

SOUVENIR PROGRAMME & ABSTRACT BOOK

ANNUAL SCIENTIFIC MEETING ON INTENSIVE CARE

ASMIC 2016

23rd to 25th
September
2016

**SHANGRI-LA HOTEL
KUALA LUMPUR
MALAYSIA**





Zinforo ®
ceftaroline fosamil

**Delivering early Day 3 recovery
from clinical symptoms in
complicated skin and
soft tissue infections (cSSTI)**

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MESSAGE FROM THE DIRECTOR-GENERAL OF HEALTH



It gives me great pleasure to pen a message for the souvenir programme. This Annual Scientific Meeting on Intensive Care is the seventh in the series organised by the Malaysian Society of Intensive Care. The meeting brings together, both foreign and local experts, in the field of intensive care to discuss and share their views and practices with clinicians.

It is through these meetings, clinicians and allied health professionals keep abreast with the most recent clinical updates and advances in the management of the critically ill.

Case discussions with intensive care experts in small groups during the early morning breakfast sessions, will be a great opportunity for frontline clinicians to better understand disease processes and the latest evidence-based management of the critically ill. This three-day meeting will also be a good forum for discussion with the various experts on research projects and perhaps, develop and implement some research trials.

The Meeting opens with the pre-congress workshops. For the first time, there will be three ongoing workshops including one for the nurses. The workshop on nutrition and the haemodynamic workshop for doctors will touch on the fundamentals, as well as the appropriate use of nutrition, fluids and vasopressors in various clinical scenarios while the ventilatory workshop for nurses allows hands-on practice.

I wish all of you an enjoyable meeting.

Datuk Dr Noor Hisham Abdullah



MESSAGE FROM THE PRESIDENT, MALAYSIAN SOCIETY OF INTENSIVE CARE



Welcome to ASMIC 2016, the seventh in the series and the eighth Society's Annual General Meeting.

Science and technology advance rapidly every day, and so do medicine.

Intensive care in the developed world has gone beyond the four walls of intensive care unit into the post-intensive care period. Improved survival after a critical illness has led to the discovery of significant functional disabilities that many survivors of critical illness suffer. The term post-intensive care syndrome, or PICS, has been coined and is defined as new or worsening cognitive, psychiatric, or physical function after a critical illness. In addition, family members of a patient who survives critical illness may also be affected such that

PICS-Family is the term used when critical illness of a loved one adversely affects the mental health of family members. PICS clinics have been introduced in both the United States and the United Kingdom in recognition of the need for the care of patients and families with medical, mental health, social support, and counseling requirements after critical illness.

Hence, there is a lot of scope for future development of intensive care services. We can do a lot to help the critically ill patients in addition to saving their lives. We need manpower. Come and join intensive care. With mass and number, we can bring intensive care beyond the four walls of intensive care unit.

Last year, the Society launched the book titled "Supporting Life: The Journey of Intensive Care in Malaysia" in the opening ceremony during ASMIC. The book was an effort by the Society to document and chronicle the development of intensive care services across the country, thereby recognising the work of the pioneers while not forgetting those who have expanded its services. The book was written in simple language without much medical jargon and I assure you that it would be a good read. The book is on sale during this ASMIC.

Lastly yet importantly, let me express my sincere thanks and appreciation to Dr Shanti Rudra Deva, the organising chair, Dr Louisa Chan, the scientific chair and the team for their time and effort in organising this meeting and putting together a scientific programme which is rich and current in content. This meeting has always attracted a multitude of delegates since its first meeting. The Society is indebted to the organising committee and the secretariat: Dr Ng Siew Hian and then Dr Tai Li Ling and now Dr Shanti Rudra Deva together with Prof Dr Tang Swee Fong for the success of this annual scientific meeting.

I wish all of you a fruitful and memorable meeting.

Dr Tan Cheng Cheng



MESSAGE FROM THE ORGANISING CHAIRPERSON, ASMIC 2016



The Annual Scientific Meeting on Intensive Care is the largest critical care conference in Malaysia. It once again, promises to be an interesting meeting that will allow clinicians, nurses and allied health practitioners to update themselves with the current practices in critical care.

As always, the scientific programme has been drawn up to showcase, the best current research and practice to be delivered by international and local speakers. To ensure ASMIC remains fascinating and contemporary, we have added some new formats to the programme and pre-congress workshops. We hope that the meeting will encourage participants to have active debates and exchange views with the leaders and decision-makers in the field of critical care.

We sincerely hope you can join us at this exciting meeting, and we look forward to welcoming you at ASMIC.

Dr Shanti Rudra Deva



MALAYSIAN SOCIETY OF INTENSIVE CARE EXECUTIVE COMMITTEE 2015-2017



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<i>Vice-President</i>	<i>Dr Tai Li Ling</i>
<i>Secretary</i>	<i>Dr Shanthi Ratnam</i>
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<i>Committee Members</i>	<i>Dr Shanti Rudra Deva</i> <i>Assoc Prof Dato' Dr Mohd Basri Mat Nor</i> <i>Dr Noor Airini bt Ibrahim</i> <i>Dr Ismail Tan b Mohd Ali Tan</i> <i>Dr Louisa Chan Yuk Li</i>

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Dr Shanti Rudra Deva
Dr Louisa Chan Yuk Li
Assoc Prof Dr Tang Swee Fong
Dr Shanthi Ratnam
Datuk Dr V Kathiresan
Dr Azmin Huda
Dr Gan Chin Seng



INVITED FACULTY



AUSTRALIA

Simon Erickson
Peter Morley
Yahya Shehabi
Brendan Smith

DENMARK

Anders Perner

FRANCE

Didier Payen

INDIA

Babu Abraham
Farhad Kapadia

NORWAY

Hans Flaatten

SINGAPORE

Lee Jan Hau
See Kay Choong
Kien Kong

SOUTH KOREA

Younsuck Koh

UNITED KINGDOM

Timothy Walsh

USA

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MALAYSIA

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Ahmad Shaltut Othman
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Anis Siham
Azmin Huda Abdul Rahim
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Hasimah Zainol
Ismail Tan Mohd Ali Tan
Kamal Bashar Abu Bakar
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Lau Chee Lan

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Lim Chew Har
Maznisah Mahmood
Mohd Basri Mat Nor
Mohd Ridhwan Md Noor
Noor Airini Ibrahim
Nor'azim Mohd Yunos
Noryani Mohd Samat
Pon Kah Min
Siti Rohayah Sulaiman
Tai Li Ling
Wan Nasrudin Wan Ismail
Zainah Mohamed



CRITICAL CARE NUTRITION: LET'S GIVE IT DUE ATTENTION



22ND SEPTEMBER 2016, THURSDAY

VENUE: KELANTAN ROOM

This workshop is designed from the most recent available evidence and consensus guidelines. It is intended for all healthcare providers involved in nutrition therapy of the critically ill – primarily physicians (specialists and trainees), nurses, dietitians and pharmacists.

At the end of this workshop, participants are expected to be familiar with enteral and parenteral feeding practises that are evidence-based, and to promote optimum energy and protein delivery. Bringing these skills back to the intensive care bedside, it is hoped that nutrition delivery for the various groups of critically ill patients will be improved and leading to better outcomes.

FACILITATORS Ahmad Shaltut Othman
Mohd Basri Mat Nor
Noor Airini Ibrahim
Shanti Rudra Deva

0800 – 0830	REGISTRATION
0830 – 0835	Introduction
0835 – 0855	Nutritional status assessment
0855 – 0915	Initiating and dosing EN
0915 – 0935	Monitoring tolerance and adequacy of EN
0935 – 0955	Choosing the appropriate enteral formulation
0955 – 1010	Adjunctive therapy
1010 – 1025	TEA
1025 – 1045	When to use PN
1045 – 1105	Maximising the efficacy of PN
1105 – 1125	Special situations 1: Pulmonary failure, hepatic failure
1125 – 1150	Special situations 2: Chronically critically ill, obesity in critical illness, nutrition therapy at the end-of-life
1150 – 1220	Skill station 1: Acute pancreatitis
1220 – 1250	Skill station 2: Sepsis
1250 – 1350	LUNCH
1350 – 1400	Participants go to assigned skill stations
1400 – 1430	Skill station 3: Post-operative major surgery
1430 – 1500	Skill station 4: Burns / Trauma / Traumatic brain injury
1500	CLOSING



22ND SEPTEMBER 2016, THURSDAY

VENUE: PAHANG ROOM

Haemodynamic instability is common in critically ill patients. The need to monitor is important and necessary not only to assess global and regional tissue perfusion but also to guide us in the appropriate use of fluids, vasopressors or inotropes. This one-day workshop is designed to help doctors in assessing the haemodynamic status of the critically ill, and to introduce the use of various minimally invasive and non-invasive haemodynamic monitoring tools.

The aims of the workshop are to:

- *Teach some fundamentals in CVS physiology*
- *Gain understanding in the basic principles of minimally invasive monitors*
- *Comprehend the use of minimally invasive and non-invasive haemodynamic monitors*
- *Discuss appropriate use of fluids or vasopressors / inotropes in various clinical scenarios*

FACILITATORS **Babu Abraham**
Premela Naidu Sitaram
Brendan Smith
Tai Li Ling

0800 – 0830	REGISTRATION
0830 – 0840	Introduction
0840 – 0905	CVS physiology: Understanding functional haemodynamics
0905 – 0930	Physiological basis for fluid resuscitation
0930 – 1000	Predicting fluid responsiveness
1000 – 1030	TEA
1030 – 1055	Minimally invasive cardiac output measurement: An overview
1055 – 1115	Assessing volume status using ECHO
1115 – 1130	Pitfalls of ECHO
1130 – 1200	Inotropes? Vasopressors? Fluid? – What to do when you don't know
1200 – 1220	Participants go to assigned skill stations
1220 – 1300	Skill station 1: Case scenario: Optimising patient in shock using calibrated thermodilution technique
1250 – 1340	LUNCH
1340 – 1420	Skill station 2: Case scenario: Managing a haemodynamically unstable patient using Doppler cardiac output technique
1420 – 1500	Skill station 3: Case scenario: Optimising patient in cardiogenic shock using a pulse power analysis technique
1500 – 1540	Skill station 4: Case scenario: ECHO in a haemodynamically unstable patient
1600	Wrap up



MECHANICAL VENTILATION FOR NURSES



22ND SEPTEMBER 2016, THURSDAY

VENUE: JOHOR ROOM

OVERVIEW

This one-day programme is designed to help ICU nurses improve their knowledge on how to safely and effectively manage critically ill patients on the mechanical ventilator. With the aid of both lectures and workshops, they will be allowed to practice what they learned in a safe and supervised environment. The programme emphasises the basic concept of mechanical ventilation involving topics that are clinically relevant to the bedside nurse. The skill station has clinical scenarios that will help them form a stepwise approach to the problems encountered.

