

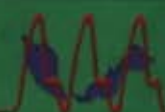
souvenir programme &
abstract book

ANNUAL SCIENTIFIC MEETING
ON INTENSIVE CARE

ASMIC 2011

15th – 17th JULY 2011

*Shangri-La Hotel
Kuala Lumpur
Malaysia*



*Malaysian Society
of Intensive Care*



Asia Pacific Association of
Critical Care Medicine



Ministry of Health Malaysia

Contents

Message from the President, Malaysian Society of Intensive Care	2
Message from the Organising Chairperson, ASMIC 2011	3
Foreword from the President of Asian Pacific Association of Critical Care Medicine	4
ASMIC 2011 Organising Committee / Invited Faculty	5
Programme Summary	6
Daily Programme	7 – 12
Floor Plan & Trade Exhibition	13 – 14
Thank You	15
Abstracts	16 – 49
Plenaries & Symposia	16 – 34
Oral Presentations	35 – 39
Poster Presentation	40 – 49

Message from the President, Malaysian Society of Intensive Care



It gives me great pleasure to welcome all of you to ASMIC 2011. This is the second ASMIC in the series.

Last year, we had a very successful inaugural ASMIC. This year, the response is equally overwhelming. I take this opportunity to thank the Organising Committee for their great effort in putting up a scientific programme which is current and rich in its contents.

The field of intensive care has advanced at such a tremendous pace that keeping up to date becomes a challenge for all clinicians. Attending a scientific meeting like this is a good way to update our knowledge in addition to keeping in touch with friends and colleagues. The exhibits from the industry also keep us informed of new equipment, technology and medications.

The Malaysian Society of Intensive Care was formed two years ago. It is a young society and thrives to be the voice for intensive care in the country. Hence, I would like to urge all intensivists to join the Society so that we can have a louder voice and together, help to promote the art and science of intensive care in our beloved country.

I hope you will have a fruitful and enjoyable meeting.

Tancc
Dr Tan Cheng Cheng

Message from the Organising Chairperson, ASMIC 2011



On behalf of the Organising Committee, I would like to extend my warmest welcome to you to the second Annual Scientific Meeting on Intensive Care (ASMIC 2011), organised by the Malaysian Society of Intensive Care.

There is a constant need not only to keep abreast of new scientific findings but also to identify effective clinical strategies for the management of the critically ill patients. It is only through the exchange of information that one can hope to keep up with the rapidly changing world around us. With this in mind, we have put forward a comprehensive scientific programme that will be educationally stimulating and informative.

The plenary and symposia lectures will continue to be the heart of this meeting. You will be able to select the topics of your choice from one of the three simultaneously occurring sessions. These sessions will offer subjects ranging from traditional to newer topics in intensive care. In addition to the main conference, there will be a pre-conference workshop on Non-Conventional Ventilation. We will also benefit from the many booth exhibitions displaying a wide array of intensive care-related medical equipment and devices.

ASMIC 2011 offers the unparalleled opportunity to learn, exchange information and network. We wish you an inspiring and enjoyable meeting.

Ling
Dr Tai Li Ling

*Foreword from the President of
Asian Pacific Association of Critical Care Medicine*



**"Intensive Care Medicine in the Asian Pacific Region
– Current and Future"**

On a population basis, major advances in the health status of communities are initially achieved by mass programs of improved sanitation and vaccination. Once risk factors for common community health afflictions are identified, such as in the case of smoking and lung cancer or hyperlipidemia and coronary artery disease, then major advances can be made by redressing these factors. Intensive Care Medicine by its nature is more focused on a particular individual with health problems. Therefore, in the early stages of a country's economic development it does not warrant as much attention as community based health programs. However once economic conditions in a developing country improve then the need for Intensive Care Medicine becomes increasingly important. The cultural richness and diversity found in the Asian Pacific Region, home to nearly half the world's population, is matched by a variety of economic and social development. As such the development of Intensive Care Medicine is also markedly different throughout the region. Although the tools and equipment available to the Intensive Care physicians vary greatly throughout the region, the underlying philosophy and tenants of practice are very similar, whether it is occurring in Chiba, Mandalay, Melbourne or Guangzhou.

Although there is good data on population, healthcare expenditure, and hospital numbers throughout the region, there is a less precision about the overall number of hospital beds let alone dedicated intensive care beds. The professional development of Intensive Care Medicine varies throughout the region. In some countries Intensive Care Medicine is a separate medical specialty in its own right, in others it is aligned with another medical specialty such as pulmonology or anaesthetics, whilst in other countries it is not considered even a subspecialty of another medical craft group. Therefore it becomes difficult to compare and contrast the practice of Intensive Care Medicine in different countries. However there can be little doubt that the enormous advances in life support technology and pharmaceuticals, matched by the expectations of the population, brings about a focus on the dedicated training of the Intensive Care Specialist. Some countries including Malaysia, Korea, China, Australia, New Zealand and Japan now have dedicated intensive care training schemes. This list is not exclusive. The question that practicing Intensivists in the region should ask is 'how do we enhance the practice of specialty throughout the region', in an attempt to bring optimal patient care in any, and every, Intensive Care Unit.

Developing Intensive Care Medicine as a recognised specialty in its own right comes about through the determination of dedicated individuals in any particular country. Collegial and professional support from colleagues elsewhere in the region can be very helpful and the Asian Pacific Association of Critical Care Medicine (APACCM) stands to play a major role. Beginning as a fledgling organisation thirty years ago, it now is an organisation which meets on a regular basis and holds biannual scientific meetings. It has representatives from Indonesia, Philippines, New Zealand, Japan, Taiwan, China, Korea, Malaysia, Singapore, Thailand, India, China and Australia. Although the organisation cannot match the sophistication of its counterparts in Europe and North America, it has the potential to become a proud and productive one which will enhance the development of Intensive Care Medicine throughout the Asian Pacific Region.

