer agents lack safety information during pregnancy.

Objective:
This study aims to evaluate the prevalence of RA among women of reproductive age, prescriptions of DMARDs including biologics in recent years, and fertility of women with RA, using real-world data (RWD) in Japan.

Material and Methods:
This is a retrospective cohort analysis using a nationwide claims-based database in Japan (JMDC). We used the data of 2,645,758 women 15-49 years of age. Women who had at least one prescription for a specific anti-rheumatic drug with Anatomical Therapeutic Chemical Classification System (ATC) were considered RA-affected women.

Results:
There were 7,536 (0.28%) women prescribed DMARDs and 2,638,212 women were not prescribed. A year-by-year analysis shows that methotrexate was the most common (35%), followed by prednisolone (22%), salazosulfapyridine, tocilizumab, and etanercept among women with RA in 2018. Biologics have been increasing in recent years as a prescribing trend. When comparing RA and non-RA women in terms of getting pregnant, RA women were less likely to be pregnant (412 (5.5%) vs. 166,337 (6.3%), p=0.0028, Odds ratio 0.859, 95%CI 0.77-0.94)).

Conclusion:
RA women were significantly less likely to be pregnant. In this study, we examined the prescription of DMARDs in women of childbearing age and compared the presence of pregnancy in RA and non-RA women. Further research is needed to better understand how to treat RA before, during, and after pregnancy.

Keywords: Pregnancy, Rheumatoid arthritis, anti-rheumatoid drugs, prescriptions, real-world data

Abstract ID: A-0066

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Probiotics for Prevention of Necrotising Enterocolitis in Preterm Infants

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Abstract Text:

Background
Necrotising enterocolitis (NEC) affects predominantly preterm infants.

Objective
We aim to evaluate the use of probiotics in the prevention of NECs in preterm infants.

Methods
This is a retrospective case-control study done in NICU of Sabah Women and Children Hospital, Kota Kinabalu from July 2018- June 2020. The study population consists of all preterm infants with very low birth weight (less than 1.5kg) or gestation less than 32 completed weeks. Our centre introduced the use of multi-strain probiotics (HEXBIO) from June 2019, based on the criteria mentioned above. Patients' data were extracted using the Malaysian National Neonatal Registry (MNNR).The study population was divided into 2 groups: (1) the control group - before the use of probiotics and (2) the group with probiotics. The risk factors associated with NECs among these 2 groups were evaluated, including maternal age, intrapartum antibiotics, birth weight, as well as co-existing prematurity complications such as RDS and PDA. The main outcome, which is the incidence of NEC stage ≥2 (according to Bell's criteria), is then compared. Statistical analysis was done using SPSS Version 26.

Results
242 preterm infants were identified in the control group, and the incidence of NECs is 11 (4.5%). A total of 255 preterm infants were recruited in the probiotics group, and the NECs cases comprise of 6 (2.4%).
These 2 groups shared a similar background in terms of the possible factors affecting the risk of NECs.
As a result, there is an absolute risk reduction of 2.1% and this yields a relative risk of 0.5 (2.4%/4.5%), which means the chance of NEC is twice as likely to occur without probiotics.

Conclusions
This study shows an overall preventive effect of probiotics on NEC in preterm infants. Further large-scale placebo-controlled trials are still needed to provide conclusive evidence.

Keywords:

NEC, prematurity, probiotics

Abstract ID: A-0067

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Acute Myocarditis Complicating RSV Infection in Infants

Authors & Institutions:

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Abstract Text:

Introduction
Acute myocarditis is not common in infants but it is associated with severe morbidity. Infection by a virus, especially Coxsackievirus B has been the most widely reported. Here we report 3 cases of myocarditis associated with RSV infection within a six-month period.

Case presentation
Three premature babies that were awaiting weight gain were diagnosed to have RSV infection when they developed 'pertussis-like cough'. RSV was confirmed to be present in nasopharyngeal aspirates. Myocarditis was suspected due to persistent tachycardia and the diagnosis was confirmed by abnormal cardiac function on echocardiography and elevated serum Troponin T levels.
All 3 babies developed ARDS and required multiple inotropic supports. Intravenous immunoglobulin was given. All 3 babies survived the event.

Conclusion
Acute myocarditis needs to be suspected in infants with a viral illness who developed unexplained tachycardia.

Keywords:

Respiratory Syncytial Virus, myocarditis, neonate,

Abstract ID: A-0068

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Rare Cause of Absent Pulses in the Lower Limbs

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Abstract Text:

Introduction
Thrombotic complications have been well described with the use of umbilical arterial lines, but fatal complications are rare.

Report
A baby with Down syndrome was treated in a peripheral hospital for meconium aspiration syndrome with persistent pulmonary hypertension of the neonate. On day 5 after birth the baby was referred to our tertiary centre for the management of acute kidney injury with anuria.
Upon admission the pulses in the lower limbs were not palpable and an urgent echo showed that there was no coarctation or interruption of the aortic arch. Ultrasound Doppler revealed a very extensive thrombosis of the descending aorta. Retrospective review revealed that the umbilical artery catheter that was initially inserted had coiled in the lower part of the descending aorta. It had been removed and a new umbilical artery catheter had been inserted on day 1 after birth.
After removal of the catheter, the baby received treatment with a thrombolytic agent and peritoneal dialysis. The baby was not stable enough for thrombectomy. The baby developed multi organ failure and when the condition deteriorated parents were allowed to hold the baby during the final moments of the baby's life.

Conclusion
Fatal complications of umbilical arterial lines are rare. This baby developed extensive thrombosis of the descending aorta and succumbed to multi organ failure.

Keywords:

Umbilical arterial catheter, thrombosis, descending aorta, neonate

Abstract ID: A-0069

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Poster	E-Poster	Neonatal	Research Study

Abstract Title:

Does Protocol Miconazole Administration Improve Mortality and Morbidity on Surgical Necrotizing Enterocolitis?

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Abstract Text:

Background:
Our previous study reported that miconazole (MCZ) had anti-inflammatory effects and prevented the development of gastrointestinal perforation in premature infants. The purpose of this study was to investigate the potential favorable effect of MCZ administration on necrotizing enterocolitis (NEC) in premature infants.