LEARNING OBJECTIVE

- *Identify the various conventional modes of ventilation and differentiate their mechanisms of action in order to monitor and troubleshoot alarms effectively.*

FACILITATORS **Asmah Zainuddin**
 Kien Kong
 Shanthi Ratnam
 Siddarth Hundoo

0830 – 0900	REGISTRATION
0900 – 0910	Opening
0910 – 0940	Pre-workshop evaluation
0940 – 1030	Basic modes of mechanical ventilation
1030 – 1050	TEA
1050 – 1130	Monitoring and troubleshooting alarms
1130 – 1210	Evidence-based NIV
1210 – 1220	Participants go to assigned starting group
1220 – 1250	Skill station 1: Basic mode: Volume-based ventilation
1250 – 1340	LUNCH
1340 – 1410	Skill station 2: Basic mode: Pressure-based ventilation
1410 – 1440	Skill station 3: NIV set-up and monitoring
1440 – 1510	Skill station 4: Monitoring and trouble-shooting ventilator alarms
1510 – 1540	Skill station 5: Asthma and ARDS
1540 – 1600	TEA
1600 – 1630	Post-workshop evaluation



23RD SEPTEMBER 2016, FRIDAY



0800 – 0845	REGISTRATION	
0845 – 0930	PLENARY 1 <i>Chairperson: Tan Cheng Cheng</i> Advanced life support – What is hot and what is not in research and practice <i>Peter Morley</i>	SABAH
0930 – 1015	OPENING CEREMONY	SABAH
1015 – 1100	TEA / TRADE EXHIBITION	

	SABAH	SARAWAK	KEDAH/SELANGOR
1100 – 1240	SYMPOSIUM 1 RESPIRATORY <i>Chairperson: Teoh Sim Chuah</i>	SYMPOSIUM 2 SEPSIS <i>Chairpersons: Wan Nasrudin Wan Ismail, Noryani Mohd Samat</i>	SYMPOSIUM 3 PAEDIATRICS I <i>Chairperson: Anis Suraya Ghani</i>
1100 – 1125	Driving pressure – Value and limitations <i>John Marini</i>	Is genetic contributive to human sepsis <i>Didier Payen</i>	Vasoactive agents in sepsis <i>Pon Kah Min</i>
1125 – 1150	CO2 removal – Is that an important goal of mechanical ventilation? <i>Farhad Kapadia</i>	Understanding sepsis 3 – Strengths and limitations <i>Kamal Bashar Abu Bakar</i>	VAP – Do bundles make a difference? <i>Anis Siham</i>
1150 – 1215	High flow nasal oxygen therapy – Any role in your practice? <i>See Kay Choong</i>	Fluid therapy in sepsis <i>Anders Perner</i>	Is bigger better – Does PICU volume impact outcome? <i>Koh Chun Wearn</i>
1215 – 1240	The proper place of prone positioning <i>John Marini</i>	Key points in feeding the septic patient <i>Noor Airini Ibrahim</i>	Rapid response team saves lives <i>Simon Erickson</i>

1240 – 1430 LUNCH





	SABAH	SARAWAK	KEDAH/SELANGOR
1430 – 1610	SYMPOSIUM 4 PHARMACOLOGY BLITZ <i>(20 minute sessions)</i> <i>Chairperson:</i> Foong Kit Weng	SYMPOSIUM 5 INTENSIVE CARE FOR NURSES I <i>Chairperson:</i> Mariani Bachok	SYMPOSIUM 6 ORGANISATION <i>Chairperson:</i> Lim Chew Har
1430 – 1455	Steroids in community-acquired pneumonia Mohd Ridhwan Md Noor	Family-centered care Zainah Mohamed	Thinking about thinking – How to stop making diagnostic errors Peter Morley
1455 – 1520	Levosimendan in heart failure Babu Abraham	Reducing medication errors – Your role is critical Lau Chee Lan	Grooming the ICU to be a family-centered ICU Hans Flaatten
1520 – 1545	Dexmedetomidine usage in ICU Khoo Tien Meng	Patient-ventilator dyssynchrony Kien Kong	Often the less is more Younsuck Koh
1545 – 1610	Feeding with fish oil Ahmad Shaltut Othman	Caring for the delirious patient Noryani Mohd Samat	What is the best time to rehabilitate the ICU patient – In the ICU, in the hospital, or after going home? Timothy Walsh
	Thiamine in sepsis Mohd Basri Mat Nor		
1610 – 1630	TEA		





	KEDAH/SELANGOR	PENANG	PAHANG
0800 – 0900	<p>LET'S ASK THE EXPERT 1</p> <p><i>Moderator:</i> <i>Mahazir Kassim</i></p> <p>How I manage the difficult-to-ventilate patients <i>John Marini</i></p>	<p>LET'S ASK THE EXPERT 2</p> <p><i>Moderator:</i> <i>Gan Chin Seng</i></p> <p>Fluids in the critically ill child – When, why and how <i>Simon Erickson,</i> <i>Lee Jan Hau</i></p>	<p>LET'S ASK THE EXPERT 3</p> <p><i>Moderator:</i> <i>Nor'azim Mohd Yunos</i></p> <p>How I manage fluids in critically ill adults <i>Anders Perner</i></p>
0900 – 0945	<p>PLENARY 2</p> <p><i>Chairperson: Tang Swee Fong</i></p> <p>Redefining ALI/ARDS in children <i>Simon Erickson</i></p>		SABAH
0945 – 1030	<p>PLENARY 3</p> <p><i>Chairperson: Tang Swee Fong</i></p> <p>Outcomes after intensive care – How well are we doing? <i>Hans Flaatten</i></p>		SABAH
1030 – 1100	TEA / TRADE EXHIBITION		
	SABAH	SARAWAK	KEDAH/SELANGOR
1100 – 1240	<p>SYMPOSIUM 7</p> <p>HAEMODYNAMICS / SEPSIS</p> <p><i>Chairpersons:</i> <i>Kamal Bashar,</i> <i>Muhammad Zihni</i></p>	<p>SYMPOSIUM 8</p> <p>CARDIOPULMONARY RESUSCITATION</p> <p><i>Chairperson:</i> <i>Premela Naidu Sitaram</i></p>	<p>SYMPOSIUM 9</p> <p>PAEDIATRICS II</p> <p><i>Chairperson:</i> <i>Gan Chin Seng</i></p>
1100 – 1125	<p>PROCESS, ARISE, PROMISE – Now what do we do? <i>Brendan Smith</i></p>	<p>Controversies in post-resuscitation care <i>Peter Morley</i></p>	<p>CRRT prescription in paediatric AKI <i>Chor Yek Kee</i></p>
1125 – 1150	<p>Revisiting lactate in sepsis and haemodynamics <i>Nor'azim Mohd Yunos</i></p>	<p>Updates on drugs in resuscitation <i>Wan Nasrudin Wan Ismail</i></p>	<p>Recipe for optimal nutrition in the critically ill child <i>Lee Jan Hau</i></p>
1150– 1215	<p>Formulating a haemodynamic management plan <i>See Kay Choong</i></p>	<p>Family presence during CPR <i>Ismail Tan Mohd Ali Tan</i></p>	<p>Weaning and extubation – How best to do it <i>Maznisah Mahmood</i></p>





1215 – 1240

Advanced haemodynamic tools – Using them too little or too often

Anders Perner

Prognostication before, during and after resuscitation

Peter Morley

What is optimal sedation in paediatrics?

Simon Erickson

1300 – 1430

LUNCH SATELLITE SYMPOSIUM (*Hospira*)

SABAH

Chairperson: Suhaini Kadiman

ABCDE vs eCASH vs EGDS, what matters most?

Yahya Shehabi

OFFICIAL POSTER ROUND

1430 – 1610

	SABAH	SARAWAK	KEDAH/SELANGOR
	SYMPOSIUM 10 NEUROLOGY <i>Chairpersons: Ismail Tan, Muhammad Zihni</i>	SYMPOSIUM 11 INTENSIVE CARE FOR NURSES II <i>Chairperson: Zainah Mohamed</i>	SYMPOSIUM 12 ETHICS/END-OF-LIFE <i>Chairperson: Shanti Rudra Deva</i>
1430 – 1455	The brain controls peripheral immunity – Impact for clinicians Didier Payen	Nurses' role in preventing unplanned extubation Hasimah Zainol	Opportunities and threats in collaboration with industry Anders Perner
1455 – 1520	Managing delirium – The best way forward to clarity Timothy Walsh	Updates on post-resuscitation care Aida Nani Don Rahim	Legal status and ethical considerations for end-of-life in India Farhad Kapadia
1520 – 1545	What's new in critical illness neuromyopathy Foong Kit Weng	Keeping the patient normothermic Adawiyah A Bakar	Intensive care in the very old Hans Flaatten
1545 – 1610	Acute brain vessel thrombectomy – When, why and how Didier Payen	Key points in blood and blood product transfusion practices Siti Rohayah Sulaiman	When patients or family requests for inappropriate medical treatment Richard Lim Boon Leong