Professor Anthony McLean

Organising Committee

ADVISOR	Ng Siew Hian
CHAIRPERSON	Tai Li Ling
COMMITTEE MEMBERS	V Kathiresan
	Noor Airini Ibrahim
	Shanti Rudra Deva
	Suresh Venugobal
	Tang Swee Fong

Invited Faculty

AUSTRALIA	INDIA
Rinaldo Bellomo	Babu Abraham
Anthony McLean	J V Divatia
Yahya Shehabi	ITALY
CHINA	Luciano Gattinoni
Du Bin	SOUTH AFRICA
	Andrew Argent
MALAYSIA	Noor Airini Ibrahim
Ahmad Shaituf Othman	Nor'azim Mohd Yunus
Anita Alias	Norazlin Abdul Manap
Anselm Suresh Rao	Pathmawathi Subramanian
Claudia Cheng	Ravindran Visvanathan
Choy Kee Leong	Shanti Rudra Deva
Dharmendra Ganesan	Shanthi Ratnam
Adrian Goh	Sri Banun M Shahri
Ho Siew Eng	Suresh Venugobal
Jameela Sathar	Syed Razaidi Wafa
Khoo Tien Meng	Tai Li Ling
Laila Kamaliah Kamalul Bahrin	Tan Cheng Cheng
Lau Chee Lan	Tan Pei Chien
Khatijah Lim Abdullah	Tang Swee Fong
Lim Chew Har	Teh Keng Hwang
Lim Wee Leong	Toh Khay Wee
Masnizah Mahmood	Jenny Tong May Geok
Mohd Basri Mat Nor	

Programme Summary

TIME	DATE	15 th July 2011, Friday	16 th July 2011, Saturday	17 th July 2011, Sunday
0800 - 0830		REGISTRATION	LET'S ASK THE EXPERT	PLENARY 4
0830 - 0900		PLENARY 1	PLENARY 2	PLENARY 5
0900 - 0930		OPENING CEREMONY	PLENARY 3	TEA / TRADE EXHIBITION
0930 - 1000		TEA / TRADE EXHIBITION	TEA / TRADE EXHIBITION	MISCELLANEOUS I
1000 - 1030				MISCELLANEOUS II
1030 - 1100				NEUROLOGY
1100 - 1130				
1130 - 1200				
1200 - 1230				
1230 - 1300				LUNCH
1300 - 1330		Lunch Satellite Symposium <i>Heapina Malaysia</i>	Lunch Satellite Symposium <i>Freemius Kabi, Malaysia</i>	
1330 - 1400				
1400 - 1430				
1430 - 1500				
1500 - 1530				
1530 - 1600				
1600 - 1630				
1630 - 1700		TEA	TEA	
1700 - 1730		Free Papers	AGM of the Malaysian Society of Intensive Care	Tea Satellite Symposium <i>Janssen-Cilag Malaysia</i>
1730 - 1800				

Pre-Conference Workshop - 14th July 2011, Thursday

Non-Conventional Ventilation

Are "non-conventional" ventilatory modes really non-conventional? When should these modes be initiated or should they be part of the standard ventilatory approach? What benefits do these non-conventional modes offer? Is there evidence to support the advantages of these modes of ventilation compared to the more conventional modes?

This one-day workshop on non-conventional ventilatory support will focus on ventilatory strategies beyond standard conventional ventilation. The workshop is composed of 2 sections: a morning lecture series dealing with the basis and principles of the different modes, followed by hands-on stations in the afternoon. At the conclusion of this workshop, the participant will have a better understanding of both the art and science of these modes, to enable him to appropriately tailor ventilatory support to meet the individual needs of patients at the bedside.

0800 - 0845	REGISTRATION	
0845 - 0850	INTRODUCTION TO THE WORKSHOP	4 SELANGOR ROOM
	LECTURES	
0850 - 0920	Adaptive support ventilation (ASV) - <i>Hamilton Star Medic Graeme D A' Court</i>	
0920 - 0950	Bilevel and Airway Pressure Release Ventilation (APRV) - <i>Draeger Mohd Basri Mat Nor</i>	
0950 - 1020	Neurally-Adjusted Ventilatory Assist (NAVA) - <i>Servo-1 Maquet Yan Weber</i>	
1020 - 1035	TEA BREAK	4 SARAWAK ROOM
1035 - 1105	Proportional Assist Ventilation (PAV) Plus - <i>Puritan Bennet Gerald Chua</i>	
1105 - 1135	High Frequency Oscillatory Ventilation (HFOV) - <i>Schmidt Biomedtech Dale Chriscinske</i>	4 SARAWAK ROOM
	HANDS-ON STATION (participants to rotate)	
1135 - 1220	Station 1	
1220 - 1305	Station 2	
1305 - 1415	LUNCH	
1415 - 1500	Station 3	
1500 - 1545	Station 4	
1545 - 1630	Station 5	
1630 - 1700	Handing out of Certificates and Closing	

15th July 2011, Friday

0800 - 0845	REGISTRATION	4 SABAH ROOM
0845 - 0930	PLENARY 1 Chairperson: Nor'Azim Mohd Yunus Sepsis associated acute kidney injury (AKI) [page 16] Rinaldo Bellomo	
0930 - 1015	OPENING CEREMONY	
1015 - 1100	TEA / TRADE EXHIBITION	4 SABAH ROOM
1100 - 1300	SYMPOSIUM 1 RESPIRATORY 1 Chairpersons: Zainida Zainuddin / Nahla Irtiza Ismail Monitoring the lung during mechanical ventilation [page 16] Mohd Basri Mat Nor 1130 - 1200 Peri-operative management of patients with severe respiratory disability [page 17] Yahya Shihabi 1200 - 1230 Practical aspects of mechanical ventilation in acute severe asthma Babu Abraham 1230 - 1300 Ventilatory management in patients with neuromuscular disease [page 18] Ahmad Shaltut عثمان	4 SABAH ROOM
1100 - 1300	SYMPOSIUM 2 PAEDIATRICS 1 Chairperson: Pon Koh Min 1100 - 1130 Status epilepticus in the paediatric ICU [page 18] Teng Swee Fung 1130 - 1200 Management of a child with diabetic ketoacidosis [page 19] Teh Jeng Hoang 1200 - 1230 Paediatric sepsis campaign: Actual and potential impact Andrew Argent	4 SARAWAK ROOM
1100 - 1300	SYMPOSIUM 3 RENAL Chairpersons: Nik Azman Nik Adib / Foong Kit Weng 1100 - 1130 The importance of fluid balance in acute kidney injury (AKI) [page 19] Rinaldo Bellomo 1130 - 1200 Acute kidney injury: Can staging guide therapy? Ravindran Venkatharan 1200 - 1230 CRRT vs IHD - Impact on renal recovery [page 20] Rinaldo Bellomo 1230 - 1300 Nutritional therapy in the patient with acute kidney injury Noor Azzita Ibrahim	4 JOHOR ROOM
1300 - 1430	LUNCH SATELLITE SYMPOSIUM (Hospital Malaysia) Chairperson: Gracie Ong Siok Yan Do we need daily interruption in modern sedation practice? [page 20] Yahya Shihabi	4 SABAH ROOM