Methods:
Out of 1172 premature infants, 15 patients with NEC (1.3 %) underwent surgery between 2011 and 2020. Protocol MCZ administration for 3 weeks was applied for neonates born at < 26 weeks' gestation or weighing < 1000 g. We compared MCZ (+) with MCZ (-) regarding background characteristics, clinical outcome and neurological prognosis using the Kyoto Scale of Psychological Development (Developmental Quotient: DQ). DQ included three domains as follows; postural-motor domain, cognitive-adaptive domain, language-Social domain.

Results:
MCZ (+) NEC patients [gestational age: 25 (23-26) weeks, birth weight: 665 (565-781) g] had significantly earlier birth and lower birth weight comparing with MCZ (-) NEC patients [gestational age: 29 (27-30) weeks, birth weight: 1004 (944-1429) g]. MCZ (+) NEC patients (29 [25-30] day) underwent surgery 10 days later comparing with MCZ (-) NEC patients (19 [16-21] day). Body weight at surgery of MCZ (+) NEC patients were almost same as those of MCZ (-) NEC patients in spite of smaller birth weight (p= 0.142). Mortality had no significant difference between NEC patients with and without MCZ (p= 0.600). There were no significant differences of DQ of all domains at 1.5 years of corrected age [MCZ (+): 79 [58-93], MCZ (-): 91 [87-96], p=0.248] and at 3 years of chronological age [MCZ (+): 84[56-87], MCZ (-): 86 [85-87], p=0.374], respectively.

Conclusion: Protocol MCZ administration did not improved mortality, but it delayed the onset of NEC in neonates born at < 26 weeks' gestation or weighing < 1000 g and thus kept the DQ level of those patients.

Keywords:

miconazole, necrotizing enterocolitis

Abstract ID: A-0070

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

A Descriptive Study of Neonatal Encephalopathy (NE) in the Neonatal Intensive Care Unit of Seri Manjung Hospital in Perak, a District Hospital in Malaysia

Authors & Institutions:

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Abstract Text:

Introduction:
Neonatal encephalopathies, especially those associated with Hypoxic Ischaemic Encephalopathy(HIE), still occur despite advances in neonatal care. There's little literature on the incidence and outcome after hospital discharge in the local setting.

Objective:
1) To estimate the incidence of moderate to severe HIE. 2) To estimate the percentage of moderate to severe HIE infants with MRI changes and developmental delays.

Methods:
All infants born at 35 weeks' gestation and above in 2021 diagnosed with neonatal encephalopathy were identified. HIE was classified as mild, moderate, and severe. Incidence of those with moderate to severe HIE was estimated.

Results:
In 2021, 4000 live births were born in HSM. 52% of them were admitted to the neonatal intensive care unit for various neonatal conditions that required admission. A total of 17 of these admissions met the criteria for NE. The overall incidence of moderate-to-severe HIE was 3.5 per 1000 live births and one death. Two infants had evidence of a perinatal event. MRI changes and developmental delays were documented at follow-up in 23% of infants with moderate-to-severe HIE.

Conclusion:
Moderate-to-severe HIE is uncommon. However, these infants require intensive care during therapeutic cooling. Those with MRI changes and developmental delays require long-term medical care.

Keywords:

Live births, therapeutic cooling, moderate to severe HIE, developmental delay

Abstract ID: A-0071

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Exploring the Use of Telemedicine Online Consultation for Premature Infants less than 34 weeks: A Tertiary Centre Experience

Authors & Institutions:

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Abstract Text:

Background:
We aim to understand the experiences of caretakers and doctors when medical consultation among premature infants less than 34 weeks was conducted online using a specifically designed clerking template as a guide for the online consultation of premature infants.

Objective:
To understand the experiences of caretakers and doctors with online consultation in premature infants less than 34 weeks. A qualitative study.

Methods:
A clerking template was designed for guidance. Recruitment was done in the paediatric clinic of Hospital Universiti Sains Malaysia, Kelantan, from June 2021 until July 2021. Eligible caretakers were contacted via WhatsApp video call by doctors. Questionnaires with open-ended questions were given to the caretakers and doctors after the online consultations.

Results:
Of 19 caretakers who were identified, 12 participated, and the online consultations were conducted by four doctors. Developmental assessment manoeuvres were performed, and it took between 19 to 34 minutes (mean of 26 minutes) for a video call session to be completed. The usage of a phone holder or tripod facilitated the session, especially when one parent was in the session. The majority of the participants were able to perform developmental assessment manoeuvres during the online consultation sessions with guidance and demonstration by attending doctors using a manikin. A post-consultation evaluation session showed satisfaction of both participants, i.e. caretakers and doctors.

Conclusion:
Telemedicine online consultation may be an alternative medium for neonatal developmental follow-up, and it may be feasible in Malaysia by using the WhatsApp application, especially during times of crisis, like the COVID-19 pandemic.

Keywords:

consultation; development assessment; experience; premature infant; telemedicine

Abstract ID: A-0072

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Retrospective Analysis on Implementation of Kangaroo Mother Care in Hospital Miri NICU

Authors & Institutions:

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Abstract Text:

Introduction:
Preterm birth rate in our centre makes up 10% (n=487) in 2019 and 11% (n=491) in 2020 of the live births, with mortality rate of 3% for preterm infants less than 33 weeks. According to WHO and Cochrane review (2016), Kangaroo mother care helps to reduce mortality, nosocomial infection, hypothermia, and improved growth and exclusive breastfeeding.

Methodology:
Kangaroo Mother Care (KMC) Project was introduced in 2020 in Hospital Miri NICU as part of a quality improvement project. Stable preterm infants with postmenstrual age 30 weeks to 34 weeks 6 days were enrolled with mother's consent into the project.