1610 – 1630

TEA / TRADE EXHIBITION

1630

AGM of the Malaysian Society of Intensive Care KEDAH/SELANGOR



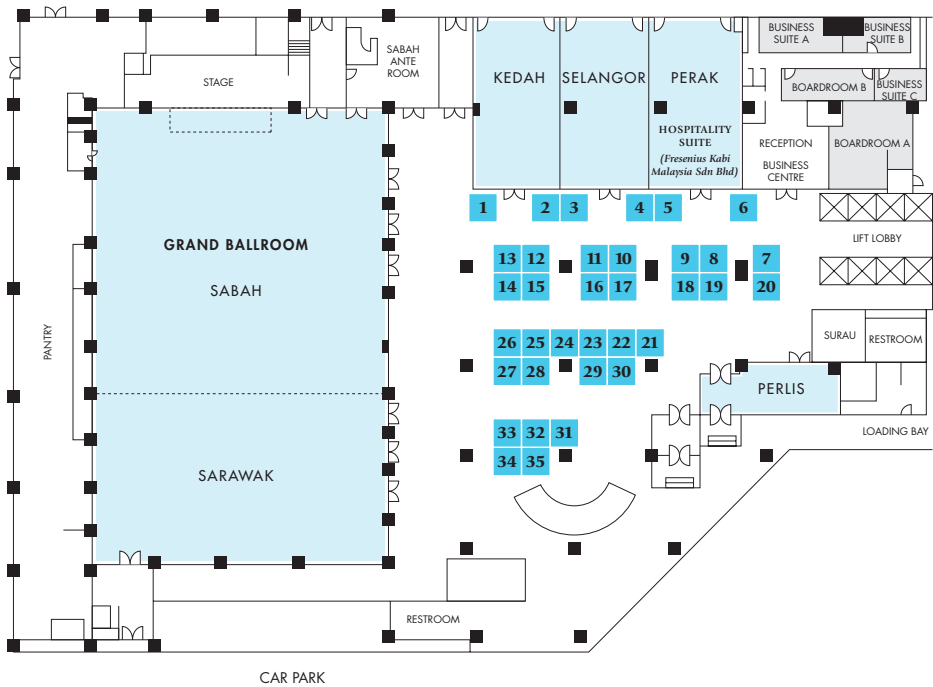
25TH SEPTEMBER 2016, SUNDAY



	PENANG	PAHANG
0800 – 0900	LET'S ASK THE EXPERT 4 <i>Moderator: Mahazir Kassim</i> How I manage ventilator dyssynchrony Younsuck Koh	LET'S ASK THE EXPERT 5 <i>Moderator: Lim Yee Woon</i> Dealing with end-of-life care decisions Tai Li Ling
0900 – 0945	PLENARY 4 SABAH <i>Chairperson: V Kathiresan</i> Sepsis: Three phases crucial for clinicians to consider Didier Payen	
0945 – 1030	PLENARY 5 SABAH <i>Chairperson: V Kathiresan</i> Heart-lung interactions during mechanical ventilation John Marini	
1030 – 1100	TEA / TRADE EXHIBITION	
	SABAH	KEDAH/SELANGOR
1100 – 1240	SYMPOSIUM 13 ICU NUGGETS <i>Chairperson: Shanthy Ratnam</i>	SYMPOSIUM 14 INFECTIONS <i>Chairperson: Noor Airini Ibrahim</i>
1100 – 1125	Anaemia in the ICU – Is there an alternative to using blood transfusion? Timothy Walsh	Diagnosing infections in a burns patient Hans Flaatten
1125 – 1150	Post-extubation dysphagia See Kay Choong	Viral threat in respiratory failure Younsuck Koh
1150 – 1215	Ten pitfalls of intensive care Farhad Kapadia	Management of candidiasis in the ICU Azmin Huda Abdul Rahim
1215 – 1240	Transfusion triggers – A moving target. When, who and how much? Timothy Walsh	ICU antibiotic usage – Be the good steward Lim Chew Har
1240 – 1400	LUNCH	



FLOOR PLAN & TRADE EXHIBITION (BASEMENT II)

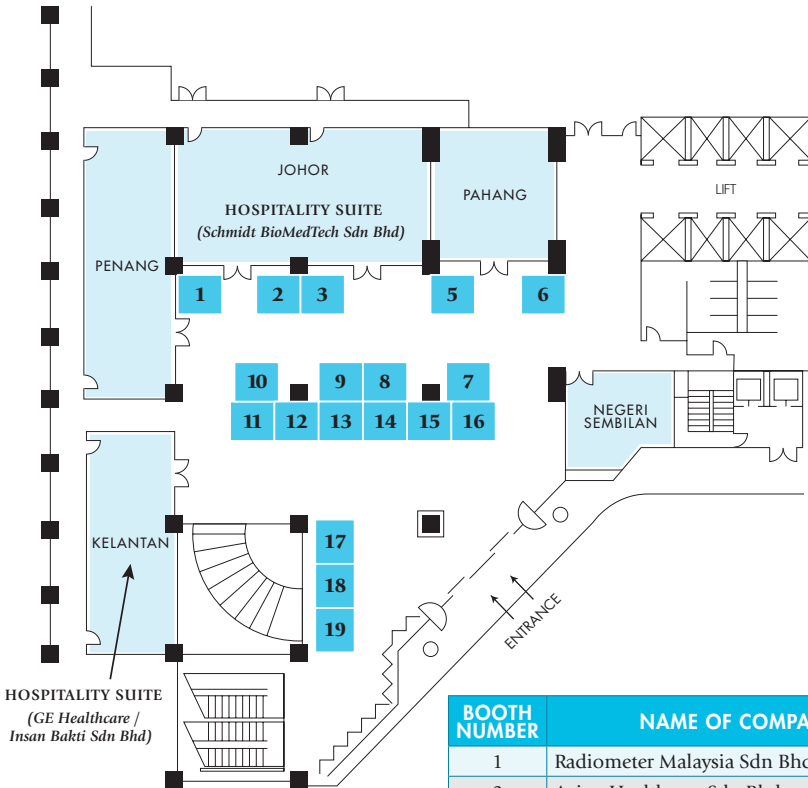


BOOTH NUMBER	NAME OF COMPANY
1	Schiller (Malaysia) Sdn Bhd
2 & 3	Draeger Medical South East Asia Pte Ltd
4	Emerging Systems (M) Sdn Bhd
5	Medental (M) Sdn Bhd / Pall Thai Sdn Bhd
6	AR Medicom (M) Sdn Bhd
7	Baxter Healthcare (Malaysia) Sdn Bhd
8, 9, 18 & 19	Philips
10	Astellas Pharma
11	Daya Cergas (M) Sdn Bhd
12	Nestlé Health Science
13	3M Malaysia Sdn Bhd
14 & 15	KL Medical Supplies

BOOTH NUMBER	NAME OF COMPANY
16 & 17	IDS Medical Systems (M) Sdn Bhd
20	Star Medik Sdn Bhd
21	Syarikat Wellchem Sdn Bhd
22	Hexamine Sdn Bhd
23	Cook Asia (Malaysia) Sdn Bhd
24 & 25	Pfizer Malaysia Sdn Bhd
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29	Xcore Services Sdn Bhd
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31	ATN Medic Sdn Bhd
32 & 33	Zoll Medical Corporation
34	Edaran MedicalTech (M) Sdn Bhd
35	Norse Crown Co (M) Sdn Bhd



FLOOR PLAN & TRADE EXHIBITION (LOWER LOBBY)



BOOTH NUMBER	NAME OF COMPANY
1	Radiometer Malaysia Sdn Bhd
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6	Getz Healthcare
7	Heal Integrated Solutions Sdn Bhd
8 & 9	Gemilang Asia
10	Lifetronic Medical Systems Sdn Bhd
11	Precept Medical System Sdn Bhd
12	Oralix Sdn Bhd
13 & 14	Medtronic
15	I-Medic Imaging Sdn Bhd
16	B Braun Medical Supplies
17	Taraf Synergy Sdn Bhd
18	Perniagaan Mega Medik / Universal Care
19	Distinct Medic Sdn Bhd



ACKNOWLEDGEMENTS



The Organising Committee of ASMIC 2016 records its deepest appreciation to the following companies for your contributions and support:

3M Malaysia Sdn Bhd	Insan Bakti Sdn Bhd
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ATN Medic Sdn Bhd	Medental (M) Sdn Bhd / Pall Thai Sdn Bhd
Axian Healthcare Sdn Bhd	Meditop Corporation (M) Sdn Bhd
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Gemilang Asia	Star Medik Sdn Bhd
Getz Healthcare	Sun Healthcare (M) Sdn Bhd
Heal Integrated Solutions Sdn Bhd	Syarikat Wellchem Sdn Bhd
Hexamine Sdn Bhd	Taraf Synergy Sdn Bhd
Hospira Malaysia	Xcore Services Sdn Bhd
I-Medic Imaging Sdn Bhd	Zoll Medical Corporation
IDS Medical Systems (M) Sdn Bhd	



POSTER PRESENTATIONS



- PP 1** **Soothing The Storm: Role Of Plasmapheresis** **23**
Aziam I, Sivaraj C, Noryani M S, Asmarawati M Y, Nor Khairiah M K
Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia
- PP 2** **Anti-NMDA Receptor Autoimmune Encephalitis: A Case Report** **24**
A Agosto, K K Fong, M H Ng
Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia
- PP 3** **Case Report: Massive Pulmonary Embolism...
Where Did The Desaturation Go?** **25**
Z H Lim, C K W Wong, K W Foong
Department of Anaesthesiology and Intensive Care,
Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia
- PP 4** **Target-Controlled Infusion Of Propofol And Remifentanyl
For A Bedside Bronchoscopy-Guided Percutaneous
Tracheostomy In A Post-Partum Patient With Massive
Anterior Mediastinal Mass** **26**
Ashraf Zulkurnain, Jerry Liew, Khoo Tien Meng, Lily Ng
Intensive Care Unit, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia
- PP 5** **A Case Of Toxic Shock Syndrome (TSS) Secondary To Septic
Miscarriage Complicated With Refractory Disseminated
Intravascular Coagulation (DIC) And Transfusion-Associated
Circulatory Overload (TACO): Challenges In Anaesthetic
Management And Post-operative Critical Care** **27**
T K W Lim, C C Soon
Bintulu Hospital, Sarawak, Malaysia
- PP 6** **Family Satisfaction Towards The Daily Information Briefed
By Healthcare Providers In Critically Ill Patients Using
The Protocolised Communication** **28**
Z S Wong¹, Noorjahan Haneem Binti Md Hashim¹, Wong Kang Kwong²
¹University of Malaya, Kuala Lumpur, Malaysia
²Ramsay Sime Darby Ara Damansara Medical Centre, Selangor, Malaysia