15th July 2011, Friday

1430 - 1630	SYMPOSIUM 4 CARDIOVASCULAR Chairperson: Wan Nasrudin Wan Ismail 1430 - 1500 Cardiac output measurement: When and how? Claudia Cheng 1500 - 1530 Acute heart failure is an inflammatory disorder Anthony McLean 1530 - 1600 Management of heart failure in pregnancy Shanthi Ratnam 1600 - 1630 Perioperative haemodynamic monitoring in patients with heart failure Suresh Venugopal	4 SABAH ROOM
1430 - 1630	SYMPOSIUM 5 NURSING 1 Chairperson: Choy Kee Leong 1430 - 1500 The compliance of Pain Care Bundle in an adult critical care setting in United Kingdom [page 21] Pathmawathi Subramanian 1500 - 1530 Patients' recollections of their experiences in the intensive care unit of a tertiary hospital [page 22] Ho Siew Eng 1530 - 1600 Nurses experience working in neonatal ICU [page 23] Khatijah Lim Abdullah 1600 - 1630 Intensive care nurses' knowledge in prevention of ventilator-associated pneumonia [page 23] Norazlin Abdul Manap	4 SARAWAK ROOM
1430 - 1630	SYMPOSIUM 6 MISCELLANEOUS 1 Chairperson: Lee See Pheng 1430 - 1500 Role of routine surveillance cultures in ICU Du Bin 1500 - 1530 Radiology in the intensive care unit Babu Abraham 1530 - 1600 Bronchoscopy in the intensive care unit [page 24] Toh Khay Wee 1600 - 1630 Communication in the ventilated patient Laila Kamaliah Kamalul Bahrin	4 JOHOR ROOM
1630 - 1700	TEA	4 JOHOR ROOM
1700 - 1800	FREE PAPERS [page 35 - 39]	4 JOHOR ROOM
1700 - 1800	TEA SATELLITE SYMPOSIUM (Pfizer Malaysia) Chairperson: Jenny Tong May Geok Invasive fungal infections Vijaya Sanghar Jagannathan	4 SABAH ROOM

16th July 2011, Saturday

0800 - 0900	LET'S ASK THE EXPERT Chairperson: Mahazir Kassim How I titrate PEEP in a ventilated patient? <i>Luciano Gattinoni</i>	◀ SARAWAK ROOM
0900 - 0945	PLENARY 2 Chairperson: Louisa Chan Genes and severe sepsis <i>Anthony McLean</i>	◀ SABAH ROOM
0945 - 1030	PLENARY 3 Chairperson: Louisa Chan Intensive care and mass casualty disaster management <i>Du Bin</i>	◀ SABAH ROOM
1030 - 1100	TEA / TRADE EXHIBITION	
1100 - 1300	SYMPOSIUM 7 SEPSIS Chairpersons: Wan Nasrudin Wan Ismail / Lee See Pheng Sepsis markets: In search of the Holy Grail <i>Du Bin</i>	◀ SABAH ROOM
1100 - 1130	Fluid balance in sepsis [page 25] <i>Nur'azim Mahid Yusof</i>	
1130 - 1200	Echocardiography in sepsis <i>Anthony McLean</i>	
1200 - 1230	Sepsis and the liver <i>Shanthi Ratnam</i>	
1100 - 1300	SYMPOSIUM 8 PAEDIATRICS II Chairperson: Anis Suraya Ghani Sensory systems in ICU <i>Adrian Goh</i>	◀ SARAWAK ROOM
1130 - 1200	Hypothermia in hypoxic-ischaemic encephalopathy <i>Maznah Mahmood</i>	
1200 - 1230	How do I optimize ventilation in infants and children with sepsis? <i>Andres Argon</i>	
1100 - 1300	SYMPOSIUM 9 ORGANISATION Chairperson: Mohd Ridhwan Mohd Noor Improving admission to and discharge from ICU <i>J V Divatia</i>	◀ JOHOR ROOM
1000 - 1130	Interfacing the ICU with the family <i>Jenny Tong May Geok</i>	
1200 - 1230	The ideal ward round [page 26] <i>Tan Cheng Cheng</i>	
1230 - 1300	Sedation practice in intensive care evaluation - SPICE and the way forward [page 27] <i>Yahya Shihabi / Anita Alias</i>	

16th July 2011, Saturday

1300 - 1430	LUNCH SATELLITE SYMPOSIUM (<i>Fresenius Kabi Malaysia</i>) Chairperson: Jenny Tong May Geok TPN including a balanced fish oil-containing lipid emulsion to improve your patients' outcome <i>Helmut Grimm</i>	◀ SABAH ROOM
1430 - 1630	SYMPOSIUM 10 RESPIRATORY II Chairperson: Ismail Tan Failure to wean from mechanical ventilation [page 27] <i>Lim Chew Har</i>	◀ SABAH ROOM
1430 - 1500	Automated withdrawal of ventilatory support <i>Syed Rozaidi Wafa</i>	
1500 - 1530	Stress and strain in ALI/ARDS patients <i>Luciano Gattinoni</i>	
1530 - 1600	Volume replacement and acid-base equilibrium <i>Luciano Gattinoni</i>	
1600 - 1630		
1430 - 1630	SYMPOSIUM 11 NURSING II Chairperson: Pathmawathi Subramanian Information needs of family members of critically ill patients in intensive care unit of a tertiary hospital [page 28] <i>Ho Siew Eng</i>	◀ SARAWAK ROOM
1430 - 1500	Knowledge and practice of endotracheal suctioning procedures among nurses in neonatal ICU [page 29] <i>Sri Banun M Shabri</i>	
1500 - 1530	The effect of nurse-led education of ventilator care bundle on nurses' knowledge, compliance and ventilator-associated pneumonia incidence [page 30] <i>Choy Kee Leong</i>	
1530 - 1600	Nutritional support of critical care patient: Enteral nutrition [page 30] <i>Tah Pei Chien</i>	
1600 - 1630		
1430 - 1630	SYMPOSIUM 12 PHARMACOTHERAPY Chairperson: Noor Airini Ibrahim Pharmacokinetics of antimicrobials in pneumonia [page 31] <i>Lau Chee Lan</i>	◀ JOHOR ROOM
1430 - 1500	Antibiotic therapy in neutropenic sepsis <i>J V Divatia</i>	
1500 - 1530	Polymixins: Old antibiotics back in favour <i>Khoo Tien Meng</i>	
1530 - 1600	Intravenous immunoglobulin in critically ill patients <i>Shanti Rudra Dey</i>	
1600 - 1630		
1630 - 1700	TEA	
1700 - 1800	AGM OF THE MALAYSIAN SOCIETY OF INTENSIVE CARE	◀ KELANTAN ROOM
1700 - 1800	TEA SATELLITE SYMPOSIUM (<i>Janssen-Cilag Malaysia</i>) Meeting today's challenges in serious nosocomial infections <i>Jeffrey Lipman</i>	◀ SABAH ROOM

17th July 2011, Sunday

Floor Plan and Trade Exhibition
(Basement 2)

0830 - 0915

PLENARY 4

Chairperson: Tang Swee Fong
Delivery of critical care in a developing country
Andrew Argent

4 SABAH ROOM

0915 - 1000

PLENARY 5

Chairperson: Tang Swee Fong
Prone position
Luciano Gattinoni

4 SABAH ROOM

1000 - 1030

TEA / TRADE EXHIBITION

1030 - 1230

SYMPOSIUM 13

MISCELLANEOUS II

Chairperson: Foong Kit Weng
Diagnostic strategies for suspected pulmonary embolism in the critically ill
Babu Abraham

