SOUVENIR PROGRAMME & ABSTRACT BOOK

ANNUAL SCIENTIFIC MEETING ON INTENSIVE CARE

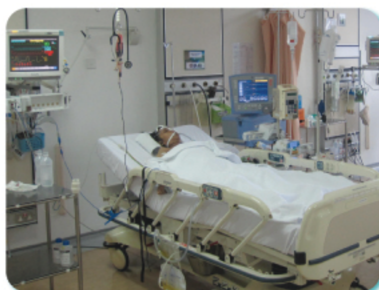
ASMIC 2017

&

1st Asian Pediatric Mechanical Ventilation Forum

18th to 20th August 2017

SHANGRI-LA HOTEL
KUALA LUMPUR
MALAYSIA



World Federation of Pediatric Intensive & Critical Care Societies

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Message from the President
Malaysian Society of Intensive Care

Welcome to ASMIC 2017, the 8th in the series and the 9th Society's Annual General Meeting.

The Annual Scientific Meeting in Intensive Care is the most important activity of the Society every year. Therefore, I would like to take this opportunity to express my sincere thanks to all parties which have made this event a reality every year – the organising committee, the speakers, the industry and the delegates.

The world has been fast changing since the advent of computer and internet. This fast change applies to all aspects of our life. Intensive care medicine is no exception. While we should keep up-to-date with current knowledge and developments, we should also think of discovering new knowledge. This comes with constant thinking and then putting the thoughts into study.

The Society is keen to sponsor researchers. We have drawn up the criteria for sponsoring researchers to present their research findings in conferences and they are available on the Society website i.e. www.msic.org.my

The Australian and New Zealand Society of Intensive Care (commonly known as ANZICS) started the Intensive Care Global Rising Star Programme four years ago to encourage and support innovative and productive early to mid-career clinicians/scientists to disseminate their findings to an international audience by awarding a number of fellowships. One fellowship will be awarded to a clinician/scientist from each of the following regions: America (Canada, USA and South America), Europe (including United Kingdom and Ireland) and Asia.

A few eminent intensivists in Asia, Dr Younsuck Koh from Korea, Dr Charles Gomersall from Hong Kong, Dr Jason Phua from Singapore and Dr Jigi Divatia from India, formed an Asian Critical Care Clinical Trials Group with members from Bangladesh, Indonesia, Japan, Malaysia, Nepal, Pakistan, Philippines, Saudi Arabia, Sri Lanka and Thailand in 2012 with the mission to improve the practice of critical care medicine and the outcomes of critically ill patients through collaborative clinical research in Asia.

I urge budding specialists to venture into research to bring intensive care to a high level.

For the nurses who make up 35% of Society membership, we also have a programme to sponsor them to attend the Basic Assessment and Support in Intensive Care Course (BASIC for NURSES Course) if they present oral or poster presentations in ASMIC.

It is encouraging to know that in this year's ASMIC, we received 32 papers for both oral and poster presentations. This is the most number of papers that we have since the 1st ASMIC. Please spend some time to look at those papers and to attend the oral presentations.

I wish all of you a meaningful and joyful meeting.

Dr Tan Cheng Cheng

Message from the Chairperson Organising Committee, ASMIC 2017

Selamat Datang.

The Malaysian Society of Intensive Care welcomes you to this year's Annual Scientific Meeting on Intensive Care (ASMIC) 2017 and the 1st Asian Pediatric Mechanical Ventilation Forum. Research and knowledge in the area of intensive and critical care continues to increase rapidly each year. As busy doctors and healthcare providers who look after these patients, ASMIC 2017 will provide a wonderful opportunity to obtain the latest information and practice updates in this area. The scientific content has been planned to cover the most relevant topics to practising doctors and healthcare providers in intensive and critical care, and will be delivered by both renowned international and local speakers. There will be small group Meet-the-Expert sessions where in-depth discussions and debates can be carried out.

We are also very pleased to host the inaugural Asian Pediatric Mechanical Ventilation Forum this year. Endorsed by the World Federation of Pediatric Intensive and Critical Care Societies, the aim of this Forum is to promote discussion regarding the best practices and challenges that we face in providing respiratory support to critically ill children. It is hoped that this forum will enhance research collaboration and discussions in advanced respiratory support for children within Asia.

To our friends from overseas, we encourage you to explore the multi-ethnic city of Kuala Lumpur and enjoy the varied Malaysian cuisine.

We wish everyone a fruitful meeting and networking.

Assoc Prof Dr Tang Swee Fong

Malaysian Society of Intensive Care Executive Committee 2015-2017

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Dr Azmin Huda Abdul Rahim

Assoc Prof Dr Gan Chin Seng

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Frank Van Haren

HONG KONG
Gavin Joynt

ITALY
Antonio Pesenti

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Tan Herng Lee
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Shanthi Ratnam
Tang Swee Fong
Toh Khay Wee
Wan Daud Wan Kadir
Wan Nasrudin Wan Ismail

NONINVASIVE VENTILATION IN PAEDIATRICS

VENUE: KEDAH / SELANGOR

The use of noninvasive ventilation has emerged as an important form of acute and chronic respiratory support in paediatric patients. This pre-conference workshop will give an overview for the use of noninvasive ventilation including lectures on the basic concepts and choice of noninvasive ventilation and high flow nasal cannula. There will also be small group skills stations which will allow interactive discussions on the use of these modalities in the clinical setting.

0800 – 0900	Registration
0900 – 1000	Noninvasive ventilation – Basic concepts and predictive factors for NIV failure ***Frank Lu***
1000 – 1030	How do I choose the patient for NIV? ***Gan Chin Seng***
1030 – 1100	TEA
1100 – 1200	What is the difference between NIV and HFNC – Is HFNC also NIV and does it work? ***Jacqueline Ong***
1200 – 1210	Participants go to assigned skills stations
1210 – 1240	Skill station 1: How do I choose an interface? ***Tan Herng Lee***
1240 – 1340	LUNCH
1340 – 1420	Skill station 2: How do I put a child on NIV? ***Gan Chin Seng***
1420 – 1500	Skill station 3: How do I put a child on HFNC? ***Jacqueline Ong***
1500 – 1540	Skill station 4: Monitoring, troubleshooting and complications of NIV use ***Frank Lu***
1540 – 1600	Q & A and closing
1600 – 1630	TEA

HOW TO READ A JOURNAL ARTICLE: A QUICK GUIDE FOR BEGINNERS

VENUE: **PERAK**

Ever felt overwhelmed by loads of 'latest' journal articles on your e-mail or social media screens? Ever wondered how to decide if they are reliable, and whether the findings should change your practice? If all this bothers you, you will find this workshop useful.

The workshop will take you step-by-step through two important types of journal articles for the busy clinicians – Randomized Controlled Trial and Systematic Review. You will gain the skills to appraise the methodology of clinical trials, to make sense of the results and their significance; and to judge if the results apply to your patients. You will be clearer on the concept of Evidence-Based Medicine (EBM) and more confident with terms like randomization, relative risks, number needed to treat and confidence intervals. The workshop will also cover the use of online resources like PubMed and Cochrane, and the application of GRADE criteria in the development of clinical guidelines.

The facilitators are senior consultants who are experienced in facilitating EBM workshops locally and internationally. They are Assoc Prof Lai Nai Ming, Assoc Prof Nor'azim Mohd Yunos, Assoc Prof Rafidah Atan and Dr Maria Lee Hooi Sean.

0800 – 0830	Registration
0830 – 0840	Welcome address
0840 – 0900	Introduction: EBM – What and why
0900 – 0930	The hierarchy of evidence
0930 – 1015	Quick clinician-oriented search*(hands-on)
1015 – 1045	TEA
1045 – 1130	Appraising randomised controlled trials
1130 – 1300	Appraising an RCT paper on therapy (hands-on small group session)
1300 – 1400	LUNCH
1400 – 1445	Appraising systematic reviews
1445 – 1615	Appraising a systematic review paper on therapy (hands-on small group session)
1615 – 1635	GRADE criteria – from evidence to recommendations
1635 – 1650	Summary, evaluation and feedback

NURSING ASSESSMENT FOR RESPIRATORY COMPROMISED PATIENTS

VENUE: MELAKA

0800 – 0830	Registration
0830 – 0915	Optimize your pulse oximetry monitoring ***Ivan Lee***
0915 – 1000	Capnography monitoring and waveform interpretation ***Yap Pey Y'ng***
1000 – 1030	COFFEE
1030 – 1115	Active and passive humidification ***Kuah Lee Peng***
1115 – 1200	Ventilator-Associated Pneumonia (VAP) ***Pryma Baskaran***
1200 – 1300	LUNCH
1300 – 1500	Workshops and group discussion *(see below)*
1500 – 1530	COFFEE
1530 – 1630	Jeopardy (Fun competition on the training content with a prize for the winner)

WORKSHOP (Audience are divided into 3 groups: A, B, C)

TOPIC	FACILITATOR	1300 – 1340	1340 – 1420	1420 – 1500
Ventilator-Associated Pneumonia (VAP)	Pryma Baskaran	A	B	C
Capnography monitoring and waveform interpretation	Yap Pey Y'ng	B	C	A
Optimize your pulse oximetry monitoring	Ivan Lee	C	A	B

Daily Programme
18th August 2017, Friday

0800 – 0845 **REGISTRATION**

0845 – 0930 **PLENARY 1** — SABAH

Chairperson: Tan Cheng Cheng

Antibiotics and resistance – Are we doomed?
Ian Seppelt

0930 – 1015 **OPENING CEREMONY** — SABAH

Time	Event
0930	Welcome by Assoc Prof Tang Swee Fong, Chairperson, Organising Committee
0935	Speech by Dr Tan Cheng Cheng, President, Malaysian Society of Intensive Care
0940	Speech by Y Bhg Dato' Dr Azman Abu Bakar, Director of Medical Development Division, Ministry of Health, representing Director-General of Health
1000	Launching of the Guide To Antimicrobial Therapy In The Adult ICU 2017
1010	Coffee / Tea