POSTER PRESENTATIONS [CONT'D]



- PP 7** **N-Acetylcysteine For Acute Liver Failure In Heat Stroke, A Case Report** **29**
Janice Tze Mei Goh, Yew Ching Lee, Sien Chiak Lai, Shu Ching Teo
Sarawak General Hospital, Kuching, Sarawak, Malaysia
- PP 8** **Cost Effectiveness Analysis And Implementation Of Pharmacy-Aseptically-Prepared Prefilled Prostaglandin E1 (Alprostadi) Syringes For Neonates** **30**
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**SOOTHING THE STORM: ROLE OF PLASMAPHERESIS***Aziam I, Sivaraj C, Noryani M S, Asmarawati M Y, Nor Khairiah M K*

Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia

Thyroid storm is a life threatening medical emergency associated with high fatality rate. Conflicts arise in clinical practice where traditional antithyroidal therapy fails or is contraindicated. Plasmapheresis had been successfully described in the literature as an alternative therapy for thyrotoxic crisis. We report a case of a hyperthyroid lady whom defaulted the medical treatment, presented with thyrotoxic crisis in shock complicated with acute liver failure and acute kidney injury. The initial blood investigations showed low TSH < 0.008 uIU/L, high free T4 44.43 pmol/L, free T3 18.77 pmol/L, TWCC 5000/ul, platelet 52 000/ul, AST 50 U/L, ALT 16 U/L, total bilirubin 69.1 umol/L, urea 5.9 mmol/L, creatinine 103 umol/L and INR 4.5. She was tachypneic requiring intubation and developed fast atrial fibrillation with sign and symptoms of congestive heart failure. Bedside echo revealed ejection fraction 30% with global hypokinesia. Initial treatment consisting of tablet methimazole 20 mg, Lugol's iodine 5 drops and IV hydrocortisone 100mg were commenced immediately upon presentation. Within 12 hours of admission, her liver and renal function deteriorated. The liver and renal function test showed increment of AST to 1691 U/L, ALT 369 U/L, bilirubin 117umol/L, while the urea 12.8 mmol/L and creatinine 217umol/L. As thionamides were contraindicated in acute liver failure, decision for plasmapheresis was made in order to control her thyroid storm. After two cycles of plasmapheresis, the free T4 markedly came down to 24.67 pmol/L, free T3 8.32 pmol/L and TSH 0.057 uIU/ml. Her liver function was also improved with AST of 433 U/L and ALT 295 U/L. She then was successfully undergoing total thyroidectomy the following week.





ANTI-NMDA RECEPTOR AUTOIMMUNE ENCEPHALITIS: A CASE REPORT

A Augusto, K K Fong, M H Ng

Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

OBJECTIVES

Since its discovery in 2007, NMDAR autoimmune encephalitis has been increasingly diagnosed in patients with clusters of symptoms mimicking viral encephalitis, psychosis and variable types of autonomic dysfunction that would otherwise be misdiagnosed or treated as idiopathic encephalitis in the past. It is more prevalent in children and young adults, particularly female population and often paraneoplastic. Early detection and treatment with aggressive immunotherapy and concomitant tumour removal when present often has good prognosis of recovery over time. We aim to prompt a high index of suspicion in patients with the abovesaid symptoms to test for anti-NMDAR autoantibodies to prevent misdiagnosis and delays in treatment, ultimately ensuring better outcome.

CASE REPORT

We present a case of a young male nuclear medicine technician in his late 20s with no personal or family history of psychiatric illness who developed altered behaviour, auditory hallucinations, delusions and paranoia. He was initially misdiagnosed with psychiatric illness and sent to a psychiatric hospital. He later developed seizures, autonomic instability, hypersalivation and became encephalopathic. He was eventually treated in ICU after needing intubation for respiratory distress, found refractory to meningoencephalitis treatment and investigated for anti-NMDAR antibodies. Despite the initial delay in diagnosis, he was promptly treated with first-line immunotherapy and screened for tumour.

CONCLUSIONS

This patient is currently receiving ongoing treatment in our ICU and was found to be non-responsive to first-line immunotherapy in the first 4 weeks. He is still not interactive, having ongoing temperature spikes, frequent seizures requiring high doses of sedation, facial dyskinesia and hypersalivation. Multiple screenings for tumour came back negative. We are currently planning to launch into second-line therapy once Rituximab is available.





**CASE REPORT: MASSIVE PULMONARY EMBOLISM...
WHERE DID THE DESATURATION GO?**

Z H Lim, C K W Wong, K W Foong

Department of Anaesthesiology and Intensive Care, Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia

BACKGROUND

Pulmonary embolism has become a common and lethal yet treatable condition found in intensive care unit. It is often easily missed when patients come with septic shock where attention will be put on septic shock instead of obstructive shock caused by massive pulmonary embolism. PE often causes hypoxemia, hypocapnia and increased alveolar-arterial oxygen gradient ($P\{A-a\}O_2$). And the suspicion of PE will not be made when PaO_2 remains normal. To the contrary, many studies have showed that there were cases with massive PE which presented with normal blood gases.

OBJECTIVES

This report aims to raise awareness on the unusual presentation of massive pulmonary embolism and the degree of significance an arterial blood analysis has on its diagnosis.

CASE REPORTS

The case reported is a young patient who had a septic shock and subsequently developed massive pulmonary embolism diagnosed by echocardiography and yet to have a normal arterial blood gases. He was then thrombolysed with tenecteplase and was able to be weaned off from inotrope.

CONCLUSIONS/SUMMARY

Diagnosis of massive pulmonary embolism remains as a big challenge for both intensivists and physicians. Arterial blood gas analysis has limited value in diagnosing pulmonary embolism. High index of suspicion of this condition is required by intensivists and physicians to diagnose the disease early to prevent mortality. Research on bedside echocardiography in diagnosing PE is again warranted.





TARGET-CONTROLLED INFUSION OF PROPOFOL AND REMIFENTANIL FOR A BEDSIDE BRONCHOSCOPY-GUIDED PERCUTANEOUS TRACHEOSTOMY IN A POST-PARTUM PATIENT WITH MASSIVE ANTERIOR MEDIASTINAL MASS

Ashraf Zulkurnain, Jerry Liew, Khoo Tien Meng, Lily Ng

Intensive Care Unit, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, Malaysia

INTRODUCTION

Patients with massive anterior mediastinal masses are well recognized to be at extremely high risk of life-threatening airway obstruction and cardiopulmonary collapse during perioperative period. Here, we described a case of successful use of TCI propofol and remifentanyl with preservation of spontaneous ventilation during bed-side percutaneous tracheostomy in a patient with massive anterior mediastinal mass.

CASE PRESENTATION

A 31-year-old woman, at 2 weeks postpartum, presented to our intensive care unit with late presentation of massive anterior mediastinal mass complicated with neutropenic sepsis during chemotherapy. She failed extubation once due to poor cough and respiratory effort, therefore a bedside percutaneous tracheostomy with assisted-flexible bronchoscopy was planned. Anaesthesia was induced followed by skin incision and tracheal puncture. No muscle relaxant was used. Anaesthesia was maintained with effect site concentration of propofol 3 – 6 mcg/ml and remifentanyl 8 – 12 ng/ml. Her alertness returned 10 minutes later. We able to change to tracheostomy venturi mask after few hours and she was discharged from the ICU on the following day.

DISCUSSION

Administering TIVA using TCI device is a better alternative to provide anaesthesia without muscle relaxant. TCI propofol is preferred due to its fast onset and is easily titrated according to desired sedation level. TCI remifentanyl provides intense analgesia with quick onset and offset time, independent of the duration of infusion. Here, we reported the need of higher infusion doses of remifentanyl for maintenance of anaesthesia during the procedure compared to the infusion dose recommended by our national guideline of TIVA using TCI.

CONCLUSION

In massive anterior mediastinal mass, percutaneous tracheostomy can be safely and successfully performed in ICU without muscle relaxant using TCI propofol and remifentanyl.





A CASE OF TOXIC SHOCK SYNDROME (TSS) SECONDARY TO SEPTIC MISCARRIAGE COMPLICATED WITH REFRACTORY DISSEMINATED INTRAVASCULAR COAGULATION (DIC) AND TRANSFUSION-ASSOCIATED CIRCULATORY OVERLOAD (TACO): CHALLENGES IN ANAESTHETIC MANAGEMENT AND POST-OPERATIVE CRITICAL CARE

T K W Lim, C C Soon

Bintulu Hospital, Sarawak, Malaysia

CASE REPORT

A 41-year-old grand-multiparous lady presented to our centre with a 2-day history of abdominal pain and per-vagina bleeding. She was haemodynamically unstable despite fluid resuscitation and we proceeded with emergency suction and curettage (S&C) under general anaesthesia with midazolam-ketamine co-induction and initiation of vasopressor. Intra-operatively, there was difficulty in ventilating the patient. On-table lung ultrasound revealed significant bilateral lung rockets suggestive of acute pulmonary oedema. Following S&C, the patient had persistent per-vagina hemorrhage despite uterotonics and anti-fibrinolytic. Emergency hysterectomy was performed and the patient required massive transfusion with packed cells, cryoprecipitate and fresh frozen plasma. Infusion of other fluids was strictly restricted with initiation of intravenous (IV) frusemide.

Post-operatively, she required high setting of airway pressure release ventilation and multiple inotropes/vasopressors. She was treated with IV imipenem/cilastatin and was covered for staphylococcal/streptococcal toxic shock syndrome (TSS). She continued to deteriorate with persistent draining of blood from her abdominal surgical drains despite massive blood transfusion. In view of refractory DIC and septic shock, she was given 90mcg/kg of NovoSeven® and 2 doses of 0.5g/kg of IV immunoglobulin (IVIG). Her bleeding effectively ceased following NovoSeven® infusion and her clinical condition significantly improved following IVIG administration. She was extubated and successfully weaned off from inotropic support by Day 5 of ICU admission.