4 SABAH ROOM

1030 - 1100

Do we need to reassess transfusion trigger? (page 31)
Anselm Suresh Rao

1100 - 1130

DVT prophylaxis in solid organ and head injury
Jameela Sathar

1130 - 1200

Performance evaluation of the intensive care units (page 32)
Tai Li Ling

1030 - 1230

SYMPOSIUM 14

NEUROLOGY

Chairpersons: Nahla Irfiza Ismail
Anxiety and depression in the critically ill patient
JY Divatia

4 SARAWAK ROOM

1030 - 1100

Management of post cardiac arrest (page 33)
Mohd Bassi Mat Nor

1100 - 1130

What's new in monitoring in severe head injury? (page 34)
Lim Wee Leong

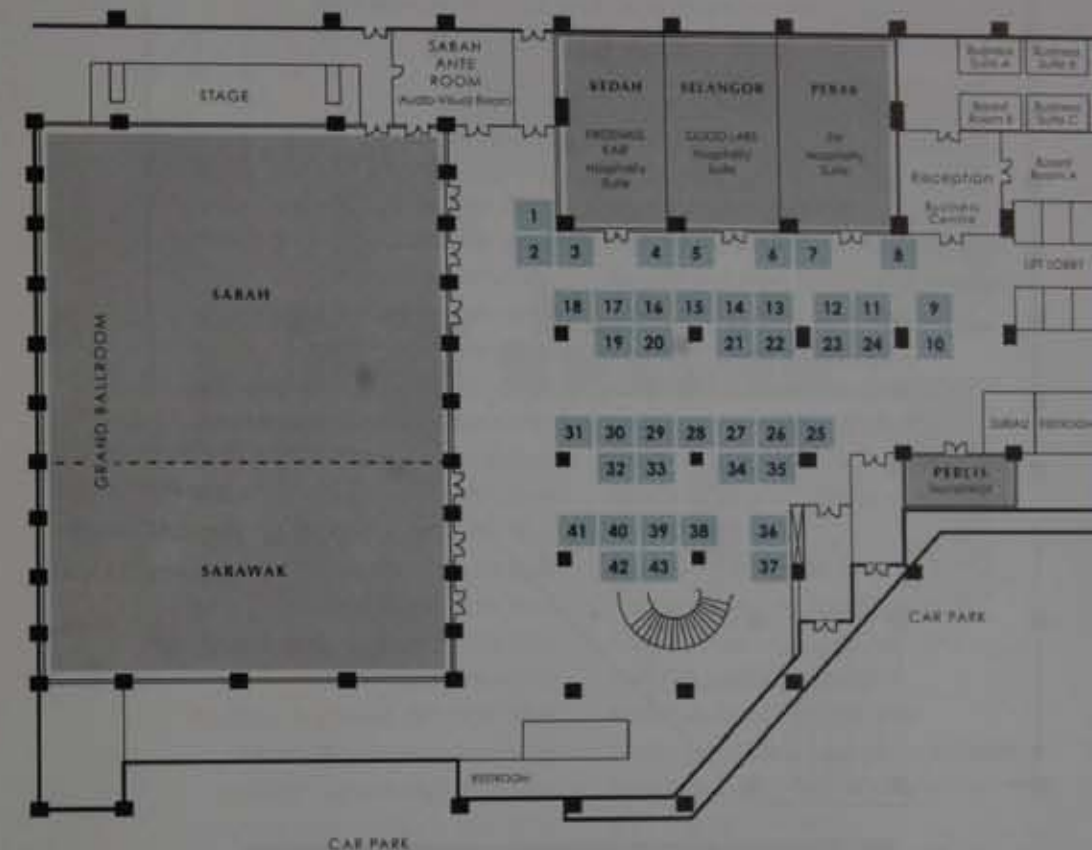
1130 - 1200

Pathophysiology and treatment of intracranial hypertension
Dharmendra Ganagan

1200 - 1230

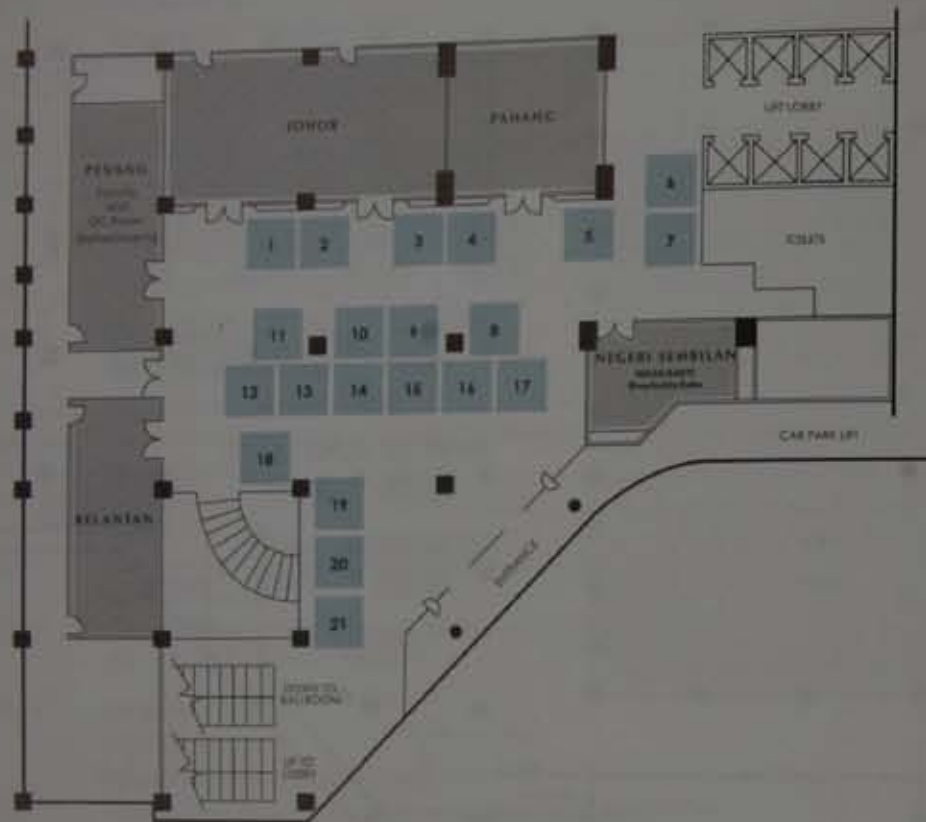
LUNCH

1230 - 1330



BOOTH NO.	COMPANY	BOOTH NO.	COMPANY
1	Edwards Lifesciences	19 & 20	TL Healthcare S E A. Sdn Bhd
2 & 3	KL Med Supplies (M) Sdn Bhd	21 & 22	IDS Services (Malaysia) Sdn Bhd
4 & 5	Adlizz Sdn Bhd	23 & 24	Suria-Medik Sdn Bhd
6 & 7	Schiller (Malaysia) Sdn Bhd	25	Loerdal Malaysia Sdn Bhd
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15 & 16	Hospimetrix Sdn Bhd	42	Janssen-Cilag Malaysia
17 & 18	Covidien	43	Edaran Mediatech (M) Sdn Bhd