1015 – 1100 Tea / Trade Exhibition

1100 – 1240	SABAH	SARAWAK	PERAK
	SYMPOSIUM 1 **Perioperative Medicine** *Chairpersons:* *Noor Airini Ibrahim* *Lee Chew Kiok*	**SYMPOSIUM 2** **Haemodynamics / Fluids** *Chairperson:* *Premela Naidu Sitaram*	**SYMPOSIUM 3** **Pediatric Symposium** *Chairperson:* *Tang Swee Fong*
1100 – 1125	Long term effects of short term harm *Rupert Pearse*	Personalised blood pressure targets *Frank Van Haren*	1100 – 1130 Pediatric severe sepsis: What's new and controversial in fluid strategies? *Lee Jan Hau*
1125 – 1150	Challenges in the post operative care of the very elderly *Gavin Joynt*	Managing fluids in liver failure *Laila Kamaliah Kamalul Bahrin*	1130 – 1200 Pediatric acute liver failure and artificial liver support *Satoshi Nakagawa*
1150 – 1215	Post operative pulmonary complications *Toh Khay Wee*	Pitfalls of echocardiography as a haemodynamic monitoring tool *Ian Seppelt*	1200 – 1230 End of life care in the PICU: Are we allowed to let them die? *Dick Tibboel*
1215 – 1240	Perioperative cardiac output guided haemodynamic therapy *Rupert Pearse*	Reverse (fluid) resuscitation – Should we be doing it? *Nahla Irtiza Ismail*	

1240 – 1430 — Lunch Satellite Symposium (ASTELLAS) — SABAH

Chairperson: Tai Li Ling

Invasive candidiasis in critically ill patients
Shih-Chi Ku

1430 – 1610	SABAH	PERAK / MELAKA	SARAWAK
	SYMPOSIUM 4 **Sepsis** *Chairpersons:* *Mohd Basri Mat Nor* *Wan Daud Wan Kadir*	**SYMPOSIUM 5** **Intensive Care For Nurses I** *Chairperson:* *Lim Siew Kim*	**1st APMVF** *Chairperson:* *Lee Jan Hau*
1430 – 1455	Sepsis in Asia – We need to do more ***Jason Phua***	Infection control practices (1): Understanding the key points ***Nik Azman Nik Adib***	1430 – 1440 Introduction ***Lee Jan Hau***
1455 – 1520	Lessons from EGDT trials – Do we need a Malaysian version? ***Mahazir Kassim***	Caring for the tracheostomised patient – What to look out for ***Mohd Nazri Ali***	1440 – 1510 Year in Review: Pediatric Respiratory Failure ***Tang Swee Fong***
1520 – 1545	Updates on beta-blockers in sepsis ***Noryani Mohd Samat***	Fulfilling family's needs at patient's end of life in a multicultural society ***Hasimah Zainol***	1510 – 1540 What is new and exciting in pediatric mechanical ventilation? A review of the current literature ***Rujipat Samransamruajkit***
1545 – 1610	Fluids in sepsis – Evidence to practice ***Ian Seppelt***	Medication by the inhalational route ***Lau Chee Lan***	1540 – 1600 Open discussion on updates in pediatric respiratory failure and conventional mechanical ventilation ***Lee Jan Hau*** ***Rujipat Samransamruajkit*** ***Tang Swee Fong***

1610 – 1630 — Tea

1630– 1730 — **FREE PAPERS** *[PAGE 19-26]* — PERAK / MELAKA

0800 – 0900

PENANG	JOHOR 3
MEET THE EXPERT 1 *Moderator: Shanti Rudra Deva* Navigating ethical issues at the end of life ***Gavin Joynt***	**MEET THE EXPERT 2** *Moderator: Nik Azman Nik Adib* Ensuring my patients are properly fed ***Mette Berger***

0900 – 0945

PLENARY 2 — SABAH

Chairperson: Tang Swee Fong

Cardiac arrest in children: Beyond survival… Neuropsychological and behavioural outcomes

Dick Tibboel

0945 – 1030

PLENARY 3 — SABAH

Chairperson: Tang Swee Fong

Perioperative medicine and the role of intensive care units

Rupert Pearse

1030 – 1100

Tea / Trade Exhibition

1100 – 1300

Time	SABAH	PERAK / MELAKA	SARAWAK
1100 – 1300	**SYMPOSIUM 7** **Ventilation** *Chairpersons:* *Siti Rohayah Sulaiman* *Noryani Mohd Samat*	**SYMPOSIUM 8** **Trauma / Burns** *Chairperson:* *Lim Chew Har*	**1st APMVF** *Chairperson:* *Satoshi Nakagawa*
1100 – 1125	Spontaneous breathing in ARDS ***Antonio Pesenti***	Fluid resuscitation in the burns patient ***Mette Berger***	1100 – 1135 High flow nasal cannula: Is it over-used in the critically ill child? ***Jacqueline Ong***
1125 – 1150	NIV in ICU – Pushing the boundaries ***Jason Phua***	What's new in blood transfusion practices in polytrauma ***Lee See Pheng***	1140 – 1215 Non-invasive ventilation in pediatric respiratory failure ***Frank Lu***

1150 – 1215	Preventing extubation failures – Are we doing enough? *Shanthi Ratnam*	Updates on hypertonic saline in trauma resuscitation *Wan Nasrudin Wan Ismail*	1215 – 1245 Nuts and Bolts on humidification *Tan Herng Lee*
1215 – 1240	Extracorporeal CO_2 Removal – Technical and clinical perspectives *Antonio Pesenti*	Trauma resuscitation – What are the important end targets *Rupert Pearse*	1245 – 1300 Open discussion on non-invasive ventilation and high flow nasal cannula and airway clearance *Frank Lu* *Jacqueline Ong* *Tan Herng Lee*

1300 – 1430 Lunch

Official Poster Round — POSTER AREA

	SABAH	PERAK / MELAKA	SARAWAK
1430 – 1610	**SYMPOSIUM 10** **Ethics / End-Of-Life** *Chairperson: Tai Li Ling*	**SYMPOSIUM 11** **Intensive Care For Nurses II** *Chairperson: Hasimah Zainol*	**1st APMVF** *Chairperson: Rujipat Samransamruajkit*
1430 – 1455	Reconciling intensive care use with the very old *Frank Van Haren*	Infection control practices (2): 3 different approaches for 3 different bugs: MRO, *C. difficile*, MTB *Wan Daud Wan Kadir*	1430 – 1505 High frequency oscillatory ventilation in children with severe respiratory failure *Satoshi Nakagawa*
1455 – 1520	End-of-life care in Asian ICUs – Cultural and economic drivers *Jason Phua*	Swallowing difficulties in the ICU patients – What you need to know *Asmah Zainudin*	1510 – 1545 Airway pressure release ventilation in the PICU: Current evidence *Chor Yek Kee*

1520 – 1545	Shared decision making at the end of life – Should it be the default practice *Lam Chee Loong*	Overcoming challenges in nursing the obese patient *Lim Chew Har*	1545 – 1605 Open discussion on HFOV and APRV and alternative modes of ventilation (volume guarantee or VTPC or dual mode) *Satoshi Nakagawa* *Phan Huu Phuc* *Chor Yek Kee*
1545 – 1610	Am I obliged to come to work in a pandemic? *Gavin Joynt*	Silence is golden *Lee Chew Kiok*	
			1610 – 1710 Update on regional research in pediatric respiratory failure and mechanical ventilation *Judith Wong* *Lee Jan Hau* *(PROSPect trial)*
			Challenging cases for discussion *Nattachai Anantasit* *Chor Yek Kee*
			APMVF Networking Session

1610 – 1630 Tea

1630 **AGM OF THE MALAYSIAN SOCIETY OF INTENSIVE CARE** PERAK / MELAKA

Time	PENANG	JOHOR 3
0800 – 0900	**MEET THE EXPERT 3** *Moderator: Siti Rohayah Sulaiman* How I manage the difficult-to-ventilate patients ***Antonio Pesenti***	**MEET THE EXPERT 4** *Moderator: Asmah Zainuddin* How I manage fluids in the critically ill adults ***Frank Van Haren***

0900 – 0945

PLENARY 4 SABAH

Chairperson: V Kathiresan

How to read the critical care nutrition literature

Mette Berger

0945 – 1030

PLENARY 5 SABAH

Chairperson: V Kathiresan

ARDS: From a syndrome to personalized medicine

Antonio Pesenti

1030 – 1100

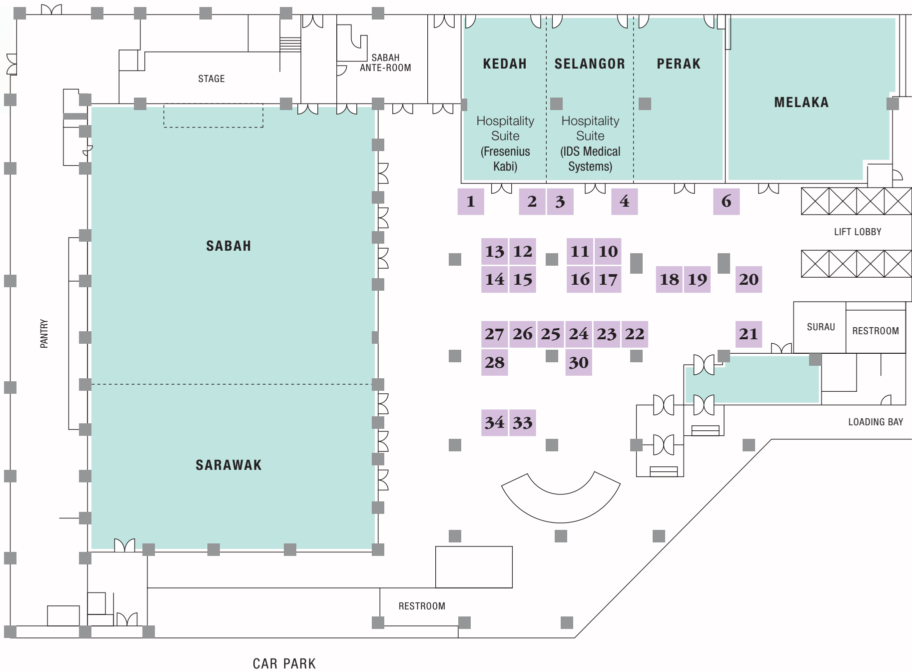
Tea / Trade Exhibition

Time	SABAH	PERAK / MELAKA	SARAWAK
1100 – 1240	**SYMPOSIUM 13** **Infections** *Chairpersons:* *Louisa Chan* *Mohd Nazri Ali*	**SYMPOSIUM 14** **Nutrition** *Chairpersons:* *Nik Azman* *Wan Daud Wan Kadir*	**1st APMVF** *Chairperson:* *Jacqueline Ong*
1100 – 1125	Selective decontamination of the digestive tract – What, why and how ***Ian Seppelt***	Malnutrition in ICU – Stop the starvation ***Noor Airini Ibrahim***	1100 – 1130 Do we still need adjunct therapies in pediatric ARDS? ***Phan Huu Phuc***
1125 – 1150	Antisepsis: Oral and body care – Should we change practice? ***Azmin Huda Abdul Rahim***	Trace elements and antioxidants – Therapeutic aspects ***Mette Berger***	1130 – 1200 Sedation and analgesia in pediatric mechanical ventilation: Are we doing it optimally? ***Dick Tibboel***