We aim to discuss in this case report the resuscitation challenges in a patient with circulatory overload but concurrently needing massive transfusion. We also provide a literature review on NovoSeven® and IVIG in the management of refractory DIC and TSS.





FAMILY SATISFACTION TOWARDS THE DAILY INFORMATION BRIEFED BY HEALTHCARE PROVIDERS IN CRITICALLY ILL PATIENTS USING THE PROTOCOLISED COMMUNICATION

Z S Wong¹, Noorjahan Haneem Binti Md Hashim¹, Wong Kang Kwong²

¹University of Malaya, Kuala Lumpur, Malaysia

²Ramsay Sime Darby Ara Damansara Medical Centre, Selangor, Malaysia

Intensive care unit in University of Malaya Medical Centre consists of 25 beds. Patients in the ICU are critically ill. Admission to ICU generates strong emotions in family members.

The aim of the study was to examine the family satisfaction towards the daily information briefed by healthcare providers in critically ill patients using protocolised communications.

This was a quasi-experimental study. A total of 68 subjects were recruited in this study. They were divided into experimental group (n=34) and control group (n=34). For the experimental group, subjects received regular daily information updates (day 1, day2, day3) and also based on their demand. Protocolised communication entailed a form stating when, who and what was communicated during family update. Family members also could write down their questions for ICU team to answer. For the control group, information was given as normal ICU setting and routine explanation by ICU staffs. All subjects were requested to complete questionnaires at day 4. Their mean score were compared by using independent samples t- test. χ^2 test were used to compare the demographic variables and the satisfaction between two groups.

In this study, there was no statistical significance in the demographic variables between the two groups. However, there was increase in family satisfaction in the consistency of information in experimental group (mean score 4, SD 0.696) compare to control group (mean score 3.44, SD 0.960, $p=0.008$). This study also showed that the experimental group had higher satisfaction in participation in decision making (Mean experimental group 4.03, SD 0.627; mean control group 3.62, SD 0.922, $p=0.032$). Overall, the experimental group (55.2%) significantly revealed a higher satisfaction level compare to control group (44.8%), $p=0.040$.

In conclusion, this study suggested that regular updates of information will improve the family satisfaction towards the information briefed by healthcare providers in critically ill patient.





N-ACETYLCYSTEINE FOR ACUTE LIVER FAILURE IN HEAT STROKE, A CASE REPORT

Janice Tze Mei Goh, Yew Ching Lee, Sien Chiak Lai, Shu Ching Teo

Sarawak General Hospital, Kuching, Sarawak, Malaysia

Acute liver failure (ALF) despite uncommon is life threatening. In Malaysia, ALF give rise to 7% of liver failure incidence. In this article, we reported on a patient who sustained ALF following heat stroke but successfully treated with N-Acetylcysteine (NAC).

A 21 years old gentleman with no prior medical illness presented with 3 days history of fever during his police training. He was unconscious on arrival to hospital. Initially suspected as cardiac event, it was ruled out by a normal coronary angiogram. He fitted once and urgent CT brain showed cerebral oedema. Primary blood investigations revealed elevated Creatinine Kinase (22425), acute kidney injury (AKI) and transaminitis with coagulopathy.

He was intubated and ventilated in Intensive Care Unit. He was initially put on forced alkaline diuresis, subsequently started on continuous renal replacement therapy for 2 days due to hyperkalemia, AKI and metabolic acidosis. His liver function worsened the next day with AST 3950 U/L, ALT 2706 U/L and serum ammonia 68.1. He was hence loaded with Intravenous NAC 150mg/kg over 15 minutes, then 12.5mg/kg/hr for the next 4 hours, 6.25mg/kg/hr for the following 16 hours and 5mg/kg for the rest of the 72 hours. Other supportive measures including fresh frozen plasma transfusion, antibiotics and syrup lactulose were provided. He improved remarkably after 4 days with normalizing liver and renal parameters. He regained full GCS on day 7 after NAC was started and was able to be extubated. He was discharged home after 3 weeks of hospital stay with near normal liver function.

Studies have shown that treatment with NAC in non-drug induced ALF is safe and may give small benefit although routine use has yet to be established. NAC may be an option in centers where liver transplant is not available or there is lack of donors.





COST EFFECTIVENESS ANALYSIS AND IMPLEMENTATION OF PHARMACY-ASEPTICALLY-PREPARED PREFILLED PROSTAGLANDIN E1 (ALPROSTADIL) SYRINGES FOR NEONATES

Esther L L Siew, K Arumugam

National Heart Institute, Kuala Lumpur, Malaysia

BACKGROUND

Alprostadil is used for palliative therapy in neonates with patent ductus arteriosus. Due to its high cost (≈RM1,250/ampoule), common practice is to share an ampoule amongst patients. Remainder injection is refrigerated for use later or discarded and diluted injection is infused until finished or discontinued even though recommendation is to discard remainder after 24 hours. Inconsistent patient charging resulted in wastage. In 2014 Pharmacy undertook a study to address these issues.

OBJECTIVE

To evaluate cost-effectiveness of supplying pharmacy-aseptically-prepared prefilled Alprostadil 500mcg/ml (0.1 ml), with 30 days extended expiry costing ≈RM150/syringe aiming to reduce wastage and inappropriate medication handling.

METHODS

An audit for patients started on Alprostadil was done between Nov-Dec 2014 to ascertain how the injection was shared, duration of storage, the charging process, and wastage incurred. Nurses were interviewed and retrospective data of patients who had been prescribed Alprostadil in 2012 were collected. Pharmacy then prepared and supplied standardized strengths of Alprostadil syringes to paediatric wards. Cost savings and wastage were measured.

RESULTS

100% balance of undiluted solutions were immediately discarded compared to being stored for average of 10 days (max 27 days). There was 0% vs 13% of syringes with incomplete labelling. 100% of diluted injections were replaced after 24 hours compared to average of 3 days (max 17 days) previously. Wastage of undiluted solution was reduced to ≈RM350/month compared to ≈RM 5K/month. 100% of patients were charged accurately for the amount of drug (nearest 50mcg) used compared to none previously, resulting in patients savings of ≈RM56K/month.

CONCLUSION

Pharmacy-aseptically-prepared prefilled Alprostadil syringes resulted in cost savings to patients, accurate charging of medication used, reduced drug wastage and prevented potential inappropriate medication handling.





A PILOT OF CLINICAL PHARMACY SERVICE PROVISION TO A PEDIATRIC INTENSIVE CARE UNIT (PICU)

Esther L L Siew, K Arumugam, U J Tan

National Heart Institute, Kuala Lumpur, Malaysia

BACKGROUND

Existing evidence suggests that clinical pharmacy services favorably affect health care outcomes in patients. In 2014, we piloted clinical pharmacy services in a 26-bedded PICU to improve medication safety.

OBJECTIVE

To report pharmacist's drug-related problems underlying interventions and the effectiveness of the services provided, and define the role of the clinical pharmacist.

METHODS

A pharmacist with 3 years' experience in clinical pharmacy (CP) was introduced in PICU. The clinical pharmacist participated in critical care consultant ward rounds. All interventions to optimize prescribing and their acceptance were recorded. Satisfaction survey to assess staff perception and satisfaction of the CP services provided was conducted.

RESULTS

An average of 73 interventions/month over 6 months were made in 2014 by the pharmacist of which 96.2% were accepted by the doctors. In 2016, pharmacist's interventions accepted increased to 99.3% with an increased average of 149 interventions/month. Most common types of interventions made were: drug selection (39%), over or under-dosing (35%), monitoring (14%) and undertreated (11%). The response to the satisfaction survey was positive. The clinical pharmacist is accepted as part of the pediatric department team. Since 2014 the role of the clinical pharmacist has expanded to include non-clinical roles such as developing guidelines and drug utilization evaluation. As a result of the effectiveness of the CP services in PICU, we introduced CP services in Adult Intensive Care Unit in 2015.

CONCLUSION

A dedicated PICU pharmacist improved medication safety and is seen as a valuable team member in a multidisciplinary PICU. The successful implementation of CP services in PICU served as a model and justification for further expansion of CP services in other critical care areas.





A FATAL CASE OF CEREBRAL OEDEMA AND MYOCARDITIS ASSOCIATED WITH SECONDARY DENGUE INFECTION

S K Cheah, R Abdul Rahman, A Mohamad Yusof, S S P Tang, K B Abu Bakar

Universiti Kebangsaan Malaysia Medical Centre, Kuala Lumpur, Malaysia

BACKGROUND

Secondary dengue infection (SDI), in the form of two sequential infections by different serotypes will lead to severe dengue. Concomitant organ failure in particular combination of cardiovascular (CVS) and central nervous system (CNS) failure carried further rise in mortality rate.

CASE REPORT

We report a confirmed SDI in a 27 year old man who presented with hypovolemic shock due to persistent vomiting and diarrhoea. He was stabilized after fluid resuscitation. However, subsequently he developed sudden onset of seizure and followed by myocarditis with unstable haemodynamically. After 48 hours of stabilization, noted his gag and cough reflexes became absent with dilated pupils. Imaging of the brain showed extensive cerebral oedema with poor flow beyond internal carotid arteries and its branches above Circle of Willis. He remained comatose and subsequent developed complications of diabetes insipidus, secondary bacterial infection and acute kidney injury. He was passed away after 19 days of admission.

DISCUSSION

SDI carries higher risk of severe dengue as associated with antibody dependent enhancement mechanism. This is associated with pre-existing dengue antibodies which enhanced virus replication by activation of memory T- cell and causing surge of inflammatory cytokines. These ultimately increase in capillary permeability causing massive vascular leak which explained extensive cerebral oedema in this patient. Furthermore, concomitant of cardiovascular failure leading to his irreversible outcome.

CONCLUSION

Severe cardiovascular and neurological manifestations can occur in secondary dengue infection which resulting in fatality.