Floor Plan and Trade Exhibition
(Lower Lobby)



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Thank You

The Organising Committee of ASMIC 2011 records its deep appreciation to the following for their contributions and support:

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PLENARY 1

Sepsis Associated Acute Kidney Injury (AKI)

Rinaldo Bellomo
Melbourne, Australia

Acute kidney injury (AKI) is a serious condition that affects many ICU patients. The most common causes of AKI in ICU are severe sepsis and septic shock. The mortality of AKI in septic critically ill patients remains high despite our increasing ability to support vital organs. This is partly due to our poor understanding of the pathogenesis of sepsis-induced renal dysfunction. However, new concepts are emerging to explain the pathogenesis of septic AKI, which challenge previously held dogma. Throughout the past half century, septic AKI has essentially been considered secondary to tubular injury, which, in turn, has been considered secondary to renal ischemia. This belief is curious because the hallmark of septic AKI and AKI in general is the loss of glomerular filtration rate (GFR). It would seem logical, therefore, to focus on the glomerulus in trying to understand why such loss of GFR occurs. Recent experimental observations suggest that, at least in the initial phases of septic AKI, profound changes occur which involve glomerular hemodynamics and lead to loss of GFR. These observations imply that changes in the vasoconstrictor tone of both the afferent and efferent arterioles are an important component of the pathogenesis of septic.

SYMPOSIUM 1

Monitoring The Lung During Mechanical Ventilation

Mohd Basri Mat Nor
International Islamic University, Kuantan, Pahang, Malaysia

Techniques to monitor the respiratory system during mechanical ventilation have evolved significantly over the years. When integrated with the physical examination, these tools aid the management of respiratory disease, ultimately leading to safer and more effective care for all mechanically ventilated critically ill patients. Respiratory monitoring tools allow for titrating therapeutic interventions to the patient's disease state, if used correctly can facilitate optimal respiratory support and aid in weaning to extubation. With close monitoring, aberrations or changes in physiologic states can be detected before disease progression, allowing for early interventions and prevention of worsening disease.

Paramount to optimal management is not only selecting the correct mode and ventilator settings for the underlying disease (e.g. ARDS, COPD, Asthma, broncho-pleural fistula), but also monitoring physiologic changes that occur from the disease state, or in response to therapeutic interventions. Monitoring respiratory mechanics is essential to reduce complications related to mechanical ventilation and to monitor recovery from respiratory failure. In intensive care, common means of respiratory monitoring used are work of breathing measurements, and flow-volume and pressure-volume loops.

The availability of ventilator graphics and waveform analysis has had a tremendous impact on the science of mechanical ventilation. Through the analysis of these pressure, volume and flow waveforms, intensive care physician can now more accurately assess not only the current state of lung function but the status of patient-ventilator interaction as well. Role of ventilator graphics include identifying pathophysiologic processes, recognizing a change in patient's condition, optimizing ventilator settings and treatment, determining effectiveness of ventilator settings detect adverse effects of mechanical ventilation and minimize risk of ventilator-induced complications.

F-V loops are particularly useful in diagnosing the type of respiratory disease present (restrictive vs. obstructive). In lower airway obstruction they have a characteristic shape which may change in response to bronchodilators and in large airways they can help identify the type of obstruction (fixed or variable) if obtained while spontaneously breathing or if the ETT lies above the level of obstruction. P-V loops are useful to help to determine optimal lung recruitment, compliance and overdistension.

SYMPOSIUM 1

Peri-Operative Management Of Patients With Severe Respiratory Disability

Yahya Shehahi
Intensive Care Unit, Prince of Wales Hospital, New South Wales, Australia

Patients recovering from anesthesia typically have a reduction in functional residual capacity, vital capacity and increased ventilation perfusion mismatch in addition to loss of hypoxic pulmonary vasoconstriction. While these changes are well tolerated in patients with mildly reduced respiratory function, patients with severe pulmonary disease often struggle after anesthesia in particular for surgery that involve the chest or upper abdomen.

A careful and considered assessment of patient's cumulative risk is essential. This includes pulmonary reserve and respiratory capacity, proposed surgery, urgency and associated co-morbidities. Older patients are at higher risk for morbidity and mortality.

The classic division of lung disease into restrictive and obstructive pattern may be unhelpful in these situations. Indices of severity include poor functional capacity, home O₂, elevated PaCO₂, chronic steroid dependency, heavy smoking, severe chronic bronchitis and obesity.

The strategies of peri-operative management should aim at (1) Optimization of respiratory function before surgery (2) Careful selection of anesthesia technique to aim for early extubation, preferably at the end of surgery (3) Effective post-operative analgesia (4) Targeted postoperative respiratory support non invasive ventilation (NIV) and (5) Hemodynamic optimization with careful fluid and cardiac management.

A combined general and regional anesthesia seems to lower risk of pulmonary complications, the use of intra-thecal opioids can offer significant advantage in these patients. A recent meta-analysis supported the use of regional techniques to reduce pulmonary complications. Amongst IV agents, short acting, easy to titrate agents like propofol, Remifentanyl and Cis-atracurium can offer favorable kinetics and rapid offset.

The corner stone of post-operative care is adequate analgesia and physiotherapy in an intensive care environment. Balancing against risk of respiratory depression, the addition of agents that offer basal sedation and analgesia without respiratory depression like dexmedetomidine may offer distinct advantages. Early detection of respiratory fatigue, post-operative chest infection is critical to reverse and intervene early. The use of high flow humidified Oxygen, NIV and early mobilization is likely to facilitate recovery.

An agreed plan for post-operative ventilation, tracheostomy and knowledge of patient's and family expectations is important. Considering the risk involved, limits of post-operative interventions should be discussed with patients and their families before surgery.

SYMPOSIUM 1

Ventilatory Management In Patients With Neuromuscular Disease

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Neuromuscular diseases (NMD) can affect all major respiratory muscles, leading to the development of respiratory failure, which is the most common cause of morbidity and mortality in patients affected by these conditions.

Symptoms will differ depending on the speed of onset of the respiratory muscle weakness. Based on the clinical onset of acute respiratory failure (ARF), NMD can be classified into two categories: 1) Slowly progressive NMD with acute exacerbations of chronic respiratory failure, and 2) Rapidly progressive NMD with acute episodes of respiratory failure. The most common slowly progressive NMDs, such as motor neuron diseases and inherited myopathies account for the majority of NMD patients developing chronic neuromuscular respiratory failure at risk of acute exacerbations. Rapidly progressive NMDs such as Guillain-Barre syndrome and myasthenic crises are characterized by a sudden onset of ARF, usually in patients with previously normal respiratory function.