1150 – 1215	The obese patients – Pitfalls in antibiotic dosing *Mohd Basri Mat Nor*	Key points in feeding the obese patients *Ahmad Shaltut Othman*	1200 – 1215 Open discussion on challenges in sedation/analgesia within the region *Dick Tibboel*
1215 – 1240	Coping with an influenza outbreak *Gavin Joynt*	Role of nutrition and muscle training *Frank Van Haren*	1215 – 1230 Closing remarks *Lee Jan Hau*

1240 – 1340 LUNCH

Floor Plan, Trade Exhibition and Hospitality Suite (Basement II)



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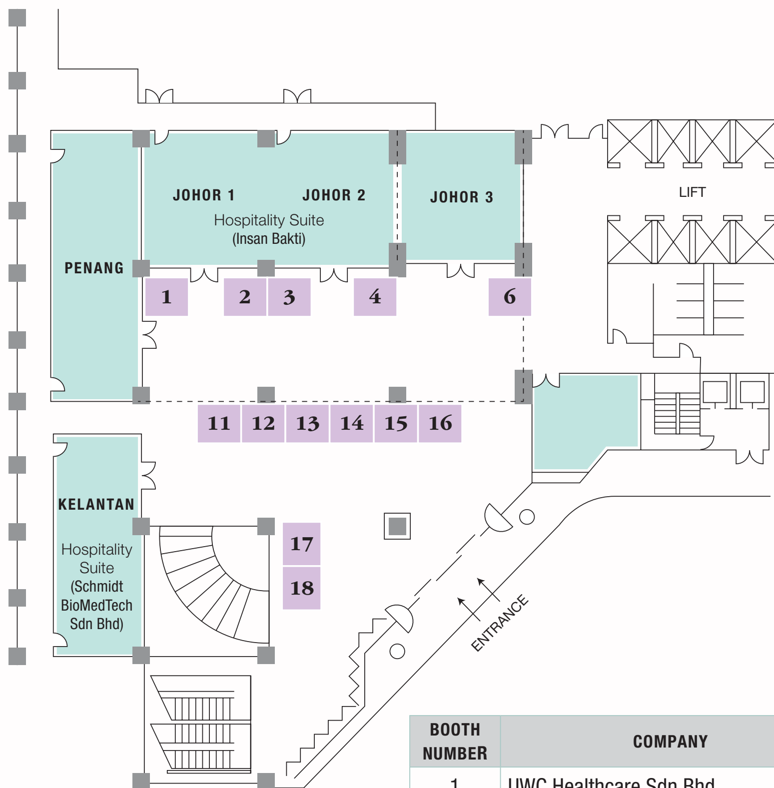

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Acknowledgements

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FP 1 Improving Postoperative Handover Process In A Tertiary-Care Hospital In Saudi Arabia: A Quality Improvement Project — 20-21
Tarek AlDabbagh, Z Yousef, M Harbi, A Zahrani, A A5asi, N Tashkandi, B Naidu, H Aldorzi, Y Arabi
King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia

FP 2 Model-Based Insulin Sensitivity For Early Diagnosis Of Sepsis In Critical Care — 22
Wan Fadzlina W M Shukeri[1,2], Azrina Md Ralib[1], Ummu K Jamaludin[3], Mohd Basri Mat Nor[1]
[1]Department of Anaesthesiology and Critical Care, International Islamic University of Malaysia, Kuala Lumpur, Selangor, Malaysia
[2]Department of Anaesthesiology and Intensive Care, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia
[3]Faculty of Mechanical Engineering, Universiti Malaysia Pahang, Pahang, Malaysia

FP 3 Severe Dengue In Intensive Care Unit – What Have We Learnt In Five Years? — 23
F K Kan[1], C C Tan[2], K E Khalid[1], P Tok[3], L H Tan[4]
[1]Department of Medicine, Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia
[2]Department of Anaesthesiology and Intensive Care, Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia
[3]Clinical Research Centre, Hospital Sultanah Aminah, Johor Bahru, Johor, Malaysia
[4]Sunway Medical Centre, Petaling Jaya, Selangor, Malaysia

FP 4 Feasibility Of Plethysmography Variability Index (PVI) In Determining Intravascular Volume In The Critically Ill Patients With Acute Kidney Injury: A Pilot Study — 24
C H Ang, L Ab Mukmin, E K Lee
Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia

FP 5 Risk And Prognostic Factors For Severe Leptospirosis In Intensive Care Unit Hospital Raja Perempuan Zainab II, Kota Bharu — 25
Mohd Zulfakar Mazlan[1], Chee Yen Yew[1], Saedah Ali[1], Laila Ab Mukmin[1], Nazri Ali[2]
[1]Department of Anaesthesia and Intensive Care, School of Medicine, Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia
[2]Department of Anaesthesia and Intensive Care, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan, Malaysia

FP 6 The Correlation Of Bedside Ultrasound Inferior Vena Cava Distensibility Index With Pulse Pressure Variation And Central Venous Pressure In Ventilated Sepsis Patient In Assessing Fluid Status In Intensive Care Unit East Coast Malaysia — 26
Mohd Zulfakar Mazlan, Saedah Ali, Shamsul Kamalrujan Hassan, Wan Mohd Nazaruddin Wan Hassan, Nik Abdullah Nik Mohamed
Department of Anaesthesiology and Intensive Care, School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia

IMPROVING POSTOPERATIVE HANDOVER PROCESS IN A TERTIARY-CARE HOSPITAL IN SAUDI ARABIA: A QUALITY IMPROVEMENT PROJECT

Tarek AlDabbagh, Z Yousef, M Harbi, A Zahrani, A A5asi, N Tashkandi, B Naidu, H Aldorzi, Y Arabi

King Abdulaziz Medical City, National Guard Health Affairs, Riyadh, Saudi Arabia

BACKGROUND

Ineffecive communicaion among healthcare providers in the postoperaive period is common and may jeopardize paient safety and adversely affect paient outcomes. In this project, we aimed at achieving effecive postoperive handover at a teriary-care hospital.

METHODS

A quality improvement project was conducted at the Surgical intensive care unit (ICU) of King Abdulaziz Medical City-Riyadh to improve the postoperaive handover process. The project stakeholders were physicians (surgeons, anesthesiologists and intensivists), nurses (OR, ICU) and the hospital administraion.

The project had muliples phases. In the pre-implementaion period, an assessment tool was generated to measure the elements of the handover process. For purposes of measurement, a postoperaive handover bundle was created which consisted of the presence of physicians from the three disciplines at the bedside on arrival to the ICU. In the preparaion phase, a mulidisciplinary team generated a postoperaive handover checklist which include several elements filled by the three disciplines involved in the care:

Anesthesia, surgery and ICU. In the implementaion phase, all involved disciplines oriented on the new handover process. The compliance with the process was measured and feedback was provided to the involved departments.

RESULTS

In the pre-implementation period, the compliance with the postoperative handover bundle was 0 %. In the 16 months post-implementation, there were 407 postoperative handovers and the compliance with the bundle increased to 91.7%.

On the postoperative handover forms, the documentation by surgeons of anticipated surgical problems in the first 24 postoperative hours was specified in 90.09%, feeding plan in 90.17%, DVT prophylaxis in 88.69%, and family update in 83.04%.

The documentation of difficult airways by anesthesiologists was 90.41%. Predefined outcome measures were documented for 118 patients: intubation within 6 hours of ICU admission in 0.84 %, fluid resuscitation or adding vasopressors within 1 hour of ICU admission in15.25%, unplanned return to OR in 0.84% and cardia arrest in 0.84%

CONCLUSIONS

Implemening postoperave handover checklist and bundle was feasible and highly successful in geUng all involved disciplines together at bedside postoperaively. Addiionally, documentaon of critical informaion was achieved in majority of paients post-implementaion. This improvement in the process of handover and in communicaion is likely to be reflected on paient outcome

MODEL-BASED INSULIN SENSITIVITY FOR EARLY DIAGNOSIS OF SEPSIS IN CRITICAL CARE

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OBJECTIVES

To determine the diagnostic value of model-based insulin sensitivity (S_I) as a new sepsis biomarker in critically ill patients, and compare its performance to classical inflammatory parameters.

METHODS

We monitored hourly SI levels in septic (n=19) and non-septic (n=19) critically ill patients in a 24-hour follow-up study. Patients with type I or type II diabetes mellitus were excluded. S_I levels were calculated by a validated glycemic control software, STAR TGC (Stochastic TARgeted Tight Glycemic Controller) (Christchurch, NZ). STAR TGC uses a physiological glucose-insulin system model coupled with stochastic models that capture SI variability in real time.

RESULTS

The median SI levels were lower in the sepsis group than in the non-sepsis group (1.9 x 10^{-4} L/mU/min vs 3.7 x 10^{-4} L/mU/min, $P<0.0001$). The areas under the receiver operating characteristic curve (AUROC) of the model-based SI for distinguishing non-sepsis from sepsis was 0.911, superior to white cells count (AUROC 0.611) and temperature (AUROC 0.618). The optimal cut-off value of the test was 2.9 x 10^{-4} L/mU/min. At this cut-off value, the sensitivity and specificity was 88.9% and 84.2%, respectively. The positive predictive value was 84.2%, while the negative predictive value was 88.9%.

CONCLUSION

The early and relevant decrease of S_I in sepsis suggests that it might be a promising novel biomarker of sepsis in critical care. Low S_I is diagnostic of sepsis, while high S_I rules out sepsis, and these may be determined non-invasively in real time from glycemic control protocol data.

SEVERE DENGUE IN INTENSIVE CARE UNIT – WHAT HAVE WE LEARNT IN FIVE YEARS?

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OBJECTIVE

Dengue infection has been among the top ten diagnoses leading to intensive care unit (ICU) admission for past ten years with last three years being the top. We aim to determine the associating factors for severe dengue (SD) mortality, severe bleed and severe organ involvement in our 29-bedded adult ICU.

DESIGN

Retrospective cohort study from 2010 to 2014.

METHODS

Patients were identified from ICU registry. Each SD was determined by two clinicians independently based on WHO 2009 classification. Univariable and multivariable analyses were performed to identify factors for mortality, severe bleed and severe organ involvement.