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SURVEILLANCE STUDY OF TRANSPORTATION OF CRITICALLY ILL PATIENTS TO INTENSIVE CARE UNIT (ICU) HOSPITAL TENGGU AMPUAN AFZAN (HTAA), KUANTAN AND ITS IMPACT ON PATIENTS

Sivaraj Chandran, Noryani Md Samat, Asmarawati Md Yatim, Nor Khairiah

Department Anaesthesiology & Critical Care, Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia

This is a prospective pilot study involving 30 patients that were observed for adverse unexpected events during transportation to ICU in Jun 2016. Majority of events were Minor events [18 (60%)] like ECG probe displacement [5 (17%)], Oxygen probe displacement [4 (13%)], Intravenous line tangle [8 (27%)], low monitor battery [1 (3%)]. Major events contributes [9 (30%)], which is BP variation >20% from baseline in [5 (17%)] patients, oxygen supply failure [2 (7%)], ventilator failure [2 (7%)]. Others [3 (10%)] issues identified was poor pass over from the transportation team. The transportation team involved had poor knowledge regarding patient's condition. All the patients were accompanied by doctors, staff nurses and support staffs. There was no mortality reported during this period of transportation to ICU patients. All the patients were treated with simple interventions to support the hemodynamic parameters. Key factors such as personal, patient and system plays an important role. Personal factor involves the transport team should be equipped with a good knowledge and skills. They should have a sound knowledge regarding patient's condition and should be prepared to act upon if there is any adverse events occur during period of transportation. This team should strictly adhere to the transportation protocol. Optimization of patient's condition prior transportation is important to ensure that the patient's condition remains stable throughout the period of transportation. System is also equally important here as in equipment's deficiency or failures, lack of safety procedures, environment change to ensure that transportation goes smooth and safe for the patients.





CASE REPORT – A SUCCESSFUL EMERGENCY VENO-ARTERIAL (VA) EXTRACORPOREAL MEMBRANE OXYGENATION (ECMO) THERAPY IN MASSIVE PULMONARY EMBOLISM

Cosmas L¹, Zuraini M N², Hamidah F, M Arif M N², M Hamzah K²

¹Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

²Hospital Serdang, Selangor, Malaysia

Pulmonary Embolism (PE) is a well recognized complication following venous thromboembolism (VTE), which carries a high mortality rate. Modalities of treatments are thrombolytic therapy and/or emergency surgical embolectomy. Usage of Extracorporeal Membrane Oxygenation (ECMO) in life threatening Pulmonary Embolism (PE) has been reported with high successful rate as bridging therapy to specific reperfusion therapy. We described a successful usage of ECMO as a bridging therapy for surgical pulmonary embolectomy in a 39 years old gentleman with left tibia and fibula fractures.

A 39 years old gentleman with recent history of motor vehicle accident (MVA) was electively admitted for Illizarov's fixation for his left open fracture left Tibia and Fibula a month after his MVA. Preoperative assessment noted that he was fit for operation under regional anaesthesia.

After administration of subarachnoid block (SAB) and positioning for operation, he was breathless, bradycardic and unresponsive. Cardiopulmonary Resuscitation (CPR) was initiated immediately. Returned of spontaneous circulation was achieved with institution of peripheral Veno-Arterial (VA) ECMO after a period of 90 minutes of CPR

Immediate Transoesophageal Echocardiography (TOE) revealed the presence of massive PE mainly involving the main, right and left pulmonary arteries. Immediate surgical pulmonary embolectomy was carried out.

He received induce hypothermia for 24 hours for cerebral protection in Cardiothoracic Intensive Care Unit (CICU) following surgery. ECMO was successfully weaned off after 48 hours post operatively. He was subsequently extubated the following day, with minimal neurological deficit.





CASE REPORT: NEONATAL APRV IN PRETERM BABY

Hannah P K Tan, Rebecca A Thomas, Y K Chor

Sarawak General Hospital, Kuching, Sarawak, Malaysia

The use of airway pressure release ventilation (APRV) in infants is very limited. It is primarily used as a form of rescue ventilation in children. The first report published regarding the use of APRV in children was in 2000 but the current level of evidence consist primarily of case reports or series, with only one prospective trials. A neonatal case series by S Gupta et al (1) in 2013 indicates that APRV is feasible in low birth weight infants. However, till date there has been no published data among our local medical community. We report a case of premature baby born at 30 weeks with prolonged ventilation who developed respiratory failure as a result of nosocomial sepsis and was successfully ventilated using APRV mode with Drager Babylog VN500. She was successfully extubated after 12 days on APRV and discharged home well after 4.5 months stay in NICU. Although further research is needed to ascertain the safety and effectiveness of APRV in infants, it can be used in neonate or smaller child using lower Tlow.





CASE REPORT OF SAGITTAL SINUS THROMBOSIS AFTER UNDERGOING LAPAROTOMY FOR PERFORATED APPENDIX IN A CHILD

Husniyah binti Zainol Abidin, Grace Soon, Li Kuan Tan

Department of Anaesthesiology, Sabah Women and Children's Hospital, Kota Kinabalu, Sabah, Malaysia

Cerebral venous thrombosis is an uncommon but serious disorder with potentially high morbidity. This condition is most linked to inherited and acquired thrombophilias, malignancy and infection from the head and neck region. In children, the incidence was 0.67 case per 100,000 children per year where neonates were the most commonly affected. We report a rare case of an 11 year old girl who developed sagittal sinus thrombosis after undergoing laparotomy for a perforated appendix. Poor post-operative recovery from sedation in the ICU followed by unequal pupils triggered an initial CT brain and subsequently and early MRI that showed the sagittal sinus thrombosis with areas of acute infarction. An urgent decompressive craniectomy was done. However, intravenous heparin had to be withheld due to persistent thrombocytopenia and bleeding tendencies despite being the first-line of treatment for cerebral venous thrombosis. Her initial recovery of consciousness was slow requiring tracheostomy and a prolonged 5-week ICU stay. She was eventually discharged home ambulating with a wheelchair with full consciousness. Our report highlight the value of prompt diagnosis through neuroimaging, clinician awareness and multidisciplinary approach towards patient's care.





CASE REPORT: DENGUE FEVER IN PREGNANCY WITH ARDS

P K Lee, M Fadhil, Y K Chan, V Rai, G Ong

University Malaya Medical Centre, Kuala Lumpur, Malaysia

INTRODUCTION

Dengue fever is a serious arboviral infection causing a wide spectrum of illness. Of great concern is the infection in the pregnant woman.

DESCRIPTION

A 37 years old pregnant woman was admitted to the ICU with in acute respiratory distress. She had myalgia, fever, cough with hemoptysis and shortness of breath for a week. She had a small uncorrected VSD, and had close contact with a patient with pulmonary tuberculosis. On examination she was conscious, breathless and had a truncal rash. Her vital parameters were: temperature, 39degrees Celsius; BP 120/75 mmHg; PR 104 b/m; RR 24 bpm and an SPO2 of 89% on room air. Biochemistry was normal with a platelet count of 129, and a haematocrit of 31% and a haemoglobin of 11g/deciliter. Auscultatory findings revealed bilateral crepitations and reduced air entry over the bases. Dengue serology was negative. CXR showed bilateral perihilar loss of airspace with air bronchograms and upper lobe diversion. P/F ratio was 200. ECHO noted the small VSD, but was otherwise normal. Antibiotics, intravenous rocephine and azithromycin were commenced. Continuous positive airway pressure with oxygen was administered through a noninvasive ventilator. Blood cultures were negative but a repeat serology for dengue NS1 was positive. CXR cleared remarkably and the serial P/F ratios normalized. She was discharged from the ICU on the 4th ICU day.

CONCLUSION

Dengue viral fever is a multisystem disorder and causes complement activation and inflammatory cytokine release. These pathophysiological events may result in pulmonary permeability oedema with ARDS/MODS. Early and effective respiratory support can ameliorate the severity of the symptoms leading to a resolution of the ARDS and an early discharge from the ICU.





**UPPER GASTROINTESTINAL BLEED IN DENGUE FEVER:
FROM ENDOSCOPY TO LAPAROTOMY,
DEMISTIFYING INTERVENTIONAL TABOO: OUR EXPERIENCE**

Juita Hassan¹, Premela N.Sitaram², Shanti Ratnam²

¹Universiti Teknologi MARA (UiTM), Faculty of Medicine Sungai Buloh, Selangor, Malaysia

²Hospital Sungai Buloh, Sungai Buloh, Selangor, Malaysia

OBJECTIVES

To describe a series of case reports of patients with dengue fever with severe UGIT bleed admitted to ICU Hospital Sg Buloh from 2015 to 2016 who underwent laparotomy to secure haemostasis.

METHODS

A retrospective review of the medical records for all dengue patients with bleeding UGIT via eHIS software.

SUMMARY

Dengue fever has been well recognized in South East Asia and the global increase of dengue incidence is also experienced by Malaysia. The pathogenesis of haemorrhage in patients with dengue fever is multifactorial, including vasculopathy, thrombocytopenia, platelet dysfunction, dysregulated coagulation and TNF-alpha induced endothelial damage with macrophage infiltrations. Upper GIT bleed is the most common type of bleeding in severe dengue fever. Optimum medical treatment with fluids, proton pump inhibitor, blood and blood products are the mainstay treatment of bleeding in dengue patients. However there is not enough reports to support the clinical applications of endoscopic treatment to upper gastrointestinal bleeding in dengue patients. Prior studies demonstrated that the common reasons of gastrointestinal haemorrhage in dengue are haemorrhagic gastritis, gastric erosion, peptic ulcer and oesophageal ulcer. However, when peptic ulcer is encountered during the endoscopic procedure, endoscopic injection or haemoclips alone is not the only effective treatment in securing haemostasis. The risk is especially high in patients stratified to have higher re-bleeding risk by endoscopic classifications.

We report case series of patients who had been admitted to our intensive care unit with bleeding UGIT in severe dengue. These patients, who despite optimum fluids and blood products had persistent bleeding which endoscopy failed to secure hemostasis. This group of patients had a strong indication to undergo laparotomy and survived the event.