Patients requiring ventilatory support can either receive invasive or non-invasive support. Consensus opinion strongly supports the view that Non-invasive ventilation (NIV) is preferable to invasive mechanical ventilation for the long term ventilatory support. NIV is recognized as an efficient therapeutic option in patients with chronic respiratory insufficiency and available evidence demonstrates improved quality and quantity of life. However the long-standing clinical experience with NIV contrasts with the absence of validated criteria for initiating these treatment and the paucity of data on its long term physiological and psychological effects. However not all patients are suitable candidates for NIV and there remains a role for invasive / tracheostomy ventilation in the management of NMD patients. The decision to intubate these patients should be made earlier rather than later to avoid emergency intubation. Due to the variety and complexity of different NMDs, adequate management must be integrated with individualized clinical judgement of the bedside.

SYMPOSIUM 2

Status Epilepticus In The Paediatric ICU

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Status epilepticus (SE) is a neurological emergency and its management presents great challenges to the paediatric intensivist and neurologist. The incidence of SE has been shown to highest in children under 1 year of age with generalized convulsive seizures being more common than other seizure types. Most studies point to a heterogenous nature of causes leading to SE with idiopathic epilepsy and febrile status epilepticus accounting for the majority of admissions. Generalised tonic-clonic SE as well as subtle SE must be treated rapidly and aggressively. One of the major challenges to management of SE in the ICU setting is the development of refractoriness to anti-epileptic drugs. The treatment of tonic-clonic SE is usually divided into three stages. In the early first stage of SE, buccal midazolam has become an important out-of-hospital treatment option. In the second stage, which is established SE, modern treatment choices include valproate, levetiracetam and lacosamide. In the stage of refractory SE, a variety anaesthetics and non-pharmacological therapies can be administered. Treatment should also focus on the causes of SE. Continuous EEG monitoring in the ICU is increasingly recognised as a valuable means of monitoring for seizures especially non-convulsive SE. Outcome of SE in children treated in the ICU is generally favourable in most patients, but mortality and morbidity rates are high. The main predictors of mortality are aetiology and prior neurologic abnormalities while the main predictor of morbidity is underlying aetiology.

SYMPOSIUM 2

Management Of A Child With Diabetic Ketoacidosis

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Diabetic ketoacidosis (DKA) is defined as serum glucose >16 mmol/l, ketonemia, pH <7.3 and $\text{HCO}_3^- < 15$ mmol/l. The patient typically presents with history of polyuria, polydipsia, polyphagia, wt loss and appears lethargy, dehydrated with hyperpnea and acetone in the breath

Cerebral edema is the most dreaded complication of DKA as it can result in death or neurologic handicap. It occurs 4-12 hours after treatment is started. The risk factors include raised serum urea, severe hypocapnia at presentation or the administration of sodium bicarbonate

Although risk factors for DKA and treatment have been identified and have led to many proposed pathophysiologic mechanism there is no general agreement. Some of the mechanism proposed include hypoxia and ischemia due to the disease state causing a reduced blood volume from dehydration and low PaCO_2 resulting in vasoconstriction and cerebral ischemia. Another mechanism proposed is the hyperosmolar state of longstanding hyperglycemia.

In the therapy of cerebral edema emphasis is on the importance of close monitoring to detect early warning signs before catastrophic collapse occurs. Treatment includes the use of mannitol and hypertonic saline, Steroids is not recommended.

Certainly the best way to prevent cerebral edema is to prevent DKA. Several guidelines are available for the management of DKA and includes careful fluid administration, type of fluids, insulin therapy, correction of electrolyte abnormalities and avoiding sodium bicarbonate administration except in severe circulatory compromise.

SYMPOSIUM 3

The Importance Of Fluid Balance In Acute Kidney Injury (AKI)

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Melbourne, Australia

Intravenous fluids are widely administered to patients with, or at risk of, acute kidney injury (AKI). However, deleterious consequences of overzealous fluid therapy are increasingly recognised. Salt and water overload may predispose to organ dysfunction, impaired wound healing and nosocomial infection, particularly in AKI where fluid challenges are frequent and excretion impaired. In this article we review how interstitial edema may further delay renal recovery and why conservative fluid strategies are now being advocated. Applying these approaches in critical illness is challenging. While volume resuscitation is needed to restore cardiac output, this often leads to tissue edema, contributing to on-going organ dysfunction. Fluid-conservative therapy mandates a switch toward neutral and then negative balance once hemodynamic stabilization is achieved. In AKI, this may require earlier use of renal replacement therapy. Similarly, hypovolemia and renal hypoperfusion may occur when excessive fluid removal is pursued with diuretic or extracorporeal therapy. Thus, accurate assessment of fluid status and careful definition of targets are needed at all stages to improve clinical outcomes. Multiple observational studies have now linked a positive fluid balance with adverse outcomes in patients with AKI. A fluid conservative strategy was recently tested and found effective in a large randomized controlled trial in patients with acute lung injury (ALI). Similar randomized controlled studies in AKI patients now seem justified.

SYMPOSIUM 3

CRRT vs IHD - Impact On Renal Recovery

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Two large observational studies or randomized controlled trials in the field of critical care nephrology have been completed and reported. These studies provide important information to guide our future practice. In particular, the ATN study and the RENAL study (both multicentre randomized controlled trials of >1000 patients) provide, for the first time, level I evidence to guide the practice of RRT in critically ill patients and to better define the optimal intensity of such RRT in this setting. However, the two studies have important differences in approach, logistics, timing of intervention, patient outcomes and renal outcomes, which require detailed understanding. They also further highlight the likely differential effect of intermittent hemodialysis (IHD) compared with continuous renal replacement therapy (CRRT) in terms of renal recovery. The RENAL trial only delivered 350 IHD sessions compared with >5000 in ATN. Patients in the RENAL study were more likely to be dialysis independent at 28 days and sessions compared with >5000 in ATN. Patients in the RENAL study were more likely to be dialysis independent at 28 days and at the end of the follow up period. Dialysis dependence was more than 300% greater among survivors in the ATN trial. If one considers the combined outcome of alive and dialysis independent, the difference is increased in favour of RENAL. This finding is striking and consistent with the findings of observational studies which linked intermittent therapy with delayed recovery or non-recovery. It is important and requires further investigation.

LUNCH SATELLITE SYMPOSIUM

Do We Need Daily Interruption In Modern Sedation Practice?

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More than 70% of intensive care patients require mechanical ventilation at some stage during ICU stay, most of these patients need IV sedative infusions to facilitate life sustaining treatments and interventions.