RESULTS

Of the 8802 ICU admissions, 288 (3.3%) were due to dengue infection. After excluding 9 patients with missing medical records, we had 198 (71.0%) SD patients with 20.2% mortality. Univariable analysis of organ failure based on Sequential Organ Assessment Score (SOFA) identified all other organs (respiratory, cardiovascular, central nervous, renal and hepatic) except haematological failure (platelet count $< 50 \times 10^3$/ul) as significant factors for SD mortality ($p < 0.05$) and on multivariable analysis, respiratory failure was no longer significant. Haematological failure was also not associated with severe bleed nor severe organ involvement. Univariable analysis of all other factors identified severe sepsis, acute respiratory distress syndrome, acute kidney injury, total organ failure, severe leak, severe bleed, lethargy, hepatomegaly, APACHE II, SAPS II and SOFA score, HScore ≥ 0.7, maximum AST, ALT, LDH and ferritin as significant associating factors for SD mortality ($p < 0.05$). There were 28 patients who developed hemophagocytic syndrome (HScore ≥ 0.7) with 39.3% mortality.

CONCLUSION

Platelet count $<50 \times 10^3$/ul was not significantly associated with severe dengue mortality and severe bleed. Mortality for patients with hemophagocytic syndrome doubled that of SD.

FEASIBILITY OF PLETHYSMOGRAPHY VARIABILITY INDEX (PVI) IN DETERMINING INTRAVASCULAR VOLUME IN THE CRITICALLY ILL PATIENTS WITH ACUTE KIDNEY INJURY: A PILOT STUDY

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BACKGROUND

Accurate and timely assessment of intravascular volume status in critically ill patients presenting with acute kidney injury remains a challenge despite the availability of various measurement modalities. Technically, these modalities are divided into two groups; dynamic and static. This pilot study aims to investigate the correlation of plethysmographic variability index (PVI); a non-invasive dynamic monitoring device, with static modalities of central venous pressure (CVP), inferior vena cava distensibility index (dIVC), and dynamic modalities of intra-arterial systolic pressure (IASBP) and pulse pressure variation (PPV) in the assessment of intravascular volume in critically ill patients with acute kidney injury.

METHODS

This was a prospective observational cross-sectional study using convenient sampling. A total of 30 patients who were admitted to critical care facilities, intubated and diagnosed with acute kidney injury based on Acute Kidney Injury Network (AKIN) classification and fulfilled the study criteria were recruited after consented by their legal guardians. The PVI, IASBP, CVP, dIVC and PPV values were collected at 8-hour interval for a period of 24 hours. Categorical variables were expressed in frequency and percentage while numerical variables were expressed in mean and standard deviation. Statistical analysis was carried out by SPSS version 22.0. p value of < 0.05 is considered statistically significant.

RESULTS

The mean age for patients included in this study was 50 ± 19. Mean SOFA score was 8.1 ± 3.1 and mean AKIN value was 1.67 ± 0.81. PVI showed a statistically significant positive correlation with both static measurement dIVC and dynamic measurement PPV (both $p = <0.001$). There was no correlation between PVI and CVP or IASBP (CVP, $p = 0.499$ and IASBP, p value = 0.605).

CONCLUSION

This pilot study demonstrates a statistically significant correlation of PVI with dIVC and PPV but not with CVP or IASBP.

RISK AND PROGNOSTIC FACTORS FOR SEVERE LEPTOSPIROSIS IN INTENSIVE CARE UNIT HOSPITAL RAJA PEREMPUAN ZAINAB II, KOTA BHARU

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PURPOSE

Leptospirosis has a wide range of clinical presentation from mild to severe disease with organ dysfunctions and death. There are risk and prognostic factors for severity and mortality including demographic, epidemiological, clinical presentations and laboratory results. Early recognition of risk factors enables early ICU care and organ supports. The study was conducted to identify the risk and prognostic factors for severe leptospirosis and its mortality.

METHODS

This was a retrospective case-control study carried out in the general ICU in Hospital Raja Perempuan Zainab II from 1st January 2013 to 31st December 2016. Patients who presented with severe organ involvement which required dialysis, tracheal intubation and mechanical ventilation, vasopressors or inotropes, transfusion or death were included. Controls were defined as patient with mild organ involvement without requirement or with minimal organ supports. Chi-Square test, Fisher's exact test, Student t-test or Mann Whitney test was used. A logistic regression model was used to select final prognostic factors.

RESULTS

Ninety six leptospirosis patients were included in the study. Among 96 patients enrolled in the study, 66 patients were in the severe group, 30 patients were in the control group. Laboratory parameters that were independently identified as risk factor associated with severe leptospirosis were: AST (OR: 4.2 [1.608, 10.970]); ALT (OR: 2.857 [1.153, 7.082]); urea (Or:2.895 [1.081,7.753]); PT (OR:4.797 [1.629,14.126]); INR (OR: 3.714[1.157, 11.920]); ratio (OR: 8.399); CKMB (OR:7.0 [1.961,24.985]). The independent risk factors which were associated with mortality: SAPS II score (OR:1.045 [1.007-1.083]); risks of hospital death (OR:1.029 [1.004-1.053]); PT (1.069 [0.00--]); INR (OR:4.48 [1.524-13.17]), APTT (OR:2.933 [0.993-8.66]), ratio (OR:21.87[2.52-189.86]), ECG(OR1.13 [0.00--])

CONCLUSION

Risk and prognostic factors for severe leptospirosis were elevated liver enzyme, raised urea level, coagulopathy and raised CKMB level whereas the risk and prognostic factors for mortality were coagulopathy and ECG changes.

THE CORRELATION OF BEDSIDE ULTRASOUND INFERIOR VENA CAVA DISTENSIBILITY INDEX WITH PULSE PRESSURE VARIATION AND CENTRAL VENOUS PRESSURE IN VENTILATED SEPSIS PATIENT IN ASSESSING FLUID STATUS IN INTENSIVE CARE UNIT EAST COAST MALAYSIA

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INTRODUCTION

Inferior vena cava (IVC) distensibility index, pulse pressure variation (PPV), and central venous pressure (CVP) are known to be important variables in assessing the fluid status in critically ill patients. Previous studies demonstrated that CVP is a poor predictor of fluid status. The objective of this study is to determine the correlation between the IVC distensibility index, with CVP and PPV as an indicator of fluid status in ventilated septic patients prior to decision making concerning fluid challenges.

METHODOLOGY

A cross-sectional study was conducted to sixty-seven ventilated adult patients in sepsis admitted to the Intensive Care Unit (ICU) Hospital Universiti Sains Malaysia (HUSM) from April 2014 until November 2014. The IVC distensibility index was measured by bedside potable ultrasound. Meanwhile, PPV and CVP was calculated and measured manually.

RESULTS

There was a significant correlation between the IVC distensibility index and PPV ($r = 0.49$, p-value < 0.001). There was no significant correlation between IVC distensibility index towards CVP ($r = -0.17$, p-value 0.166). There was also no significant correlation between PPV towards CVP ($r = 0.05$, p-value 0.674).

CONCLUSION

There was a good correlation between IVC distensibility index and pulse PPV but not with CVP in assessing fluid status in ventilated septic patients. Thus, high index of suspicion among the clinicians together with other clinical parameter is required to decide on fluid resuscitation in ICU.

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MAGNESIUM SULPHATE IN CRITICAL CARE: A POTENTIAL ADJUNCT IN THE MANAGEMENT OF ADULT PULMONARY ARTERIAL HYPERTENSION (PAH)

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Pulmonary arterial hypertension (PAH) in adults is a heterogeneous condition caused by pulmonary vascular disease. The management of adult pulmonary hypertension remains challenging as availability of treatment with inhaled nitric oxide (iNO) and extracorporeal membrane oxygenation (ECMO) is limited.

We are the first in Malaysia to report the successful management of an adult PAH with the use of $MgSO_4$ infusion. Our initial conventional management included a combination of iNO, Milrinone infusion and oral Sildenafil improved her arterial oxygen tension (PaO_2) from 58mmHg to 71.1mmHg on FiO_2 1.0 but plateaus thereafter. Magnesium sulphate ($MgSO_4$) is a potent vasodilator at high serum concentration and could potentially reduce pulmonary arterial pressure. In view of persistent hypoxemia, $MgSO_4$ infusion was initiated on Day 2 of admission with a loading dose of 50mg/kg over 20 minutes followed by maintenance with 30mg/kg/hour over 6 hours of which the PaO_2 improved to 77.1mmHg. However it deteriorated to 64mmHg after the withdrawal of milrinone infusion and further to 39.7mmHg when $MgSO_4$ was witheld. We repeated $MgSO_4$ regime without milrinone infusion on day 4 admission. Her PaO_2 improved to 70.3mmHg by the first hour; 120mmHg at the sixth hour of $MgSO_4$ infusion. Our patient progressively improved and was extubated on day 12 to non-invasive ventilation and later to nasal cannula.

The improvement of arterial oxygen tension might be due to the decrease in pulmonary vascular resistance (PVR) leading to decrease in right-to-left shunt. We deduce that $MgSO_4$ infusion is an effective adjunct in the management of adult PAH. This translates to a treatment that is potentially life-saving, cost effective and easily available.

VANCOMYCIN PHARMACOKINETICS IN ICU PATIENTS: A PRELIMINARY DATA

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OBJECTIVE

The pharmacokinetics of Vancomycin in critically ill ICU patients are difficult to predict due to complex pathophysiological changes. Since there are limited studies worldwide, this study is therefore intended to explore the Vancomycin population pharmacokinetic parameters in critically ill ICU patients in Hospital Raja Perempuan Zainab II, Kelantan, Malaysia.

METHODS

A total of 51 samples from 19 ICU patients were included in the model building. The median observations per patient were three with a minimum of one observation and maximum of four observations per patients. Determination of vancomycin was performed using the COBAS INTEGRA analyser. Vancomycin population pharmacokinetics was modelled with a non-parametric approach using Pmetrics software

RESULTS

Vancomycin concentration-time profiles were best described by a one-compartment pharmacokinetic model. Mean population vancomycin clearance and volume of distribution is 2.55 L/hr and 1.43 L/kg respectively.

CONCLUSION

Lower vancomycin clearance and higher volume of distribution were observed compared to other populations due to differences in study design and clinical setting. Further investigation on the influences of covariates should be performed.