Result:
A total of 41 infants with the gestation of 32 to 34 weeks 6 days participated, 22 (53.7%) with majority of 41.5% aged 34 to 34 weeks 6 days post menstrual age at the time of enrolment. Mean length of stay was 38.34 days (SD:24.4), time taken to achieve birth weight was 11.4 days (SD: 4.05). Time taken to initiate breastfeeding ranges from 8 to 14 days to >22 days of life, mean: 24.78. Eighteen infants (43.9%) achieved exclusive breastfeeding on discharge. Mother's mental health, knowledge and experience were measured using Likert scale with the total score of 15 for mental health and 18 for knowledge and experience. For mental health score, pre-KMC median score:14, post-KMC median score was 15. There was improvement in the mother's experience upon discharge (p-value: <0.001). For overall experience, the median was 18 with the mean score of 16.88 (SD:1.56).

Conclusion:
Our study was suspended prematurely as per local pandemic control guideline. Knowing about the benefit of KMC to both mother and infants, we suggest that it should be encouraged and continued with adaptation and modification of the procedure during COVID-19 pandemic.

Keywords:

Kangaroo Mother Care, Hospital Miri

Abstract ID: A-0073

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Lissencephaly due to fumaric aciduria: A rare entity

Authors & Institutions:

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Abstract Text:

Fumaric aciduria is an autosomal recessive metabolic disorder characterized by early onset but non-specific clinical signs: hypotonia, psychomotor impairment, convulsions, respiratory distress, feeding difficulties and frequent cerebral malformations, along with a distinctive facies. This rare entity is caused by mutations in the Fumarate hydratase (FH) gene.

Our case highlights the course of an Asian boy who was born via vaginal delivery at 36 weeks gestation with a birth weight of 2.46kg. Antenatal scans since the second trimester detected bilateral ventriculomegaly with dilated third ventricle and smooth sulci and gyri. Amniocentesis for fetal karyotyping, microarray and TORCHES screen were unremarkable. Postnatally, he was dysmorphic with a broad forehead, hypertelorism and ectopic anus. Initial MRI brain showed Type II lissencephaly with ventriculomegaly and corpus callosum dysgenesis. Other organ abnormalities included perimembranous ventricular septal defect with patent ductus arteriosus. He was initially supported with non-invasive ventilation, but subsequent progress was stormy with recurrent pneumonias, and required invasive ventilation by Day 15 of life. At 1 month of life, he developed conjugated hyperbilirubinaemia, and metabolic testing with urine organic acid showed a large peak of fumaric acid. Whole exome sequencing then detected a pathogenic FH mutation, and a mutation variant-of-unknown significance (VUS). This led to the probable diagnosis of fumaric aciduria.
Further attempts to wean off ventilator were unsuccessful due to profound apnoea and irregular breathing efforts, and multiple acute life threatening events requiring cardiopulmonary resuscitation that was attributed to autonomic dysfunction. In view of the grave prognosis, withdrawal-of-ventilation was pursued after discussion with the parents, and the patient succumbed on Day 89 of life. Thus, our case shows the value of considering this rare diagnosis in a dysmorphic patient with abnormal brain gyration and sulcation.

Keywords:

neonatology; fumaric aciduria; lissencephaly

Abstract ID: A-0074

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

The Use of Amplitude-Integrated Electroencephalography (aEEG) in a Neonatal Intensive CareUunit, a Single Center Study.

Authors & Institutions:

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Abstract Text:

Introduction
Amplitude-Integrated Electroencephalography (aEEG) has been used increasingly in neonatal units to enhance neurological monitoring of patients. In the Neonatal Intensive Care Unit (NICU) it is particularly useful in monitoring patients with neonatal encephalopathy and neonatal seizures. Using a 4-channel recording of raw EEG data in a compressed time format, it captures background electrocortical activity, presence of sleep-wake cycling and electrographic seizure activity, which may not be clinically evident. Neonatologists interpret these recordings at bedside to aid in treatment and prognostication of affected patients. Complex cases are referred to neurologists for conventional Electroencephalography (cEEG).

Objectives:
To describe the use of aEEG monitoring in an NICU setting as well as to review the indications, technical adequacy and interpretations of the aEEG recordings in a neonatal unit.

Methodology
Retrospective analyses of aEEG data recordings as well as corresponding clinical data done in the NICU of Hospital Tunku Azizah from January 2020 to December 2020 were reviewed.

Results
Thirty-eight (n=38) patients had aEEG monitoring in the year 2020. Indications were neonatal encephalopathy (17, 44.7%) and neonatal seizures (21, 55.3%). 11 (64.7%) neonates with neonatal encephalopathy received cooling therapy. The causes for the 21 neonatal seizures were meningitis (7, 33.3%), electrolyte imbalances (4, 19.1%), severe intraventricular hemorrhage (3, 14.3%) and seizure disorders (7, 33.3%). 16 (42%) patients had both clinical and electrographic seizures. All 16 patients did not have clinical seizures following anti-epileptic therapy. However 8 (50%) patients had persistent electrographic seizures.

Conclusion:
The use of aEEG in a neonatal unit is imperative in monitoring and management of patients with high risk of cerebral dysfunction. Improving the skills and knowledge of clinical practitioners in NICU's on the use and interpretation of aEEG will further improve the standard of care of patients.

Keywords:

Amplitude-Integrated Electroencephalography, aEEG , neonatal encephalopathy , neonatal seizures

Abstract ID: A-0075

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Transient Functional Hypoparathyroidism in Infant of Diabetic Mother

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Abstract Text:

Background
Hypocalcaemia, hypomagnesemia and hyperphosphatemia are known metabolic complications in infants of diabetic mothers (IDM). These problems are related with functional hypoparathyroidism in these infants.

Report
We report a case of an infant of a diabetic mother who was initially admitted for being a macrosomia baby for observation. During the first 24 hours, she was well with no evidence of metabolic complications, both clinically and by lab results. She was discharged to her mom. She was readmitted at day 3 of life for neonatal jaundice and was noted to have hypocalcaemia, hypomagnesemia and hyperphosphatemia. The hypocalcaemia and hyperphosphatemia responded poorly to the usual treatment of calcium and magnesium corrections, and the use of calcium carbonate as the phosphate binder. However, after starting her on a megadose of Vitamin D, her hypocalcaemia and high phosphate slowly normalised.