The unfavorable kinetic profile of many ICU sedatives in critical illness in addition to patients' individual variability led to a plethora of strategies to reduce untoward deep sedation. The advent of Daily Sedation Interruption (DSI) by Kress in 2000 was perhaps the most successful. DSI has become part of many sedation guidelines in many countries, including USA, UK, Canada and Malaysia.

DSI has created a culture of light sedation and avoidance of deep sedation. While this is seen to be a good outcome, there are many limitations that have not been addressed amidst the DSI exuberance.

DSI hasn't been externally validated in a randomized controlled trial outside North America. Studies that attempted to replicate DSI results in ANZ and even in US institution with a different modal of care has failed to replicate the same results. Similarly, DSI was tested on a narrow case of mix of patients with respiratory failure; therefore, the results can't be generalized to general ICU patients of different acuity and clinical needs. Furthermore, the impact of DSI on CV status, pain, agitation, comfort, ventilator synchrony hasn't been addressed.

A recent meta-analysis on DSI randomized trials has clearly shown that there is no benefit of DSI on any clinically relevant ICU or hospital outcomes including ventilation time, ICU Stay and mortality.

Since the original DSI was promoted 12 years ago, the practice of sedation in critical illness has changed significantly. The focus of sedative choice and sedation strategy has changed from soft ICU outcomes like ventilation time and ICU stay into a targeted sedation practice that aim to reduce agitation, delirium and post traumatic stress. The link between sedative choice and long-term cognitive function, quality of life and mortality have led to the adaption of new paradigms of sedation strategies, including continuous sedative titration, goal directed delirium sparing sedation strategies along with early mobilization and rehabilitation.

While DSI served us well 10 years ago, it doesn't belong to modern sedation practice with multi-modal triad of analgesia, targeted sedation and delirium prevention.

In modern sedation, we should simply say no to routine untested daily sedation interruption.

SYMPOSIUM 5

The Compliance Of Pain Care Bundle In An Adult Critical Care Setting In United Kingdom

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AIM

The aim of this study was to explore factors influence compliance of Pain Care bundle among health care providers' in pain management.

BACKGROUND

Pain management in critical care remains complex with lack of standardised pain management approach. Management of pain using concept of bundle is the current approach to manage pain. Pain Care Bundle (PCB) refers to the grouping of evidence-based practice protocols for pain management was developed to address concerns regarding the pain management among critically ill patients.

METHODS

This study utilized a qualitative prospective design using a semi-structured in-depth interview in a large critical care unit in England. A convenience sample of 32 healthcare professionals were interviewed to explore the views of healthcare professionals on the factors influence uptake of PCB in critical care setting.

RESULT

Four main themes emerged were 1) Suitability to the critical care setting; 2) Applicability to the critical care setting 3) Ownership on the PCB; and 4) Necessity with current practice. The result shows poor compliance among the healthcare professionals and they do not perceived PCB as useful in managing acute pain among critically ill patients.

CONCLUSION

Study findings revealed that there is a gap between the pain management practice as directed by the bundle and actual practice. There were variations in pain management practice with limited use of evidence-based pain management clinical guidelines.

Patients' Recollections Of Their Experiences In The Intensive Care Unit Of A Tertiary Hospital

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INTRODUCTION

Ventilated patients in intensive care unit (ICU) encounter many unpleasant experiences. These experiences may be reported as factual incidents or delusional memories of ICU such as dreams, hallucinations and frightening experiences. The objective of this study was to assess patient's recollections of their experiences in the intensive care unit of a tertiary hospital.

METHOD

A cross sectional descriptive study using "Intensive Care Experience Questionnaire" which comprised four domains: awareness of surrounding, frightening experiences, recall of experience and satisfaction with nursing care. Forty five participants who fulfilled the inclusion criteria were recruited in this study. This study was conducted in ICU of Universiti Kebangsaan Malaysia Medical Centre (UKMMC).

RESULTS

Twenty respondents (44%) were aware of their surrounding, 31 respondents (69%) reported frightening experiences and recall of experience (39 respondents, 87%). Majority of respondents (43 respondents, 96%) reported satisfaction with the delivery of nursing care. There were significant differences between educational level and length of stay in ICU of the respondents with awareness of the surrounding with p values <0.05 . There were also significant differences between frightening experiences and recall of experience with against marital status of respondents ($p < 0.05$).

CONCLUSION

This study provided information about the patients who reported frustrations in their attempts to make their needs known. Although they were on sedation and relaxation, they were aware of all unpleasant events occurring in the ICU. Implications for nursing practice: nurses should deliver optimum quality care to meet mechanically ventilated patients who reported their unpleasant recollections in ICU.

KEYWORDS

recollection, recollection, patient, intensive care, unit

Nurses' Experiences Working In Neonatal ICU

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Increasingly nurses who work in neonatal intensive care unit (NICU) have been called on to care for very small and fragile babies. However there are very little studies addressing the experiences of providing care to these critically ill babies.

An interpretative phenomenological approach was adopted. Ten neonatal nurses in one tertiary neonatal unit in the United Kingdom were interviewed about their experiences of providing care to critically ill babies. Interview transcripts were analysed using Colaizzi's framework. The respondents described working in NICU as a process involving feelings together with professional knowledge, and competence. The essential structure of working in NICU was identified as a process of competent physical and technical action imbued with affective skills. The fundamental conflict that neonatal nurses face in balancing the technical competence and the affective skills need to be recognised in order to foster collegial support that could contribute to a more conducive work environment.

Intensive Care Nurses' Knowledge In Prevention Of Ventilator-Associated Pneumonia

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BACKGROUND

Ventilator-associated pneumonia (VAP) is the most common serious nosocomial infectious disease in mechanically ventilated patients; it has a high mortality and morbidity. Nurses' knowledge is very important in prevention of VAP, because lack of knowledge was indicated as barrier for adherence to VAP prevention.

OBJECTIVE

To explore intensive care nurses' knowledge in prevention of ventilator-associated pneumonia.

METHODS

A quantitative descriptive survey, non-experimental by self administered questionnaire. A Cross-sectional survey of one time from February until March 2011 among 121 registered nurses in Intensive Care Unit in One Hospital.

RESULT:

The finding shows, that 59.5% of the respondents had poor knowledge in VAP prevention. The inferential statistic detected a significant relationship between age, years experience in nursing and participation in infection control, certificate in Intensive Care Nursing and experience in Critical care unit. (p -Value < 0.05)

CONCLUSION

The result shows that, inadequate knowledge in VAP prevention among the nurses, and the above findings may impact the quality care of patient. The study showed age, experience in nursing, certificate and participation in infection control programme tend to influenced the respondent's knowledge. There should be more programs to increase nurses' knowledge in the VAP prevention.

Bronchoscopy In The Intensive Care Unit

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Since the advent of flexible fibreoptic bronchoscopy (FFOB) by Shigeto Ikeda in 1966, FFOB has now become an essential tool in intensive care practice. It has both a diagnostic (pneumonia, trauma, inhalational injury) and therapeutic (atelectasis, secretion removal, haemoptysis) role.