KEYWORDS

Pharmacokinetics, Vancomycin, ICU

NEEDS OF FAMILIES OF CRITICALLY ILL PATIENTS TREATED IN INTENSIVE CARE UNIT HOSPITAL QUEEN ELIZABETH, SABAH

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BACKGROUND

The needs of family members of intensive care in patients have often been neglected in Medical Literature. Health-care practitioners do not realize that meeting the needs of families and helping them coping with the period of hospitalization may improve outcomes of patients in Intensive Care Unit (ICU). There are limited studies on patients' family members in East Malaysia. The present study aims to discover the needs of such family members.

METHODS

This cross-sectional survey was conducted among family members of ICU patients at Hospital Queen Elizabeth. A total of 60 family members were recruited using a convenience sampling manner. A validated Critical Care Family Needs Inventory in Bahasa Malaysia was used to identify family needs among the respondents. Descriptive statistics as well as mean comparison analyses were employed to achieve the study.

RESULTS

The findings showed that family members ranked "assurance"as their most important need. In terms of subscale scores, "assurance and information" evidenced higher mean scores followed by "comfort and proximity". Subscale "support" was ranked the least important. All the family need dimensions had positive and significant associations between these subscale scores. The highest correlation was noted among "proximity - support" pair, $r = 0.85$, $p < 0.001$. No significant differences in the mean values found across gender, education level, history of admission and types of relationships.

CONCLUSION

Identifying the needs of family members in ICU is imperative as it raises awareness and assist ICU in finding solutions to meet their needs as well as contributes knowledge to health-care providers, policy makers and medical social workers.

CASE STUDY: LESSONS FROM AIRWAY TUBERCULOSIS PRESENTING AS STATUS ASTHMATICUS

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INTRODUCTION

This case study highlights dangers of diagnostic error where an unexplained deterioration in a patient's condition was not evaluated and considered.

BACKGROUND

We present a 25 year old lady, recently diagnosed asthmatic who presented to Emergency Department (ED), with sudden onset of difficulty breathing associated with noisy breathing for 3 days and hoarseness of voice for 6 months. A year ago, she was treated as Pulmonary Tuberculosis (PTB) and had completed treatment. Since then, she had multiple episodes of bronchospasm that required nebulization at a local clinic precipitating the diagnosis of bronchial asthma.

On presentation, she was in respiratory distress with silent chest and marked use of accessory respiratory muscles. An arterial blood gas revealed a severe respiratory acidaemia. She received treatment including hydrocortisone, continuous nebulised beta-2 agonists, magnesium, antibiotics, and a salbutamol infusion. As her bronchospasm was not responding, ED team decided for intubation. Multiple attempts at intubation at ED before an alert to ICU was made, as although the larynx was visualized as Cormack-Lehane I, they were unable to advance the ETT beyond more than 1cm past the VC. Finally, she was intubated with ETT size 6.0mm ID where cuff was just after the vocal cord and anchored at 16 cm. We had difficulty ventilating her as her peak airway pressure's was persistently high with severe respiratory acidosis.

With the abnormal laryngoscopy and life-threatening bronchospasm and alternative diagnoses were explored. She underwent flexible nasopharyngolaryngoscope (FNPLS) that revealed subglottic stenosis. CT Thorax/Neck showed features of tracheobronchial stenosis with post primary PTB changes. Patient was subsequently treated successfully with anti TB medication and underwent multiple sessions of tracheal dilatation.

DISCUSSION

This case highlights the 'blind spot" of tracheal pathologies being forgotten in differential diagnosis causing a diagnostic error.

EVALUATION STUDY ON PRACTICE OF ENTERAL FEEDING AMONG INTENSIVE CARE PATIENTS HOSPITAL TENGKU AMPUAN AFZAN (HTAA)

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Malnutrition is associated with worse clinical outcomes among critically-ill patients. Since the establishment of national guideline on critical care feeding, we would like to evaluate the guideline implementation among our intensive care patients and to know the association outcome. We have conducted prospective study from April to May 2017 and managed to recruit 34 patients with the objectives to observe adherence to the guideline and outcome of our patients 30 days post enrollment of the study. We found that majority of us adhered to the guidelines in term of early initiation of feeding, achievement of the calorie target and approach on feeding intolerance. Post 30 days outcome such as nosocomial infection, prolonged ventilation and survival rate are not statistically difference among the patients who start feeding early or late and those achieve target of feeding within 72 hours start of feeding. We have concluded that adherence to the guideline is well established however evaluation on the outcome of enteral feeding in critical care patient need to be strengthen with more sample recruitment.

OBSERVATIONAL STUDY OF THE OUTCOME OF LEPTOSPIROSIS IN INTENSIVE CARE UNIT, HOSPITAL RAJA PEREMPUAN ZAINAB II, KOTA BHARU, KELANTAN

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BACKGROUND

Leptospirosis is an increasing threat in our country and often causes morbidity ad mortality when the cases require intensive care unit (ICU) admission. The aims of the study were to determine the outcome and factors that were associated with mortality for patients who were treated for leptospirosis in ICU.

METHODS

This was a retrospective, cross sectional study, involving 73 patients who were admitted for early diagnosis of leptospirosis with micro agglutination test (MAT) positive in ICU, Hospital Raja Perempuan Zainab II, Kota Bharu, from January 2010 to December 2014. Patients were initially identified from ICU admission book and the medical records of those with MAT positive were subsequently reviewed. The factors that might contribute to mortality such as demographic data, underlying comorbidities, clinical presentation, onset of symptoms, laboratory investigations and complications were compared between alive and dead groups.

RESULTS

On demographic data, 73.6% of the patients were from rural area, 39.7% patients required haemodialysis for acute kidney injury, 53.4 % patients developed pulmonary haemorrhage and 23.3 % of them finally died of leptospirosis in ICU. The mean onset of clinical symptoms to hospital admission was 5.9(3.6) days and mean duration of ventilation was 6.5 (2.3) days. Based on comparison of multiple factors, dead patients (n=17) showed more significant hyperkalaemia [5.4(1.0) vs. 4.0(0.8) mmol/l, $p<0.001$], higher alanine transaminase [498.9(559.6) vs. 158.3(219.6) mmol/l, $p=0.025$], prolonged prothrombin time [25.0(16.3) vs. 16.3(5.9), $p=0.045$] and prolonged in international normalised ratio (INR) [2.5(1.9) vs. 1.5(0.7), $p=0.042$] than alive group on admission. There were no significant differences in clinical symptoms.

CONCLUSION

Leptospirosis patients who died in ICU showed more hyperkalaemia, higher alanine transaminase, prolonged prothrombin time as well as INR on admission to ICU.

RISK FACTORS AND OUTCOMES OF CARBAPENEM-RESISTANT GRAM-NEGATIVE BLOOD STREAM INFECTION IN INTENSIVE CARE UNIT

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BACKGROUND

The aims of this study were to identify the risk factors and outcome of carbapenem-resistant gram-negative bacteremia (CR-GNB) in Intensive Care Unit (ICU), Hospital Universiti Sains Malaysia (HUSM).

METHODS

This was a retrospective, case-control study, involving 96 patients with gram-negative bacilli bacteremia in ICU over 4 years period (Jan 2010-Dec 2014). The cases were randomly selected from infection surveillance record and then their medical records were reviewed for data analysis. The cases were divided into two groups: Group CR-GNB (n=48) (as case) vs. carbapenem susceptible GNB (CS-GNB) (n=48) (as control). The control group was defined as ICU admitted patients during the same period, with similar inclusion and exclusion criterias.Their demographic profiles, underlying diseases, potential risk factors, antibiotic usage, microbiology results and outcome were reviewed between both groups.

RESULTS

The significant independent risk factors associated with CR-GNB were increased in length of ICU stay (OR 2.09, 95 % CI 1.01–33.18, p=0.019), diabetes mellitus (OR 3.5, 95 % CI 1.61–13.24, p=0.016), presence of tracheostomy (OR 5.17, 95% CI 1.94 – 18.92, p=0.010), presence of chest drain (OR 5.79, 95% CI, 4.27 – 24.40, p = 0.016), prior exposure to carbapenems (OR 5.90, 95% CI, 4.63 – 7.40, p = 0.002), those who have been infected by *Acinetobacter baumannii* (OR 6.18, 95% CI, 2.56 – 8.68, p = 0.010) and also *Pseudomonas aeruginosa* (OR 4.29, 95% CI, 0.22 – 8.48, p = 0.034). Attributable mortality in CR-GNB was significantly higher than CS-GNB (88.9% patients vs. 58.6% patients)(p=0.011) but there was no significant difference in crude mortality.

CONCLUSIONS

CR-GNB contributed to significant attributable mortality in ICU. Increased in ICU stay, diabetes mellitus, tracheostomy, chest drainage, carbapenem exposure, *Acinetobacter baumannii* and *Pseudomonas aeruginosa* infection were inependent risk factors.

RISK FOR MORTALITY AMONG CONFIRMED DENGUE PATIENTS ADMITTED TO INTENSIVE CARE UNIT (ICU)

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BACKGROUND

Dengue infection cause non-specific clinical manifestations with unpredictable clinical course and outcome. We evaluated the demographic, severity of clinical presentations and laboratory values as risk for mortality.

METHODS

Patients admitted to adult ICU, UKMMC between January 2010 and December 2014 with laboratory-confirmed dengue infection were included. The infection was classified according to WHO 2009 recommendation. The clinical parameters and laboratory investigations on admission to ICU were recorded and multivariate logistic regression analyses were performed.

RESULTS

Data from 178 patients were analyzed. They were admitted on day 3-5 of dengue illness with mean age of 36.96 ± 17.65 years. The mortality rate was 11.8%. All of the non-survivors had severe dengue with significantly higher APACHE II and SOFA scores. Significant odds for mortalities were seen when patients presented with tachycardia, Glasgow Coma Scale <10; major bleeding, low haematocrit, impaired coagulation profile; impaired renal and liver function; significant metabolic acidosis, high lactate levels; the need for renal replacement therapy (RRT), mechanical ventilation and vasopressor therapy; ≥ 3 organ dysfunctions. On multivariate analyses, increased SOFA scores (OR: 1.559, 95%CI: 1.144 –2.126; $p = 0.005$), INR (OR: 26.644, 95%CI: 2.904-244.484; $p = 0.004$) and the need for RRT (OR: 12.611; 95%CI: 1.830-86.891; $p = 0.010$) were shown as significant independent predictors for mortality. SOFA scores effectively discriminated mortality risk with 90.5% sensitivity and 95.5% specificity and cut off value of 9.5 with AUROC [95%CI] = 0.959 [0.918-1.0], $p < 0.0001$.