Conclusion
This case highlights the metabolic complications of infants of diabetic mothers. The IDM needs regular electrolyte monitoring especially if the mother's diabetic control was poor. Educating the diabetic mom during pregnancy is very important to reduce the risk of related complications in the newborns.

Keywords:

Hypocalcaemia; Hyperphosphatemia; Hypoparathyroidism; Infant diabetic mother(IDM)

Abstract ID: A-0076

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Congenital Chylothorax: A Rare Neonatal Cause of Non-Immune Hydrops Fetalis

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Abstract Text:

Background:
Congenital chylothorax (CCT) is a rare cause of non-immune hydrops fetalis (NHF). We described a case of prenatally-diagnosed NHF which manifested as CCT at day 14 of life after introduction of enteral formula. Our case responded well to pleural drainage, parenteral nutrition, medium chain triglycerides (MCT) based enteral formula, and intravenous octreotide.

Report:
A preterm 34 weeks gestation male infant was diagnosed with hydrops fetalis (HF) on prenatal scan. There was no family history of hematological or genetic disorder. On the next day, he was delivered via cesarean section for fetal distress with birth weight 3kg. During neonatal resuscitation, the infant was unable to be ventilated hence bilateral pleural tapping was promptly performed to decompress the tension pleural effusion, draining 50cc haemoserous fluid. In NICU, he had required high frequency oscillatory ventilation (HFOV) with 2 inotropic supports. Bilateral chest tubes were inserted to drain the massive pleural effusion. His initial pleural fluid analysis was transudative in nature whilst investigations for NHF were negative. He first started enteral feeding on day 10 of life. However, 4 days later, his chest tubes drained chylous fluid. A raised pleural fluid triglyceride (2.1mmol/L) pointed towards chylothorax. Total parenteral nutrition (TPN), MCT- based enteral formula, and intravenous octreotide infusion were started on day 10, day 16, and day 26 of life respectively. He responded well to the combination of therapy. On day 32 of life, chylothorax resolved and he was extubated 2 days later. After 2 weeks of intravenous octreotide and 6 weeks of MCT- based enteral formula, he was rechallenged with term milk formula. At 3.5 months old, he was discharged home well without re-accumulation of chylothorax.

Conclusion:
Congenital Chylothorax is rare and lethal. Prompt decompression of pleural effusion, early recognition of chylothorax, and combination therapy are the key to our baby's survival.

Keywords:

Congenital Chylothorax, Hydrops Fetalis, Pleural Effusion, Pleural drainage, Total Parenteral Nutrition, Octreotide

Abstract ID: A-0077

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Research Study

Abstract Title:

Electrolyte Derangement in Hypoxic-Ischaemic Encephalopathy: Incidence, Predisposing Factors, and Discharge Outcomes

Authors & Institutions:

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Abstract Text:

Introduction:
Management of infants with hypoxic-ischaemic encephalopathy(HIE) requires close monitoring of electrolyte derangements. Sentinel events such as abruptio placenta cause primary energy failure, consequently leading to failure of Na/K pumps causing cerebral oedema, and microvascular brain damage. Early detection and prompt treatment of such derangement may improve HIE outcomes.

Aims:
a)To determine the incidence of serum sodium, potassium, and calcium derangements in patients with HIE within the first three days of life, b)To determine the predisposing factors associated with electrolyte disturbances in HIE patients, c)To compare electrolyte trends between 3 HIE categories, and, d)To determine the association between initial electrolyte disturbances and HIE discharge outcomes.

Method:
This was a retrospective study conducted over 11 years between January 2011 and December 2021. HIE patients with gestation age ≥35 weeks were recruited, where electrolyte status from days 1, 2, and 3 were analysed with descriptive analyses conducted to summarize the HIE incidence, mateal, and infant characteristics.

Results:
The HIE incidence rate between the years 2011 to 2021 was 0.81 per 1000 live births. A total of 48 of 65 patients(73.8%) had sodium abnormalities, whilst 44(67.7%) and 19(29.2%) had potassium and calcium abnormalities respectively. The lowest sodium levels were seen in patients with severe HIE. Although overall electrolyte disturbances were not associated with adverse discharge outcomes in patients with HIE, there was a significantly higher proportion of patients with abnormal sodium who died (83%). All severe HIE patients who required antiepileptic medications upon discharge had abnormal sodium.

Conclusion:
Electrolyte disturbances such as hyponatremia, hypokalemia, and hypocalcemia are common in HIE patients, with mean levels of sodium lowest in patients with severe HIE. Low sodium levels may be associated with adverse discharge outcomes in patients with severe HIE. Therefore, vigilant monitoring of electrolytes during the management of infants with HIE should be routinely recommended.

Keywords:

hypoxic ischaemic encephalopathy, electrolyte derangement, hyponatraemia, sentinel event

Abstract ID: A-0078

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Neonatal	Research Study

Abstract Title:

Predictors of Neonatal Organ Dysfunction Sepsis Scores for Mortality and Illness Severity in Late Onset Neonatal Sepsis

Authors & Institutions:

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Abstract Text:

Introduction:
Neonatal sepsis remains a leading cause of infant mortality. Prediction and detection of sepsis is difficult, relying on non-specific clinical signs and sepsis markers. Various scores have been used to monitor disease severity and predict neonatal mortality.

Method:
This retrospective cohort study conducted over a 5-years period in a tertiary teaching hospital, had compared two increasingly used predictive scores, i.e., neonatal multiple organ dysfunction score (NEOMOD) and the neonatal sequential organ failure assessment (nSOFA) for prediction of mortality and illness severity in neonates with late onset sepsis. Receiver operating characteristic (ROC) curves were plotted at maximum nSOFA and NEOMOD scores attained across all assessment time points, with the area under the curve (AUC) calculated; as well as at specific time points of 24-48 hours before sepsis, at sepsis diagnosis, post 24-48 hours, and at 7-hours after diagnosis.