**A PILOT STUDY ON THE DELIVERY OF
MODIFIED REGIONAL CITRATE ANTICOAGULATION PROTOCOL
FOR CONTINUOUS RENAL REPLACEMENT THERAPY**

*Premela N Sitaram, Asmah Zainudin, Shymala Kumarasamy, Shanthi Ratnam, Rohaini Bt Suhari,
Noorhaidah Bt Baharudin, Noradliza Bt Rahman, Noor Zarith Sofia Bt Mohammad Rafi,
Siti Salwa Bt Mohd Latib*

Hospital Sungai Buloh, Selangor, Malaysia

INTRODUCTION

Continuous renal replacement therapy (CRRT) is widely practiced as the dialysis technique of choice for critically ill patients with acute kidney injury (AKI). Regional citrate anticoagulation (RCA) for CRRT is beginning to gain acceptance as heparin may be contraindicated in subgroups of patients.

OBJECTIVE

Given the requirement of continuous citrate and calcium adjustments in RCA procedures, we seek to adapt and modify the Collin protocol to develop a safe, non-labour-intensive approach for the delivery of RCA for CRRT in Malaysia.

METHOD

Twenty adult patients who had AKI and received CRRT from May 2015 to June 2016 at Intensive Care Unit, Hospital Sungai Buloh, Malaysia were retrospectively studied. The Prismaflex® system was utilized, with Prismocitrate 18/0 as the citrate-containing pre-replacement fluid and PrismaSol solution as the post-replacement fluid. An effluent dose of 30 mL/kg/h was applied. Clinical parameters such as Simplified Acute Physiology Score II (SAPS II), renal profile and acid-base balance (pre-CRRT, during CRRT, post-CRRT) and coagulation status were recorded.

RESULTS

This protocol provides effective solute clearance and metabolic control, as well as efficient anticoagulation of the CRRT circuit. The mean time to steady state of ionized calcium was 10.55 ± 6.42 h. Analysis of renal profile and acid-base balance pre-CRRT versus during CRRT showed significant differences in the levels of blood urea nitrogen, pH, bicarbonate, base excess and creatinine. There were no cases of hypocalcaemia, bleeding episodes, metabolic acidosis or alkalosis, increase in transfusion requirements or instances of haemodynamic instability. Only one patient who had severe liver laceration developed clinically significant citrate toxicity. Apart from that, no life-threatening event was observed. Total number of filters used for this cohort was 22 filters with a mean of 41 hours per filter.





CONCLUSION

In conclusion, the modified RCA protocol for CRRT is efficient, safe and practical, with an added value of reducing an operator's workload and time. We are unable to conclude the cost effectiveness of this mode in this study as there is no control group. This study serves as a proof of concept to highlight the value of further investigation in larger prospective and randomized clinical trials in Malaysia.





DEATH AUDIT BOOK: A STRATEGY TO IMPROVE ORGAN AND TISSUE DONATION RATE IN THE INTENSIVE CARE UNIT OF HOSPITAL SUNGAI BULOH

Premela N Sitaram, Zaidiana Bt Yahya, Kanakaletchumy Pathumalai, Nurliyana Azehar, NorHaliza Raja Ismail, Song Chia Pua, Muhammad Aizat Mohd Tarmizi, SriJayanti Gobalan, Lim Wee Leong

Hospital Sungai Buloh, Sungai Buloh, Selangor, Malaysia

AIM

To ensure effective and expedient identification and referral of potential organ/tissue donors to the Transplant and Organ Procurement (TOP) team.

To improve medical team's timely approach rate to deceased family's consent for donation.

METHODS

The audit was undertaken in collaboration with medical staff in the Intensive Care Unit (ICU). A specially designed form in a booklet was used to collect data on deaths occurring in the Intensive Care Unit. The audit was undertaken from January 2015 to December 2015. All deaths occurring during this period were documented and referred to the TOP team to assess for suitability of organ and tissue donation. Families were counseled and approached when deemed suitable. Data was recorded and analyzed.

RESULTS

Introduction of the death audit book has shown to significantly increase the number of potential donor identification from less than 5% in the previous years to 47% of total ICU deaths in 2015. The family approach rate for donor consent was 43% of total ICU deaths. Thus indirectly increasing the average donor rate of 10% during the previous years to 21% of total organ/tissue donation throughout the country.

CONCLUSION

The death audit book has proven to significantly increase the organ/tissue donor rate in the Intensive Care unit of Hospital Sungai Buloh. It has also significantly changed the mindset of health staff and allowed the approach for organ/tissue donation as a norm when addressing end-of-life care.

Compliance to the Death Audit Book may prove to be challenging but they can and indeed should be incorporated into local hospital policies targeting critical care areas in order to better promote organ/tissue donation as part of end-of-life care.





**CASE REPORT: ACUTE CONTRALATERAL UNILATERAL PULMONARY OEDEMA
IN SEVERE DENGUE INFECTION**

Foo L L, Yap M H, Ng C C, M Shahnaz, G Ong

University of Malaya, Kuala Lumpur, Malaysia

The incidence of dengue fever is increasing in the world. With increasing cases, uncommon presentations and complications are now commonly recognized.

We report on the early respiratory manifestation in 2 young male ICU dengue patients who presented with shortness of breath. They were volume resuscitated and developed worsening of the respiratory parameters. One was spontaneously breathing, with oxygen through a face mask, as he had refused NIV. He was given airway recruitment manoeuvres and was discharged after a week. The other patient deteriorated over the first 24 hours and required elective lung protective mechanical ventilation for severe septic shock and ARDS and succumbed in the following 24 hours.

Serial chest roentgenograms (CXR) were done and progressive pulmonary abnormalities were noted: initial hyperinflated oligoemic left lung with a small volume right lung; development of a contralateral unilateral noncardiogenic pulmonary oedema in the right lung; and finally the full blown ARDS with loss of airspace in both lung fields. The left pulmonary artery was prominent.

The left main bronchus is located between the descending aorta and the pulmonary artery, making it susceptible to compression with vessel dilation. Compression of the left main bronchus lead to a check valve effect, or the ball valve effect, with air entry at inspiration and little or no expiration as the diameter of the left bronchus is much smaller at expiration with the vessel compression.

With unilateral hyperinflation, and oligoemia of the left lung, blood flow was directed into the contralateral right lung, developing a unilateral pulmonary oedema. The pulmonary function deteriorated further with a progression into the full blown ARDS.





TIME IS BRAIN: A RETROSPECTIVE STUDY OF RTPA TREATMENT IN ISCHEMIC STROKE PATIENTS IN CRITICAL CARE UNIT

Fadhli Suhaimi bin Abdul Sukur, Tan Wee Yong

Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

OBJECTIVE

To analyse the outcome of patients post thrombolytic therapy for ischemic stroke in critical care unit in Hospital Kuala Lumpur and Hospital Sungai Buloh.

METHOD

Inclusion criteria include patients post thrombolytic therapy according to local rTPA (alteplase) guidelines from 1st January 2013 until 30th June 2015. Data are collected retrospectively from patient files, ICU observation chart and nursing note. Study is conducted by designated operator from each hospital. Outcome determine based on score of the National Institutes of Health stroke scale (NIHSS). Favorable outcome is complete resolution of the neurological deficit or an improvement from base line in the score on the NIHSS by 4 or more points.

RESULTS

23 cases from 2 centres were analysed. Average arrival time to hospital is 102.35 minutes. NIHSS score improvement correlates significantly with the time of arrival to hospital. Patients that arrived earlier (90-180 minutes) showed significant NIHSS score improvement compared to patients who arrived late (180 minutes-270 minutes).

Socio-demographic characteristic (age, gender, ethnicity) and risk factors (hypertension, diabetes mellitus, smoking, hyperlipidaemia, ischemic heart disease, previous stroke, BMI more than 25 and alcohol consumption) did not show any significant correlation with the outcome. 29% of patient develop complication post thrombolytic with 25% of it was intracranial bleeding after 24 hours post treatment.

CONCLUSION

The results supports the notion 'Time is Brain', the earlier the thrombolysis treatment was initiated the better the outcome. Furthermore, if the patient had already fulfils the criteria for thrombolysis, other socio-demographic and clinical risk factor do not have a significant impact on the outcome.





VASOPRESSORS: CULPRIT, ACCOMPLICE OR BYSTANDER?

A N D Rahim, Tai Li Ling, Shanti Rudra Deva

Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Sepsis is the leading cause of death in intensive care units. A majority of patients with septic shock require vasopressors or inotropes to maintain a mean arterial pressure of $> 65\text{mmHg}$ after adequate volume resuscitation. Misconception arises when patient has digital ischaemia in relation to high vasopressor requirement.

We present a case on a post mastectomy patient who was in septic shock with multi-organ failure requiring high vasopressors who had initially developed digital ischaemia of the fingers and toes. This further progressed to symmetrical gangrene of all 4 limbs. Patient progressed well and organ failure improved. However, patient developed adjustment disorder due to the peripheral gangrene of which she refused amputation.

A common misconception is thrombosis or thromboembolism involving limb arteries with loss of arterial pulses. However, ischaemic limb may also be caused by thrombosis of microcirculation. This is thought to be due to micro-thrombosis associated with disturbed procoagulant-anticoagulant balance. It is a cutaneous manifestation of disseminated intravascular coagulation (DIC). Due to systemic activation of haemostasis, impaired fibrinolysis and intravascular formation and deposition of fibrin, there is potential for microvasculature thrombotic occlusion. Triggering factors include bacterial endotoxin, shock, acidosis, tissue injury and platelet or tumour-derived coagulant microparticles.

Management include discontinuing vasopressor, reversal of sepsis and DIC, anti-coagulation and surgical considerations.





BLUE TRAGEDY AFTER SOY FORMULA: A CASE REPORT OF METHAEMOGLOBINAEMIA IN INFANT

Hooi Peng Cheng, Chin Seng Gan, Anis Siham, Lucy Lum, Soo Lin Chuah

University of Malaya, Kuala Lumpur, Malaysia

INTRODUCTION

Methaemoglobinaemia is a medical emergency, which requires prompt recognition and appropriate treatment.