CONCLUSIONS

Mortalities were only seen in severe dengue infections and SOFA scores at ICU admission effectively discriminated the risks. Increased INR and the need for RRT were significant independent predictors for mortality.

EVALUATION OF BEHAVIORAL PAIN SCALE IN ADULT INTENSIVE CARE UNIT, HOSPITAL KUALA LUMPUR: A PROSPECTIVE OBSERVATIONAL STUDY

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Assessing pain in intubated, critically ill patients is often challenging. Underrating pain level may leads to inadequate pain treatment and this has been shown to prolong mechanical ventilation in the intensive care unit (ICU). Behavioural Pain Scale (BPS) is a pain assessment scoring system used for critically ill, intubated and mechanically ventilated adult patients. BPS entails assessment using three components (facial expression, upper limb movements and compliance with mechanical ventilation) to assess pain for ICU patients.

We therefore aimed to evaluate the use of BPS on critically ill patients admitted to the general ICU of Hospital Kuala Lumpur. This observational study was conducted on 65 patients who were randomised into two groups; the ‘painless’ group (Group A) who were assessed during change of intravenous cannula dressing and the ‘painful’ group (Group B) who were assessed during tracheal suctioning. Two ICU nurses were assigned to assess the patients independently twice a day using the BPS score during the allocated procedures. Physiological parameters and sedation score using revised Riker Sedation-Agitation Scale (SAS) were also recorded.

We recorded a total of 694 assessments. The patients’ demographic data and SAS score were comparable. There was no significant difference in the baseline total BPS score between both groups (Group A 3.89±1.03 vs Group B 4.12±1.38). Post-procedural total BPS score was found to be significantly increased in Group B compared to pre-procedural score (4.12±1.38 vs 7.19±1.53, $p<0.001$). The increase of BPS score were in accordance with significant increase of mean arterial pressure in Group B. For each procedure, the inter-rater reliability between the two assessors had a coefficient of 0.932.

In conclusion, the BPS was a useful tool in assessing pain levels in intubated and mechanically ventilated patients.

DENGUE DEATH WITH HAEMOPHAGOCYTIC SYNDROME: A CASE REPORT

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Haemophagocytic syndrome (HPS) is a potentially fatal hyperinflammatory condition that has been describe in various viral infection including dengue. Diagnosis of haemophagocytic syndrome is challenging and usually missed as clinical and laboratory findings are non-specific.

We reported a 32 year-old woman who presented with acute febrile illness for 5 days and was diagnosed with decompensated dengue shock syndrome. She initially improved with supportive therapy and was admitted to general ward. However, her condition deteriorated in ward, she was tachycardic, tachypnoiec, leukopenic and thrombopenic. She was positive for dengue IgM. She was admitted to Intensive Care Unit on day 5 of illness. In ICU, patient developed dropped in GCS to 6/15 and was intubated. CT brain image showed generalized cerebral oedema. She had deranged INR value and prolonged aPTT. Her condition deteriorated rapidly in ICU, her condition complicated with acute renal failure with metabolic acidosis required CVVH support. Her serum ferritin level peaked at 13,767 ng/ml. IV Glucocorticoid therapy was started. She succumbed to death on day 8 of illness.

It is described here a case of fatal dengue with clinical features suggestive of HPS. We are regret that BMAT was not done in this case due to limited resource and the suspicion of HPS was raised up later in this presentation. However, the marked elevated serum ferritin level was consistent with HPS.

We discuss the diagnosis and management of this complex case, and try to increase the awareness about dengue related HPS as one of the possible causes for severe manifestation of the disease, where early recognition and treatments might help in improve the outcomes of patient.

A PROSPECTIVE OBSERVATIONAL STUDY ON TARGETED CALORIES AND PROTEIN INTAKE IN THE CRITICALLY ILL PATIENTS OF GENERAL INTENSIVE CARE UNIT, HOSPITAL KUALA LUMPUR

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BACKGROUND

An adequate nutritional support is fundamental for critically ill patients. Early enteral feed had shown to reduce infection risks as well as improve patient's gut immunity. With targeted calories and sufficient protein intake, breakdown of lean body mass can be minimised and lower morbidity and mortality rate. Early assessment on both calorie and protein intake in critical care patients is important to avoid unnecessary early or late-onset complications.

METHODOLOGY

This prospective observational study was performed in the general intensive care unit (ICU) of Hospital Kuala Lumpur. The study aimed to assess the overall adequacy of calorie and protein intake in ventilated patients within 72 hours of admission. Causative factors that interrupted enteral feeds were also identified. We then assessed the possible association between those who achieved calorie and protein intake with their clinical outcomes.

RESULTS

A total of 283 patients were recruited into the study. In the study period, 229 (80.9%) patients were commenced on enteral feeding within 48 hours of admission. Intra-abdominal pathologies/surgeries and unstable haemodynamics were the reasons why the rest of the patients were not started on enteral feeding. A total of 167 patients had interruption of enteral feeds and they were caused by airway related causes, gastrointestinal intolerance, haemodynamic instability, ICU-related procedures and intra-abdominal pathology. A total of 125 (44.2%) patients achieved both targeted caloric and protein intake within 72 hours of ICU admission. However, this group of patients were comparable with those who did not achieve target in terms of ventilator-free day, ventilator associated pneumonia, duration of ICU and hospital stay, ICU and hospital mortality rate.

CONCLUSION

During the study period, 44.2% of patients achieved targeted calorie and protein intake and there were no differences in clinical outcomes.

HLH – AN UNDERRECOGNISED MANIFESTATION OF SEVERE DENGUE

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OBJECTIVE

Many clinicians are still not familiar with HLH as a potentially fatal complication of severe dengue infection. The objective of this study was to determine the incidence and outcome of HLH among patients admitted to Hospital Sungai Buloh's ICU with severe dengue infection. Our secondary objective was to identify additional criteria used to diagnose HLH in this population.

METHODS

This was a retrospective observational study from 1 January 2017 to 31 May 2017. All patients admitted to ICU with the diagnosis of dengue infection were included. In this population, we studied patients who were diagnosed with HLH based on either high clinical suspicion and/or using the 2004 HLH diagnostic criteria.

SUMMARY OF RESULTS

The incidence of HLH in the studied group was 18%. All had prolonged fever, transaminitis and hyperferritinaemia. Other significant findings in this group included hyonatremia and hyperlactatemia. Dexamethasone was the steroid of choice in most patients. Severe cases required organ support in the form of inotropes and vasopressors, ventilatory support, continuous renal replacement therapy, therapeutic plasma exchange and Molecular Adsorbing Recirculating System (MARS). Two deaths were reported. Both patients succumbed to overwhelming sepsis.

CONCLUSION

There was a surprisingly high incidence of HLH among patients admitted to our ICU with severe dengue infection. Persistent fever, cytopenias and hyperferritinemia are some of the conventional criteria used to diagnose HLH. In our group of HLH patients, we also noted a high incidence of transaminitis, hyponatremia and hyperlactatemia. These clinical presentations and laboratory findings should prompt the treating clinician to consider the diagnosis of HLH, as early recognition and treatment with steroids has a favourable outcome.

ULTRASOUND GUIDED PERCUTANEOUS TRACHEOSTOMY IN EMERGENCY AIRWAY MANAGEMENT

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We are presenting a case to highlight the possible role of ultrasound guided percutaneous tracheostomy in the setting of an emergency airway whereby there are obstacles in intubation and conventional cricothyroidotomy. This lady has underlying supraglottic laryngeal carcinoma who has a partial laryngectomy and tracheostomy done previously. She was decannulated s few months later and remained well. Later, she started to have respiratory symptoms and also hoarseness of voice which mandated further investigations. CT Scan revealed right laryngopharynx lesion obstructing the airway. She was planned for another tracheostomy the following week but unfortunately came in to the Emergency Department with acute upper airway obstruction. She was in respiratory distress and was unable to maintain good oxygen saturations. Multiple attempts to intubate the patient failed and the patient was planned for an emergency cricothyroidotomy as she was desaturating on Ambu-bagging. She started developing subcutaneous emphysema from the intubation attempts and manual bagging. Upon scanning the airway, we noted the mass lesion involving the thyroid and cricoid cartilage obstructing the view of the location of the membrane. The mass lesion was scanned for its extent and emergency percutaneous tracheostomy was done guided by the ultrasound in real time. Flexible bronchoscopy was used to check the location and to look for bleeding complications. Bilateral chest tubes were placed and she was admitted to the ICU. Her recovery was stormy as she developed Takotsubo Cardiomyopathy but was weaned off the ventilator after 1 day and sent back to the ORL ward at Day 2. She subsequently had a completion laryngectomy done and discharged home.

COAGULOPATHY? BLEEDING LUNGS? FEAR NOT... EXTRACORPOREAL MEMBRANE OXYGENATION TO THE RESCUE

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A young gentleman presented with symptoms of fever, cough and also shortness of breath. He was managed with oxygen therapy and was sent to the ward treating as a community acquired pneumonia covering for Leptospirosis. In the ward, he deteriorated and was in severe respiratory distress. He was brought into ICU for further care. Upon arrival, the patient was intubated for severe respiratory distress and failure. After intubation, frank blood was seen in the endotracheal tube and his oxygenation and ventilation proved to be very difficult. Lung protective strategy was in place, he was started on paralytic agents and subsequently nursed in a prone position due the difficulty in oxygenation and ventilation. All methods proved to be futile. He was only saturating at about 70% and already has 2 inotropes running to support the hemodynamics. A decision was made to cannulate him and to start in on extracorporeal membrane oxygenation therapy. Veno-venous ECMO was done. We were ventilating the lungs using low tidal volumes of about 3mls/kg and maintaining PEEP of about 15-18. Daily bronchoscopy was done to clear the blood clots and inject intratracheal diluted Adrenaline flushes with hopes to control the pulmonary hemorrhage. His recovery was stormy as he went into acute kidney injury and had to be hooked onto the CRRT machine. He started making some progress at Day 7 on ECMO. We were able to wean down further and subsequently put him back on conventional ventilator at Day 12 and extubated at Day 16. He was discharged from ICU back to the general ward where he improved further and was discharged home. This article shows the possible utility of ECMO even when there is bleeding and coagulopathy as there is always a fear of membrane clotting when there is inability to anticoagulate the membrane.