Results:
Of 1851 infants, 419(22.6%) were preterms less than 32 weeks gestation. 88(4.7%) infants had late onset sepsis (LOS), where 81(92%) survived and 7(8%) succumbed. Indices such as base excess, intrauterine growth restriction (IUGR), number of hospital days, presence of periventricular leukomalacia, types of microorganism, platelet count and presence of necrotising enterocolitis were highly associated with mortality. The AUC value for nSOFA's ROC curve was 0.871 with 100% sensitivity and 27.7% specificity when the best cut-off score equalled to `3'. The AUC value for NEOMOD's ROC curve was 0.814 with 85.7% sensitivity and 35.0% specificity when the best cut-off score equaled `4'.

Conclusion:
Both scoring methods were comparable and prove to be reliable mortality predictive tools. Although the nSOFA score proved to be superior to the NEOMOD score in terms of sensitivity and specificity, the NEOMOD predicted mortality earlier. The NEOMOD was most reliable at 24-48 hours making it a more desirable tool, as nSOFA was most reliable only after 7-days post diagnosis.

Keywords:

illness severity score, nSOFA, NEOMOD, neonatal sepsis, mortality

Abstract ID: A-0079

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Mothers' and Healthcare Professionals' Decision-Making on Breastfeeding Choices During the Covid-19 Era: A Qualitative Study

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Abstract Text:

Introduction:
The Covid-19 pandemic has altered the normal course of life, with measures to reduce the virus spread impacting motherhood expectations, and breastfeeding practices.

Aim:
This study aimed to explore the perspectives of pregnant mothers and healthcare providers in making the decision for breastfeeding during the pandemic COVID-19.

Methods:
This is a qualitative study via semi-structured in-depth interviews. The study populations were pregnant mothers and healthcare providers of two tertiary referral hospitals in Malaysia. Subjects were selected via purposive sampling to achieve maximal variation. Mothers and healthcare providers fulfilling the inclusion and exclusion criteria were interviewed using a semi-structured topic guide until data saturation was achieved, followed by transcriptions, coding of keywords, and thematic analysis.

Results:
Ten pregnant mothers and ten healthcare providers were interviewed either virtually or face-to-face from March 2021 until January 2022. Five main themes, 'perceptions on breastfeeding during pandemic COVID-19', 'guidelines for breastfeeding during pandemic COVID-19', 'importance to protect breastfeeding during pandemic', 'the risk of viral transmission during breastfeeding', and 'involvement of parents in breastfeeding decision during pandemic' emerged from the analysis. The study has shown that breastfeeding practices have been significantly affected since the onset of the pandemic, with confusion regarding available guidelines, especially amongst healthcare providers. All the mothers had expressed their need to give their opinions included in the decision-making process.

Conclusion:
Although healthcare providers play a critical role in deciding infant feeding choices during the COVID-19 era, shared decision-making between healthcare providers and parents is important as mothers want their opinions to be included in the decision-making process. The study also supports the need to increase public and healthcare providers' awareness of the scientific evidence regarding WHO's COVID-19 breastfeeding recommendations. We recommend the existing local policies and guidelines incorporate the mothers' and healthcare providers' voices and enable shared decision-making.

Keywords:

Perspective, Decision-making, Breastfeeding, COVID-19

Abstract ID: A-0080

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

The Use of Erythropoietin in Premature Very Low Birth Weight Infants amongst Seremban Population to Prevent Anaemia of Prematurity

Authors & Institutions:

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Abstract Text:

Background:
Anaemia of prematurity is common in premature infants and the transfusion rate remains high. Recombinant human erythropoietin has been studied in multiple studies and is shown to be safe and effective in reducing the transfusion rate in premature infants.

Objective:
To assess the effectiveness of recombinant human erythropoietin in reducing the transfusion rate among premature VLBW infants in our neonatal intensive care unit(NICU) after the implementation of subcutaneous erythropoietin.

Methods:
A cross sectional observational study was performed among the premature VLBW infants who were admitted to our NICU from 1stApril 2021 till 1stApril 2022. Demographics, transfusion history and haemoglobin levels were recorded, analysed and compared with the data in 2020 before the introduction of subcutaneous erythropoietin. The dose of erythropoietin administered was according to the Starship clinical guidelines.

Results:
There were 137 premature VLBW infants from 1stApril 2021 till 1stApril 2022, of which 57 infants received erythropoietin according to our study protocol. 6 infants completed 12 doses of erythropoietin, and 32 infants received at least 6 doses. The main reasons for not completing erythropoietin were due to thrombocytosis or discharge once achieved 1.8kg. Among the 137 premature VLBW infants, 74(58%) were transfused. 17(53%) out of the 32 infants who received at least 6 doses of erythropoietin were transfused. In 2020, before erythropoietin was introduced, 74(66%) out of 112 premature VLBW infants were transfused. The mean gestational age and weight for both groups were comparable.

Conclusion:
Only half of the patients who received at least 6 doses of erythropoietin were transfused compared to 2/3 were transfused before erythropoietin was introduced, although it is not statistically significant. This could be due to the limited sample size of this study and other limitations. Further studies are needed to relook into the efficacy of erythropoietin in reducing transfusion rate among premature infants.

Keywords:

erythropoietin. premature very low birth weight infants

Abstract ID: A-0081

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Case Report : Multisystem Inflammatory Syndrome in Neonates with Adrenal Insufficiency.

Authors & Institutions:

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Abstract Text:

Background:
Vertical transmission and complications of maternal infections of SARS -COV2 to newborn infants is still under investigation. Most neonates had mild symptoms; however some might present with multisystem organ involvement and shock.

Report:
We report a case of a male term newborn with Multisystemic Inflammatory Syndrome in Neonate (MIS-N) with adrenal insufficiency.
He was delivered by elective caesarean section, at 38 weeks gestation, for maternal history of 2 previous scars.
The mother had underlying gestational diabetes mellitus with good glycaemic control (HbA1c :5.8%) and no risk of sepsis.She was diagnosed with SAR-COV-2 viral infection at 30 weeks gestation with mild upper respiratory tract symptoms.