CASE

A 7-week-old male infant presented with severe metabolic acidosis and dehydration. Soy milk formula was introduced 4 days prior to the presentation due to misperception of diarrhoea by the care taker. Methaemoglobinaemia was diagnosed through the observation of chocolate-colored blood and a laboratory test showing the presence of elevated methaemoglobin level (42.7%). There were electrolyte imbalances: hypokalaemia (K 2.5mmol/L), hyponatremia (130mmol/L) and hypercalcaemia (2.8mmol/L). He was rehydrated with 10% correction fluid and electrolytes were replenished. Metabolic acidosis gradually resolved with IV sodium bicarbonate infusion. Methaemoglobin dropped to 1.5% by day 4 of admission.

CONCLUSION

High nitrate content in the soy milk is the most probable cause of methaemoglobinaemia in this patient.





**INCIDENCE, RISK FACTORS AND OUTCOME OF ACUTE KIDNEY INJURY
IN MALAYSIAN INTENSIVE CARE UNITS:
A PROSPECTIVE DUAL-CENTRE COHORT STUDY**

Wan Fadzlina Wan Muhd Shukeri¹, Lim Chee Hui², Lily Ng Mooi Hang², Saedah Ali¹

¹Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

²Queen Elizabeth Hospital, Sabah, Malaysia

OBJECTIVES

Acute kidney injury (AKI) is common in the intensive care unit (ICU). However, its epidemiology is not well-studied outside the Western population and most studies were retrospective in nature. A prospective study on AKI epidemiology in our local ICU is therefore warranted. We aim to evaluate the incidence of AKI in our ICU using the Acute Kidney Injury Network (AKIN) criteria and determine its risk factors and outcome.

METHODS

This was a dual-centre, prospective, observational study conducted over a six-month period. All patients > 18 years were screened for study inclusion. Admission of < 48 hours, chronic kidney disease requiring renal replacement therapy (RRT), renal transplant patients and ICU readmission were excluded. Simple logistic regression analysis was performed to determine the risk factors of AKI and all-cause ICU mortality. Multiple logistic regression analysis was used to identify the independent risk factors for the outcome.

RESULTS

AKI occurred in 48.8% of 334 patients with AKIN I, II and III of 16.2%, 7.8% and 24.8% respectively. In simple logistic regression analysis, age, gender, non-elective admission, medical admission, primary diagnoses of sepsis and trauma, vasoactive therapy, high APACHE II, SOFA and non-renal SOFA scores were risk factors of AKI. However, only APACHE II and SOFA scores remained significant in multiple logistic regression analysis. The ICU-mortality was significantly higher (36.2%) in AKI than in non-AKI patients (9.4%) (p-value < 0.001). RRT, APACHE II score and sepsis were identified as the independent risk factors for ICU-mortality in AKI patients.

CONCLUSION

AKI is common in our ICU. High APACHE II and SOFA scores were independent risk factor of AKI. The ICU-mortality was significantly higher in patients who developed AKI. APACHE II score, RRT and sepsis independently predicted ICU-mortality in the AKI patients.





BRAIN-DERIVED NEUROTROPHIC FACTOR BUT NOT TAU PROTEIN LEVELS ARE ASSOCIATED TO THE OCCURRENCE OF DELIRIUM IN INTENSIVE CARE UNIT PATIENTS

Wan Fadzlina Wan Muhd Shukeri¹, Halimatun Sa'adiah Muslim², Saedah Ali¹

¹Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

²Hospital Pulau Pinang, Penang, Malaysia

OBJECTIVES

Delirium is a serious complication that commonly occurs in critically ill patients in the intensive care unit (ICU). However, biomarkers associated with delirium in ICU patients is not well studied. The aim of this study was to determine the association between serum concentrations of brain-derived neurotrophic factor (BDNF) and tau protein and the occurrence of delirium in critically ill patients.

METHODS

This prospective cross-sectional study included 40 patients with or without delirium in a 12-bed general ICU. Serum BDNF and tau protein concentrations were determined by enzyme-linked immunosorbent assay assays at the time of ICU admission and subsequently 48 hours later. All the patients were tested with the delirium tool, confusion assessment method for the ICU (CAM-ICU), until a positive delirium resulted or until death or discharged from the ICU.

RESULTS

It was found that 57.5% (n=23) patients were delirious and 42.5% (n=17) patients were non-delirious. At ICU admission, median BDNF levels were significantly lower in delirious patients than in non-delirious patients (71.22, IqR 33.78 vs 103.76, IqR 41.91 ng/mL, respectively) with p-value of 0.001. There was no significant difference in the median BDNF levels at 48 hours from ICU admission. When we compared serum tau protein levels, there were no significant differences between the groups.

CONCLUSION

Our results suggest that admission serum BDNF but not tau protein levels are associated with the occurrence of delirium in ICU patients.





SUCCESSFUL NURSING INTERVENTION IN AN INFANT WITH WORSENING BRONCHIOLITIS DESPITE OPTIFLOW THERAPY – A CASE REPORT

Noorhafinda M N¹, Naimah K¹, Mardiana B¹, Suzilawati B¹, Chin G S²,

¹Department of Nursing, University Malaya Medical Centre, Kuala Lumpur, Malaysia

²Departments of Pediatrics, University of Malaya, Kuala Lumpur, Malaysia

BACKGROUND

Optiflow is a type of high-flow nasal cannula therapy and its use in treating the mild to moderate acute bronchiolitis has been gaining popularity in 5-6 years.

CASE

A 8-month-old Malay boy who was unwell for 2 days presented to Emergency Department with history of fever and respiratory distress. He was born at 34 weeks of gestation via emergency caesarean section due to twin pregnancy. Apgar scores were normal with birth weight of 2.4kg. Physical examination findings were consistent with the diagnosis of moderate severity of acute bronchiolitis. He was initially admitted to pediatric general ward and treated with regular hypertonic saline nebulizer and Optiflow of 8L/min with FiO₂ 30%. At midnight his condition worsened and required to be transferred to PICU for further support. At PICU, the Optiflow was increased to 15L/min with FiO₂ of 30% in addition to frequent gentle chest physiotherapy and suctioning. He responded to the treatment well and became more active with less respiratory distress. He was transferred back to general ward after three days of PICU stay.

CONCLUSION

The use of Optiflow therapy will be more successful if it is provided with adequate flow together with gentle chest physiotherapy and suction. This may reduce the need for mechanical ventilation and shorten the length of hospital stay.





**RETROSPECTIVE STUDY OF THE OUTCOME OF NECROTIZING FASCIITIS
IN INTENSIVE CARE UNIT, HOSPITAL RAJA PEREMPUAN ZAINAB 11
(HRPZ II), KOTA BHARU, KELANTAN**

*Amira Aishah Che Ani¹, Noor Shazlini Mustapa¹, Saedah Ali¹, Shamsul Kamalrujan Hassan¹,
Mohd Nazri Ali², Mohamad Hasyizan Hassan¹*

¹Department of Anaesthesiology and Intensive Care, School of Medical Science, Health Campus,
Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

²Department of Anaesthesiology and Intensive Care, Hospital Raja Perempuan Zainab II,
Kota Bharu, Kelantan, Malaysia

BACKGROUND

Necrotizing fasciitis is a rapidly progressive soft tissue infection involving deep fascia which carries relatively high mortality rate worldwide. The aim of this study is to determine the mortality rate in our local general hospital and to investigate the factors that determine the primary outcome (mortality) of the necrotizing fasciitis patients treated in Intensive Care Unit.

METHODS

This is retrospective cross sectional study involved 71 patients admitted to intensive care unit (ICU) HRPZ II from January 2012 to December 2015. Patients were analysed for presence of co-morbidities, Acute Physiology and Chronic Health Evaluation (APACHE II score), factors important in pathogenesis and treatment, and mortality.

RESULTS

The overall mortality was 22/71 (31%). The mean APACHE II score was 19.2 (SD=6.57) and the median time to operation was 50 hours (IQR=70.0). Factors directly contributing towards mortality were higher APACHE II score (adjusted OR 1.41, 95%CI: 1.20, 1.66, P< 0.001) and an increase in time to surgical debridement (adjusted OR 1.03, 95%CI: 1.01, 1.05, P=0.003).

CONCLUSION

Our study confirmed that delayed surgical intervention in treating necrotizing fasciitis and a higher APACHE II score were associated with significant increase in mortality.

KEYWORDS

Necrotizing fasciitis, intensive care unit, mortality, APACHE II score.





SEVERE WET BERI BERI COMPLICATED WITH REVERSIBLE PULMONARY HYPERTENSION: A CASE REPORT

C K Tham, Z Haslinda, C K W Wong, B H Lee, K W Foong

Department of Anaesthesia and Intensive Care, Hospital Raja Permaisuri Bainun, Ipoh, Peak, Malaysia

This case report is regarding a 35-year-old Malay gentleman from the drug rehabilitation centre who came presenting with symptoms of heart failure and lower limb swelling for 3 weeks. He was intubated for respiratory distress and had severe metabolic acidosis with hyperlactatemia complicated with acute kidney injury and transaminitis. He had to be hooked onto the CRRT machine. While he had no hypoxemia, a bedside echocardiography revealed biventricular failure, dilated right heart with severe pulmonary hypertension suspicious of a pulmonary embolism. His CTPA revealed that he had pulmonary embolism at the distal branches but could not explain the severity of the pulmonary hypertension. He was appropriately treated and made a slow but positive recovery over the next 3 weeks and was discharged home well. Incidentally during his stay, reports were coming in regarding his inmates who have the same lower limb swelling history as well as failure symptoms of varying severity including death. While extensive work was done on investigating the cause of this cluster of patients, they were given thiamine supplementation and responded well. Blood samples revealed that all had thiamine deficiency with varying severity of beri-beri induced heart failure. This case report illustrates that nutritional deficiency while underdiagnosed is still a common entity and must still remain at the back of our minds when seeing a critically ill patient. Amongst them, thiamine deficiency is very common and there are advocates for early thiamine supplementation in critically ill patients. Besides that, this case report also illustrates the rare relationship between beri-beri and reversible pulmonary hypertension.



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