METAPNEUMOVIRUS INFECTION IN INFANCY – AN INTENSIVE CARE CHALLENGE

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Human metapneumovirus is a relatively novel respiratory virus which can affect all age groups. In young children, presentation can range from mild bronchiolitis to multiorgan failure leading to mortality, thus intensive care for an affected child can be challenging. We report a case of human metapneumovirus infection in early infancy in our paediatric intensive care unit which resulted in significant morbidity. A day 50 of life boy presented with a short history of rapid breathing preceded by few days of cough, coryza and reduced oral intake. On admission, the patient developed respiratory failure requiring mechanical ventilation and subsequently progressed to acute respiratory distress syndrome. He required high frequency oscillatory ventilation for six days with prolonged hypoxia. His condition deteriorated significantly during the acute period complicated with cardiogenic shock, encephalitis and nephritis. He was successfully extubated to DuoPAP after more than two weeks of ventilation, then weaned down to nasal CPAP and subsequently high flow nasal cannula. He was discharged home after a total of seven weeks oxygen support with long term complications including chronic lung disease, clinical gastro-oesophageal reflux disease, failure to thrive and developmental delay. High resolution CT thorax one month after discharge was consistent with post infectious bronchiolitis obliterans.

THREE YEARS REVIEW: EPIDEMIOLOGICAL PROFILE OF CRITICALLY ILL CHILDREN AT PEDIATRIC INTENSIVE CARE UNIT HASAN SADIKIN GENERAL HOSPITAL BANDUNG, WEST JAVA, INDONESIA

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OBJECTIVES

The care of critically ill children remains the most demanding and significant aspect in the field of pediatrics. The knowlwdge of epidemiological profile of critically ill children play a significant role in the planning of health policies that would be improve the outcome of critically ill children. The aim of the study is to obtain data on epidemiological profile of critically ill children who admitted to our Pediatric Intensive Care Unit during 2013-2016.

METHODS

The design of this study was descriptive that the data were retrospectively collected from the medical record between 2013 and 2016.

RESULTS

A total of 646 patients were analyzed during 3 years period. Infants constituted the majority (48,76%), males (54,33%) were marginally more than female (45,66%), and 513 (79,41%) were mechanically ventilated. A mean of length of stay in PICU was 8,63 days. Sepsis is the most common indication for the admission to PICU in our study (43,27%), and 163 (25,23%) were a surgery case. The mortality rate of our study population was 23,84%.

CONCLUSIONS

This study analyses the epidemiological profile of critically ill children admitted to PICU in Hasan Sadikin General Hospital. It can be used as a data based for developing new protocols is one of the efforts to improve the outcome of critically ill children.

KEYWORDS

Critically ill children, pediatric intensive care unit.

AN OLD TOOL WITH A NEW PERSPECTIVE

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OBJECTIVE

Ultrasound thorax is a simple non-invasive bedside examination which recently has gained popularity for its diagnostic value in an intensive setting and assisting in immediate therapeutic decision. This is a single case report to show how an echocardiogram and ultrasound thorax could guide in the management of worsening pulmonary hypertension contributed by lung pathology.

DESIGN

Case report

SUMMARY

This is a 4-month-old baby boy with Down syndrome, patent ductus artriosus (PDA), atrioseptal defect, left pneumatocoele with mild pulmonary hypertension on sildenafil who was discharged well from nursery care at 3 months of age with home oxygen therapy. He was readmitted a month later with respiratory distress requiring ventilatory support. His chest x-ray showed right-sided haziness with cardiomegaly. Echocardiogram showed the right heart was dilated with features of worsening pulmonary hypertension and significant right to left shunting at PDA. His ventilator requirement was increased gradually due to poor oxygenation. Bedside ultrasound thorax was performed showing lung congestion with significant consolidation at both posterior lung fields. Child was put in prone position for posterior lung recruitment. His oxygenation improved and we were able to cut down ventilator setting without the use of inhaled nitrate oxide. Repeated echocardiogram on the following day showed resolved pulmonary hypertension with balanced ventricles, left to right shunt at PDA. The posterior lung field was more aerated.

CONCLUSION

Ultrasound thorax may be used as a modality to assess the lung fields in assisting lung recruitment strategies and monitoring the progress of illness.

CONTINUOUS RENAL REPLACEMENT THERAPY FOR HYPERAMMONEMIA CAUSED BY INBORN ERRORS OF METABOLISM IN NICU SGH (MAY 2016 – MAY 2017)

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INTRODUCTION

Hyperammonemia is a life-threatening event that can cause irreversible brain damage to the developing brain. We used CVVH to treat hyperammonemia in addition to antiammonia cocktail.

OBJECTIVE

This study reviews the treatment dose, flow rate, duration of treatment, serum ammonia levels within 24 hrs of treatment and outcome of patients treated.

METHOD

All patients had a right IJV catheter inserted for vascular access. All patients were started on anti-ammonia cocktail and put on inotropic support accordingly before dialysis. The circuit was primed with heparin saline and Prismaflex machine was used with HF 20 filter. Prismasol solution was use for the convection and dialysate fluid. Heparin was used as anticoagulant of choice aiming ACT between 160 to 200 seconds. Serum Ammonia levels were determined every 6-12hrly to monitor the progress and CRRT was discontinued once the ammonia level decreases < 200 µg/dL and clinical condition improved.

RESULTS

We had a total of 4 patients with hyperammonemia over the past year, 3 of which were managed with CRRT and antiammonia cocktail. Of the 3 cases 2 patients survived (mortality rate 33.3%).The average CRRT time was 50.6 hrs. Most commonly occurring complication that occurred was initial hypotension which quickly resolved with increase in inotropic support. Our method of CRRT showed significant decrease in serum ammonia levels by 89.1 % within 24 hrs. CVVH was discontinued with combined assessment of clinical condition of the patient and serum ammonia levels. We were using higher treatment dose of more than 100 to 170 ml/Kg/Hour for all these patient

CONCLUSION

CRRT in newborns seems to be an effective modality to quickly eliminate plasma ammonia and the immediate and long-term survival is highly dependent on aggressive management.

CHYLOUS ASCITES, A RARE PRESENTATION OF CONGESTIVE CARDIAC FAILURE

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INTRODUCTION

Chylous ascites is a well-documented sequelae of traumatic rupture of thoracic duct and mechanical obstruction of the lymphatic system due to neoplastic, inflammatory, or congenital anomalies. Less commonly, chylous ascites results from altered hemodynamics and lymphatic flow, as seen in constrictive pericarditis and heart failure.

CASE REPORT

A six years old girl with underlying transposition of great arteries post repair complicated with complete heart block on pacemaker presented to district hospital with cough for 2 weeks, rapid breathing and abdominal distension for 4 days. She was subsequently referred to us for septic shock with acute renal failure. Clinical examination revealed an intubated child with signs of congestive heart failure. ECHO revealed dilated left atrium and left ventricle with severe mitral regurgitation and poor contractility, where there is worsened ejection fraction from baseline 60% to 44%. Ultrasound abdomen showed bilateral pleural effusion and ascites. Her renal failure worsened and required peritoneal dialysis. Incidental finding during tenckhoff catheter insertion was turbid intra-peritoneal fluid. Both Peritoneal fluid protein and triglyceride was high; 12.9g/L and 3.84mmol/L respectively; peritoneal fluid culture was negative. Thus a diagnosis of chyloperitoneum was made and MCT oil was added to her milk intake. The child succumbed to her disease finally due to decompensated congestive heart failure.

CONCLUSION

Chylous ascites is a relatively uncommon disorder, however it is important to consider in a child with cardiac disease. Diagnosis of chylous ascites can be readily made with simple tests. Finally, treating the underlying cause is of paramount importance in the management of these patients.

CRRT IN CRITICALLY ILL CHILDREN: EXPERIENCE FROM PICU, UNIVERSITY MALAYA

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INTRODUCTION

Continuous renal replacement therapy (CRRT) is an important supportive therapy for critically ill children with acute renal failure or for removal of toxins. We describe our single centre's experience in managing critically ill patients with CRRT.

OBJECTIVE

The aim of this study is to examine the indications and complications for CRRT.

METHODOLOGY

We conducted a retrospective review of patients who underwent CRRT in PICU of University Malaya Medical Centre from January 2011 to May 2017.

RESULTS

Median duration of CRRT of 93 hours. Median patient age was 6 years old. The commonest underlying diagnosis was sepsis. The most common indication for initiation of CRRT was uraemia. The most frequent patient complication was hypotension (21%) on initiation of CRRT. Blocked circuit was the commonest equipment complication.

CONCLUSION

CRRT is useful in acute renal failure and removal of toxin but technically is challenging in managing patient and equipment complication arising from CRRT.

AUSTRIAN SYNDROME DUE TO PNEUMOCOCCAL INFECTION IN AN INFANT

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INTRODUCTION

Austrian syndrome is a rare case of eponymous syndrome, consisting of a triad of pneumonia, meningitis and endocarditis caused by Streptococcus pneumoniae.

CASE REPORT

A 9 months old girl, presented with fever, cough and rhinorrhea for 5 days and lethargy for a day. She contracted varicella zoster infection one month prior to her current illness. She presented to us on day 5 of illness with right sided focal seizures. She was intubated for cerebral protection in view of deterioration of consciousness. MRI Brain showed meningeal enhancement and chest X-ray showed right upper lobe consolidation. She was treated as meningoencephalitis with IV Ceftriaxone, Acyclovir and Oseltamivir. Blood culture grew penicillin susceptible *Streptococcus pneumoniae*. ECHO revealed atrial septal defect, mitral regurgitation and vegetation over aortic and mitral valves. The left ventricular ejection fraction deteriorated from 64% to 49 % over 1 day period. Antibiotics was then changed to IV C-Penicillin and IV Gentamicin. However, she progressed to multi-organ failure and succumbed after 2 days despite adequate antimicrobial therapy and maximum support. Post mortem CSF culture grew *Streptococcus pneumoniae*.

DISCUSSION

Although pneumococcal infections including respiratory infections and meningitis are common in children, endocarditis caused by *Streptococcus pneumoniae* is rare. Literature review reported 3 – 7% of all endocarditis were caused by pneumococus and associated with high mortality rate. Most reported cases had aortic valve involvement but our patient had both mitral and aortic valves involvement suggestive of more severe illness. We recommend screening for endocarditis in children with severe invasive pneumococcal infection to enable early treatment and improve prognosis.

PAEDIATRIC ADMISSIONS TO THE GENERAL INTENSIVE CARE UNIT OF HOSPITAL PUTRAJAYA BETWEEN JANUARY 2016 AND JUNE 2017

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INTRODUCTION

The majority of our paediatric patients who are critically ill are admitted to our general intensive care unit (ICU) in Hospital Putrajaya instead of a paediatric intensive care unit (PICU) due to a lack of facilities.