The infant had developed symptoms of respiratory distress as early as 10 hours of life, with rapid progression to shock and multi-organ involvement. He showed persistent tachycardia, with cardiogenic shock and early coronary vessels inflammation and dilatation. He had features of pneumonitis on chest x ray and had required moderate ventilatory setting support.
He also had temperature instability, non specific macular rashes and hypoalbuminaemia. Inflammatory markers were high, with a positive SAR-COV-2 IgG antibody.He was treated with immunoglobulin, steroid and antiplatelet therapy. He was discharged well. The coronary vessels dilatation was transient, showing full recovery by 6 weeks of age. He was on prolonged low dose steroids, with evidence of some adrenal axis suppression, as a part of the complication of treatment.

Conclusion:
MIS-N could be part of manifestation of SAR-COV-2 infections in neonate. Early index of suspicion with recognition of symptoms will help in diagnosis and management.

Keywords:

Multisystem Inflammatory Syndrome in Neonates

Abstract ID: A-0082

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Neonatal	Research Study

Abstract Title:

Characteristics and Outcomes of Newborns with Ductal-Dependent Congenital Heart Disease in a District Hospital with Specialist

Authors & Institutions:

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Abstract Text:

Background:
Neonates with ductal-dependent congenital heart disease (dd-CHD) require a patent ductus arteriosus to maintain adequate circulation and oxygenation. Prostaglandin acts to temporarily maintain the ductus patent until surgical intervention is plausible. As there are limited centres in Malaysia with paediatric cardiology and cardiothoracic surgical expertise, the majority of neonates with dd-CHD are cared for in NICUs without in-house subspecialty support.

Objective:
To analyse the clinical outcomes and cost implications of managing neonates with dd-CHD prior to cardiac intervention; in a district hospital staffed with paediatricians.

Methods:
All neonates admitted to the NICU at Hospital Sultan Abdul Halim between August 2015 to December 2021; fulfilling the inclusion criteria were included. Demographic data, clinical course and prostaglandin therapy details were retrospectively obtained from electronic medical records.

Results:
Fifty-three patients with dd-CHD receiving prostaglandin therapy were included with a male-to-female ratio of 1.12:1. The most common diagnoses were pulmonary atresia/stenosis (n=16, 30.2%), transposition of great arteries with intact ventricular septum (n=14, 26.4%) and aortic arch anomalies (n=9, 17%). Forty-one (77.4%) survived after surgery with the current mean age of 3.3 years old (+/-2.0). From the study population, 28 have undergone palliative surgery (52.8%), 14 received corrective surgery (26.4%) and 5 received conservative care (9.4%) while 6 succumbed prior to surgery (11.3%). Seventy-percent received their first cardiac intervention after day 10 of life. We found a positive correlation between an increased prostaglandin usage and number of long lines requirement with a longer waiting time to surgery (p =0.01). Cost-analysis reveals an expenditure of approximately RM3 million on prostaglandin alone within the study period.

Conclusion: Neonates with dd-CHD receiving prostaglandin in a district hospital while awaiting surgical intervention generally have good outcomes. However, this is associated with high cost expenditure. Expansion of regional paediatric cardiology and cardiothoracic services may reduce cost, waiting times, morbidity and mortality rates.

Keywords:

Congenital heart defect (CHD), Patent ductus arteriosus (PDA), Prostaglandin, Newborns, Neonates

Abstract ID: A-0083

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Obstetrics	Research Study

Abstract Title:

Pregnancy Permission Criteria and Perinatal Outcomes in Women with Systemic Lupus Erythematosus

Authors & Institutions:

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Abstract Text:

Background:
Autoimmune diseases predominantly affect women and often develop in women of reproductive age. For patients with systemic lupus erythematosus (SLE), there is no fixed criteria for the disease remission status and remission duration concerning pregnancy permission. Therefore, patients must be handled on a case-by-case basis, considering their risks.

Objective:
In this study, we investigated the pregnancy permission criteria based on perinatal outcomes of pregnancies complicated by SLE at our hospital.

Methods:
We retrospectively reviewed 20 women who had pregnancies complicated by SLE and delivered at our hospital in the past 5 years. Differences were analyzed using a one-way Analysis of Variance (ANOVA) followed by the Bonferroni-Dunn test for multiple comparisons. $P<0.05$ was considered significant.

Results:
Upon comparing a group with perinatal complications (obstetric complications and fetus and fetal appendages abnormalities) (10 patients) and a group without them (10 patients), no significant difference was observed in the maternal age, height, weight (non-pregnant and pre-partum), body mass index (non-pregnant and pre-partum), presence and absence of smoking. The pre-pregnancy estimated glomerular filtration rate (eGFR) and early pregnancy urinary protein levels were significantly higher (P <0.05). No significant difference between the two groups was observed in the comorbid antiphospholipid syndrome, lupus nephritis, and the number of patients with anti-SS-A antibodies. However, patients who did not meet the pregnancy permission criteria were significantly more in the group with perinatal complications (P <0.05). Four patients who did not meet the pregnancy permission criteria became pregnant, and all fetuses had poor outcomes (two intrauterine fetal deaths, one neonatal death, and one infant death).

Conclusion: Our findings suggested that pre-pregnancy eGFR and early pregnancy proteinuria were important predictors of perinatal outcome.

Keywords:

pregnancy in SLE, perinatal outcomes

Abstract ID: A-0084

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Short-listed for Best Oral	Oral	Obstetrics	Research Study

Abstract Title:

Changes in Fetal Lung Size and Survival in Fetuses with Fetoscopic Endotracheal Occlusion for Severe Congenital Diaphragmatic Hernia

Authors & Institutions:

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Abstract Text:

Objective:
To describe the correlation between survival of children with severe left-sided congenital diaphragmatic hernia (CDH) and the observed/expected lung-to-head ratio (o/e LHR) measured by ultrasound before versus after fetoscopic endotracheal occlusion (FETO).

Methods:
Children with severe left-sided CDH (o/e LHR <25%) who underwent FETO in our hospital in 2014–2022 were included. Fetuses with chromosomal abnormalities, who died, and in whom balloon occlusion failed were excluded. FETO was performed at 28–29 weeks' gestation in severe left-sided CDH. The primary outcome was survival at 6 months after birth. The o/e LHR before FETO and before balloon removal were collected retrospectively, are shown as median (minimum to maximum), and were compared using the Mann-Whitney U test.