OBJECTIVES

The primary objective of this study to determine the characteristics and outcomes of paediatric patients to ICU, Hospital Putrajaya and to assess factors associated with an increased risk of mortality. The secondary objective of this study is to determine the role of Paediatric Index of Mortality 2 (PIM2) mortality risk prediction score in predicting mortality in our study population.

METHODS

A retrospective observational study from 1 January 2016 to 30 June 2017 was conducted. All paediatric patients admitted to ICU, Hospital Putrajaya were included.

RESULTS

A total of 79 patients were included. The ratio of female to male patients was similar (51% to 49%). Half of the admissions consisted of infants less than 12 months old with a mean age group of 2.5 years (age ranging 1 month to 14.6 years). Patients' length of stay ranged from 1 to 17 days with a mean of 5.25 days. The main cause for admission was due to respiratory disease. Overall the mortality rate was 13.9%.

CONCLUSION

The overall characteristics of our patients were comparable to those in other studies involving admissions to paediatric ICUs. Our mortality rate is lower compared to published local data (42% in UMMC in 1996, 25% in HWKKS Likas in 2010); however latest figures in these centres are unpublished and are expected to have reduced over the years. Mortality PIM2 scoring is a useful predictor of mortality risk in our patients.

NEONATAL TETANUS: CASE STUDIES OF A SHOULD BE FORGOTTEN DISEASE THAT STILL EMERGE IN SANDAKAN, SABAH

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Hospital Duchess of Kent, Sandakan, Sabah, Malaysia

INTRODUCTION

Neonatal tetanus is a severe, life-threatening disease caused by the bacterium, Clostridium tetani, a bacteria that found high concentration in soil. Despite the universal availability of vaccination since 1924, the World Health Organization (WHO) estimated 72,600 deaths in children under the age of 5 due to tetanus in 2011. A total of 6 cases were reported in Malaysia in 2016. We report a series of 5 cases of neonatal tetanus in Sandakan from 1st Jan 2016 to 31st May 2017.

OBJECTIVE

To explore the demographics, clinical presentation, treatment and outcome of babies diagnosed with neonatal tetanus in Hospital Duchess of Kent (HDOK), Sandakan.

METHODS

The case notes of all neonates with tetanus during the study period were reviewed.

RESULTS

A total of 5 babies were diagnosed to have neonatal tetanus. All mothers did not receive antenatal care and had undetermined vaccination statuses. All babies were home-delivered and had their umbilical cords cut via unsterile methods. The mean age of symptom onset was 7.6 days while the mean age of hospitalisation was 10 days. The initial symptom reported was feeding difficulty followed by body stiffness and spasms. 3 babies had trismus and 1 was in opisthotonos position. All 5 babies were intubated at the emergency department (ED) due to uncontrolled spasms. The mean duration of ventilation was 26 days. All babies received standard supportive treatment. The average length of hospitalisation was 32.4 days. The mortality rate was zero.

CONCLUSION

With modern medical practices, mortality from tetanus has reduced drastically. However, the associated morbidity and high treatment costs highlights the importance of prevention via vaccination and hygienic birth practices.

ENTERAL NUTRITION IN SIX MALAYSIAN INTENSIVE CARE UNITS: A POINT PREVALENCE STUDY OF PRESCRIPTION PRACTICES

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OBJECTIVE

The purpose of this study is to describe prescription practices in six Intensive Care Units (ICUs) in Malaysia.

METHODOLOGY

A multicenter observational one-day point prevalence study involving six ICUs was carried out in October 2016. Data attained were patient's demographics, diagnosis, days of hospital admission, simplified acute physiology score (SAPS II) and sequential organ failure assessment score (SOFA) on admission and types of ventilation. Enteral nutrition (EN) data included number of patient on enteral feeds, methods of enteral feeds, days of feeding and formula of enteral feeds. Indication for non-standard feeds were also recorded. Data were collected in Excel Format and analysed using IBM SPSS Statistics.

RESULTS

A total of 109 adult patients were included. Mean age was 50.7years (SD ± 17.4) with 65% being male patients. Mean weight was 68.2kg (SD ± 17.8). Median hospital stay was 7 days. About 78% of patients were mechanically ventilated, while 4.5% were on non-invasive ventilation. Mean SAPS II was 43.2 (SD ± 20) and mean SOFA score was 7.7 (SD ± 4.0) in the first 24 hours. 78 out of 109 patients (71.5%) received EN: 59% of these were delivered via intermittent feeds, 31% via bolus feeds and 10% via continuous feeds. Median feeding days were 5 days. 53 out 78 patients (68%) were given standard formulation feeds, while 32% were prescribed energy-dense feeds. Mean protein prescribed was 1.2g/kg/day (SD ± 0.2). 96% (24/25) of patients were on energy-dense feeds for fluid restriction. Ratio of EN:PN is 30:1 with 2 out of 2 patients on PN due to bowel rest post intraabdominal surgery and 1 patient were given semi-elemental feeding post surgery.

CONCLUSION

This study demonstrates that EN is 30 times more common than PN among critically ill patients with 68% prescription of standard feeds as compared to energy-dense feeds. Main indication for energy-dense feeding is fluid restriction.

REASONS FOR ENTERAL NUTRITION FEEDING INTERRUPTION IN A TERTIARY INTENSIVE CARE UNIT IN MALAYSIA

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OBJECTIVE

This study aims to investigate the prevalence and duration of reasons contributing to enteral nutrition (EN) feeding interruption (FI) in a tertiary intensive care unit (ICU).

METHODOLOGY

The prevalence and duration of each reason for EN FI identified through extensive literature review were prospectively recorded among patients who age ≥18 years old, mechanically ventilated within 48 hours of ICU admission, and stayed in the ICU for ≥72 hours. Data on energy and protein adequacy and reasons and duration of FI were collected daily for a maximum of 12 evaluable nutrition days in the ICU, before progression to permanent and exclusive oral intake. Microsoft Office Excel was used for data analysis.

RESULTS

A total of 148 eligible patients were included. Each of the patients was followed for a median of 10 (7-12) days. About 332 episodes of EN FI were recorded with a total duration of 4190 hours, accounting for about 12.8% (174.6 days) of 1367 evaluable nutrition days. Each patient experienced EN FI for a median of 3 (2-4) days and 24.5 (13.3-38.8) hours of the entire ICU stay. Energy and protein deficit due to FI was -1780.23 (-3159.28 to -974.06) kcal and -100.58 (-165.94 to -58.46) g, respectively. Based on total duration of EN FI, the categories of reasons in descending order are: procedural-related reasons (2034 hours or 49.1% of total EN FI duration), potentially avoidable reasons (977 hours or 23.6%), illness-related intolerance (722 hours or 17.4%), unknown reasons (246 hours or 5.9%) and gastrointestinal-related intolerance (161 hours or 3.9%).

CONCLUSION

EN FI occurred for about 12.8% of evaluable nutrition days in the ICU, contributed to about -1780 kcal and -100.6 g of energy and protein deficit, respectively. Procedural-related reasons were the most prevalent and contributed to the longest hour of FI.

DESMOPRESSIN (DDAVP) TREATMENT IN ADULT SEVERE DENGUE HEMORRHAGIC FEVER: CASE SERIES

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STATEMENT ON THE OBJECTIVES OF THE STUDY

Severe dengue is associated with hemorrhage, plasma leakage and/or organ impairment. Other than conventional supportive therapy, there is no specific treatment for severe dengue. Therefore, our objective is to look into alternative/additional treatment in adult severe dengue presented with refractory bleeding and/or plasma leakage by using DDAVP. Here, we reported 2 cases of successful use of DDAVP in the adult patients with severe DHF/DSS.

SUMMARY OF THE RESULTS OBTAINED

A 32 year old lady diagnosed with severe dengue with organ impairment. She accidentally had left forearm hematoma with compartment syndrome from the arterial puncture. She developed hemorrhagic shock post left hand fasciotomy which required massive blood transfusion to secure hemostasis during critical phase of illness. Eventually the bleeding successfully stopped after 3 doses of DDAVP and later we managed to wean off vasopressor and extubate her well.

Second case is a 19 year old girl presented with decompensated dengue shock complicated with severe oral and gastrointestinal bleeding. She developed ARDS from fluid overload. Echo finding showed severe LV dysfunction due to dengue cardiomyopathy/myocarditis. Hence, fluid resuscitation is very challenging during critical phase. OGDS just showed pan-gastritis. However, GI bleeding was gradually ceased and we were able to wean off vasopressor after administration of 2 doses of DDAVP.

STATEMENT ON THE CONCLUSIONS REACHED.

We used intravenous DDAVP dose of 0.3 mcg/kg infused over 30 minutes. Each case, we gave at different time interval based on clinical judgement. DDAVP could be used as an alternative/additional treatment in severe dengue with refractory bleeding and/or plasma leakage. It is considered safe with manageable side effects. However, we recommend that a larger randomized controlled trial to be conducted in the future to prove the efficacy and safety of DDAVP in severe dengue.

CLINICAL AUDIT ON COMPLIANCE TO HAND HYGIENE MEASURES IN INTENSIVE CARE UNIT OF TERTIARY HOSPITAL

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INTRODUCTION

'Prevention is Better Than Cure'. Hand hygiene is the most important method to prevent the spread of infection in the hospital setting. Poor hand hygiene compliance can lead to life threatening nosocomial infections. It also causes prolonged hospital stay, increase financial and resource costs, increase morbidity and mortality and loss of confidence to health-care workers (HCWs) by public. The national hand hygiene compliance standard set by Ministry of Health (MOH) is 75%.

OBJECTIVES

1. To audit hand hygiene compliance among HCWs in a mixed Intensive Care Unit (ICU) of a tertiary level hospital.
2. Implement remedial measures for improvement of compliance to hand hygiene.

METHOD

This was a prospective observational study conducted within a one month period. Inclusion criteria were HCWs involved in patient handling primarily doctors, nurses, physiotherapists and radiographers. Hand washing opportunities were assessed according to 5 moments of hand hygiene by using elected trained observers.

RESULTS

During the first clinical audit a total of 45 HCWs were audited on their performance of hand hygiene and results showed only 37% were compliance to the 5 moments of hand hygiene. Remedial measures were i.e; training for staff members, verbal reminders, posters and banners. Re-audit was conducted one month later with a total of 51 HCWs observed, and results showed significant improvement in compliance of hand hygiene.

CONCLUSION

The audit showed marked improvement in hand hygiene compliance following implementation of remedial measures for improvement of compliance to hand hygiene.