Results:
Fifteen children were included; of them, five (33%) survived. The median gestational age at delivery was 35^{+5} (31^{+6} to 38^{+5}) weeks. Median o/e LHR values before FETO and before balloon removal were 20% (8–24%) and 25% (14–62%), respectively. The o/e LHR before FETO in survivors and non-survivors were 21% (20–24%) and 20% (8–23%) (p=0.04), respectively. The o/e LHR before balloon removal in survivors and non-survivors were 48% (37–62%) and 24% (14–34%) (p<0.01), respectively. Survival rates were 0% and 50% in children with o/e LHR of <20% and >20%before FETO, respectively. Survival rates were 0% and 100% among children with o/e LHR of <35% and >35% before balloon removal, respectively.

Conclusion:
Fetal lung size was greater in survivors versus non-survivors. FETO increased fetal lung size and survival rates of some children with severe left-sided CDH.

Keywords:

congenital diaphragmatic hernia, fetoscopic endotracheal occlusion

Abstract ID: A-0085

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Gluteal Monster - A Case Report

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Abstract Text:

Background:
This case is presented because of its low incidence and its rarity. Although infrequent, sacrococcygeal teratoma is the most common germ cell malignancy in newbos with a prevalence of 1 in 40000, with female preponderance (4:1), arising from the caudal end of spine.

Case report:
This newborn is the fourth child of non-consanguineous parents. She was born with a good Apgar score of 9/10 via vaginal delivery at 39 weeks with a healthy weight of 4150g. She appeared comfortable at rest, not dysmorphic, pink, with grossly evident abnormal mass over bilateral gluteal region joined in the midline measuring 15cm in length and 12cm across. On examination, the spine and the female genitalia were normal, and she had good urine and bowel output. Other systemic examinations were unremarkable.
Her mother is a 40 year old, para 4 lady who had an uneventful pregnancy. Urgent ultrasound scan of the spine and pelvis revealed a solid cystic complex sacral/presacral mass with no direct extension of the mass into the spinal canal seen. Serum alpha fetoprotein (AFP) was >2479 IU/ml. She was immediately transferred to the Pediatric Surgical team and an operation was done at day 5 of life. Specimens sent for histopathological examination confirmed the diagnosis of sacrococcygeal mature cystic teratoma. The AFP level has dropped to 300IU/ml at day 38 of life.

Conclusion:
The main treatment for sacrococcygeal teratoma, regardless of histological type, is a complete resection of the tumor and the coccyx; risk of recurrence is extremely high if not performed. Sometimes a mature or immature teratoma also contains malignant cells. It is important to recognize the existence of this pathology in order to have the clinical expertise that offers timely diagnosis, an appropriate and multidisciplinary treatment. Monitoring with alpha-fetoprotein and ultrasound is a key to detect recurrence or postoperative complications

Keywords:

sacrococcygeal, teratoma

Abstract ID: A-0087

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

A TYPE III CPAM in the House- Is it a Smooth Sailing Journey?

Authors & Institutions:

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Abstract Text:

Background:
Congenital pulmonary airway malformation (CPAM) type III is one out five variant and it is the second rarest type after type 0 with the prevalence ranging from 5-10%. The aetiology is unknown.

Case Report:
A 32-year old Malay lady, primigravida was diagnosed antenatally to have rght CPAM at 29 weeks. A female baby was born at 36 weeks. The delivery was induced due to the mother having severe pre-eclampsia (PE) with IUGR. The baby was admitted to NICU for multiple problems. The primary diagnosis was right CPAM. High resolution computed tomography (HRCT) of thorax revealed the diagnosis and proceed with right thoracotomy and lobectomy. The histology confirmed lung tissue with multicystic lesion diagnostic of type 3 CPAM. She was doing well and was discharged at 3 months old with home oxygen therapy.

Conclusion:
CPAM is a rare congenital lung disorder. Surgical excision is recommended to make a definite diagnosis, and histopathological examination is crucial to differentiate the classification of the lesion.

Keywords:

Congenital pulmonary airway malformation, CPAM

Abstract ID: A-0088

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Obstetrics	Research Study

Abstract Title:

Successful versus Failed Instrumental Delivery; Predictors and Obstetric Outcomes: A Single-Center Experience.

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Abstract Text:

Background:
Instrumental delivery either with forceps or vacuum may facilitate vaginal birth and reduce complications associated with caesarean delivery. However, failed instrumental delivery followed by caesarean section can be associated with a significantly higher rate of maternal and fetal morbidities, if compared to spontaneous delivery or successful instrumental delivery. For this study, the procedure was considered failed when the delivery could not be achieved with the initial instrument and a different vacuum cup, forceps or caesarean delivery was needed.

Objectives:
The objective of this study was to identify the predictors of successful or failed instrumental delivery and to evaluate the maternal and fetal outcomes in both groups .

Methods: This was a two-year retrospective study at Kemaman Hospital in Terengganu, Malaysia (2020 and 2021). There were a total of 8068 deliveries where 219 (2.7%) underwent instrumental delivery. All records of patients who had instrumental delivery were reviewed and data were obtained from the medical records. Maternal age, parity, gestational age at delivery, vaginal examination findings, maternal indication for instrumental delivery, intrapartum use of ultrasound, type of forceps or vacuum used and seniority of the obstetricians were all documented. Instrumental delivery records were analyzed based on whether the instrumentation was successful or failed. The maternal and foetal outcomes were also recorded.

Results: Maternal age, parity, gestational age at delivery, occiput posterior position and foetal distress were not significantly different in both groups ($p>0.005$). With the use of ultrasound during instrumental delivery, the number of successful was significantly higher than failed instrumental delivery ($p = 0.003$). In both groups there was no significant difference in maternal and neonatal outcomes.

Conclusion: The use of ultrasound prior to the application or consideration of instruments was the most important factor in the outcome of instrumental delivery. The difference in maternal or fetal outcomes were not statistically significant in either group.

Keywords:

instrumental delivery, predictors, obstetrics outcome

Abstract ID: A-0089

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	Oral	Obstetrics	Research Study

Abstract Title:

A Cross-Sectional Study on the Maternal Outcome of An Emergency Caesarean Section at Different Time Intervals in a Tertiary Hospital

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Abstract Text:

Background:
Caesarean section (CS) is more likely to result in adverse maternal outcomes (AMO) than vaginal delivery, especially if performed in an emergency manner. The question is whether providing emergency CS (emCS) after office hours increases the risk of AMO.

Objective:
To investigate the relationship between the timing of emCS delivery was performed and AMO.

Methods:
This cross-sectional study included 211 low-risk mothers who had their babies delivered via emLSCS at Hospital Tunku Azizah Kuala Lumpur between August 1st and August 31st 2022. Those delivered via elective or semi-emergency CS were excluded. All data were gathered from the daily operating theatre (OT) census and the hospital information system (HIS). They were divided into three groups based on the time the patient arrived at the OT. The hours of operation were 0700-1601 during the day, 1601H-0000H at night, and 0001H-0659H in the early morning. PPH, viscus injury, sepsis within 48 hours of delivery, unplanned ICU admission, relaparotomy, and hysterectomy were all recorded and analysed using SPSS.

Results:
The prevalence of composite AMO among emCS obtained was 5.20%, which was consistent with previously reported studies where emCS complication was known to be very low, particularly in low-risk mothers. PPH was the most common, accounting for 11 cases and one ICU admission following a caesarean hysterectomy. There had been no reports of viscus injury or sepsis within 48 hours of delivery. There was no statistically significant correlation between delivery via emCS after office hours and composite AMO. The adjusted odds ratios for emCS in the evening and early morning were 1.12 (95 percent CI 0.25-5.04) and 0.75 (95 percent CI 0.14-3.96), respectively.

Conclusion:
There was no significant correlation between adverse maternal outcomes and the time of emergency caesarean section in low-risk mothers.

Keywords:

emergency caesarean, off-hours, working hours, adverse maternal outcomes, complications

Abstract ID: A-0091

Status:	Format of Presentation:	Abstract Category:	Format of Study:
Accepted	E-Poster	Neonatal	Case Report

Abstract Title:

Case Report Series on Successful Antibiotic Lock Therapy for Catheter Salvage and Treatment of Central Line Associated Bloodstream Infection

Authors & Institutions:

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Abstract Text:

Antibiotic Lock Therapy (ALT) is indicated for patients with catheter related bloodstream infections involving long term catheters usage where catheter salvage is the goal. A highly prepared concentrated antibiotic is 'locked' to sterilize a previously infected catheter in order to penetrate or disrupt a biofilm in the catheter lumen. Whilst some of the antibiotics have been extensively studied in lock solutions, the usage of piperacillin/tazobactam and carbapenem is still lacking. We described our experience of using these 2 antibiotics as ALT in our chronic patients for catheter salvage and treatment of central line associated bloodstream infection (CLABSI).

Case 1 involved a late-preterm baby who was treated for MAS with PPHN from birth. Echo confirmed a diagnosis of tetralogy of fallot (TOF) with infundibular pulmonary stenosis and he was started on intravenous prostaglandins (PGE2) from day 1 of life. Due to PGE2 dependence, he was on multiple central venous catheters that were changed every 2 weeks. He required prolonged antibiotics for treatment of subacute infective endocarditis likely related to CLABSI. Despite more than 4 weeks therapy the blood cultures still grew persistent *Elizabeth miricola*. He was embarked on piperacillin/tazobactam ALT for 2 weeks. The ALT proved successful and he was able to be tapered off PGE2 at 6 months of age.
Case 2 involved a term baby with confirmed DiGeorge Syndrome and T cell defect with TOF and pulmonary atresia who required PGE2 since day 1 of life. She suffered from multiple nosocomial septicaemia and myositis. Subsequent series of blood cultures were positive for organisms including *Bulkhoderia cepacia, Acinetobacter baumanii MDR and Serratia marcercens*. Due to difficult intravenous access, she was embarked on meropenem ALT for catheter salvage which turned out successful. She was able to be tapered off the PGE2 at 5 months of age.

Keywords:

Central Line Associated Bloodstream Infection (CLABSI) , Antibiotic lock therapy (ALT), Central venous catheter (CVC), piperacillin/tazobactam, meropenem

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Abstract Title:

Oropharyngeal Teratoma in a Newborn: A Rare Disorder

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Abstract Text:

Background:
Teratoma is a rare neoplasm derived from the germinal layers of the embryo. There are few common sites for teratomas identified, however, oropharyngeal teratoma is the rarest site (2% of all teratomas). Teratoma develops when there is disruption during the cell differentiation process.

Case Report:
We present a neonatal case of oropharyngeal teratoma. A baby boy 2800g, was born prematurely at 35weeks gestation to a 38-year-old mother via emergency caesarean section for acute fetal distress. The mother has underlying gestational diabetes mellitus on metformin and s/c insulatard. Prenatal findings did not identify the tumours except polyhydramnios. The newborn exhibited respiratory compromise immediately after birth. However due to the distorted anatomy of the oropharynx on direct visualization that presented as small masses protruding from the oropharyngeal area, he underwent multiple attempts of intubation before being successfully intubated under controlled environment in the neonatal intensive care unit. Urgent computed tomography of the neck (CT) showed an ill-defined hypodense non-enhancing cystic lesion mass (2.0x1.6x1.4cm) at the left posterior pharyngeal wall extending to the prevertebral spaces (0.9x0.6x0.9cm) with narrowing of the oropharynx. He underwent complete resection of the pharyngeal mass during the first week of life. Histologically the oropharyngeal mass was identified as mature cystic teratoma. The age-adjusted alpha-fetoprotein level was normal. He was successfully extubated on day 23 of life. Following the surgery, he required supplemental oxygen and successfully weaned from oral gastric tube feeding to oral feeding.

Conclusion:
Oropharyngeal teratomas have benign histopathology and may cause airway obstruction, respiratory compromise and feeding or swallowing difficulties. Mature teratoma is usually noncancerous and has a possibility of recurrence once surgically removed. Long-term follow-up is warranted to monitor complications or recurrence of the disease.

Keywords:

oropharyngeal, neonate, respiratory compromise, mature teratoma

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