An intensivist performing FFOB in an intensive care patient is faced with several challenges (intubated, ventilated, sedated and physiologically unstable patient) quite unlike that of a respiratory physician. In order to avoid severe respiratory disturbances and optimize tidal volume during FFOB, several recommendations have been made:

- 1) Pressure controlled ventilation
- 2) Size 8 endotracheal tube (ETT) or > 2mm larger than external diameter of bronchoscope
- 3) No PEEP to be used (as high auto PEEP during FFOB)
- 4) High FiO₂ 100%
- 5) High flow up to 80L/min, rate < 12
- 6) Short suction periods (< 3 seconds)

The diagnostic role of FFOB in ventilator associated pneumonia (VAP) is important as clinical and chest x-ray characteristics have a poor sensitivity and specificity in diagnosing VAP. Bronchoalveolar lavage (BAL) and protected specimen brushings (PSB) have better sensitivity (78-91%) and specificity (78-94%) in comparison. A randomized controlled trial showed that BAL resulted in a reduction in 14 day mortality, Organ Failure Score and antibiotic use compared to blind qualitative endotracheal aspirates (ETA). However, recent studies have shown that blind techniques like ETA, mini-BAL and blinded protected catheter may result in no difference in mortality. Current recommendations are to perform a quantitative blind ETA prior to administering early broad spectrum antibiotics with re-evaluation on the 3rd day before considering FFOB.

The use of FFOB for the treatment of atelectasis has had varying success rates (19-89%). A recent RCT showed that FFOB with 4 hourly chest physio compared to physiotherapy alone found that there were no differences in chest x-ray resolution at 48 hours. However, subgroup analysis showed that those with acute whole lung, lobar and segmental atelectasis may benefit from FFOB. For the management of haemoptysis, a survey of respiratory physicians showed that while most carried out FFOB (80%), most of them found it not to be very useful for therapeutic purposes. A review showed that FFOB was similar to CT in identifying the site of bleeding (73% v 70%) but was poor at diagnosing the cause (8% v 77%). Other uses include the use of FFOB for monitoring percutaneous dilatational tracheostomy. Although the complication rate of FFOB monitored percutaneous tracheostomy were similar to those without FFOB, more severe complications occurred without the use of FFOB. There is also a suggestion that FFOB monitored percutaneous tracheostomy done via a laryngeal mask airway may result in fewer complications than those done through an ETT. For inhalational injury, early FFOB may be used to assess the presence and severity of airway injury. This in turn may be used as an indicator of the prognosis, duration of stay and need for increased fluid resuscitation in the first 48 hours after a burn injury.

It is important that we adhere to the guidelines on diagnostic FFOB (British Thoracic Society) prior to performing FFOB on our patients:

1. Informed consent
2. Infection control (bronchoscope sterilization, staff protection)
3. Antibiotic prophylaxis
4. Bronchodilator for asthmatics and chronic obstructive pulmonary disease
5. Coagulation and platelet screen
6. Blood gases (relative contraindications pO₂ < 8kPa, FiO₂ > 60%, PEEP > 8 cmH₂O)
7. IV access, sedation, local anaesthesia
8. Optimum ventilatory settings
9. Post procedural chest x-ray

FFOB is a safe (mortality 0.01-0.05%) and useful procedure in intensive care provided that careful patient selection, monitoring and optimum ventilatory adjustments are made.

Fluid Balance In Sepsis

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The use of the terms 'wet' or 'dry', 'liberal' or 'conservative' and 'to push' or 'to pull' in any discussion of fluid management in sepsis reflects the controversy that surrounds it. Nonetheless, more and more evidence has emerged over the years, shedding more light into the issue. From the new insight into endothelial permeability at the microvascular level to the results of large scale multi-centre trials at the clinical level, we now have a clearer answer to this age old controversy.

Growing appreciation of the role of endothelial glycocalyx in transcapillary fluid shift, in addition to the well recognised Starling principle, is a significant update in microcirculation physiology. The luminal coating of vascular endothelium, the glycocalyx is a major part of the vascular barrier function that limits transcapillary fluid loss in stress and sepsis. The observation of degradation of endothelial glycocalyx by atrial natriuretic peptide (ANP), triggered by hypervolaemia, adds support to avoiding fluid overload in sepsis. Another related development in fluid physiology is the rethinking on the actual existence of the 'third space'. Traditionally accepted as non-functional extra-cellular volume loss, third space replacement inevitably contributes to positive fluid balance. It is, however, increasingly acknowledged that fluid only shifts within the functional extra-cellular compartment, from intravascular into the interstitial space, and third space replacement will contribute towards worsening interstitial oedema.

Perhaps the more convincing argument in support of restrictive fluid approach lies in the results of several concluded trials. In patients with acute lung injury, a common sequela of sepsis, the FACCT study showed that conservative fluid management improved lung function and shortened the duration of ventilation and ICU stay without compromising other organs. While it is well accepted by clinicians that wet lungs are less than ideal for patients, there is a general concern that a conservative fluid approach will compromise renal outcome. The PICARD study dispels such concern. In this study, a fluid overload of more than 10% increase in body weight was independently associated with mortality in critically ill adults with acute kidney injury. Another two multi-centred studies, SOAP and VASST, specifically looked into the septic population and found significant association between positive fluid balance and increased mortality.

While the research to better understand the complex process and subsequent clinical management of sepsis continues, the current available evidence should compel clinicians to be more vigilant of the fluid balance of their septic patients.

The Ideal Ward Round

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Modern medical rounds date back to the early 1890s when Sir William Osler, known as the "Father of modern medicine" insisted that students learn from seeing and talking to patients. He developed the practice of bedside teaching at Johns Hopkins Hospital and Medical School. He liked to say, "He who studies medicine without books sails an uncharted sea, but he who studies medicine without patients does not go to sea at all." His best-known saying was "Listen to your patient, he is telling you the diagnosis," which emphasizes the importance of taking a good history.

Today, ward rounds are part and parcel of the management of hospitalized patients and there are many variations of rounds occurring in any given hospital.

Basically there are 3 types of ward rounds: work rounds, teaching rounds and combined work and teaching rounds. Work rounds focus on patient care while teaching rounds focus on educating team members utilizing patient case information. A combination of work rounds and teaching rounds, work-teach rounds, may seem to be the better choice as they may have more diverse case discussions than the more in-depth teaching-only rounds because more and different type of patients seen while rounding. Will that be an ideal ward round?

I believe an ideal ward is one which involves a multidisciplinary team approach, with the individual team members knowing his/her role and all team members working in a cohesive manner led by a team leader. For an ideal ICU round, the team leader shall be an intensivist and the team members shall include nurse in charge of the patient, sister of ICU, ICU specialist, ICU medical officer, specialist of the primary unit which owns the patient, pharmacist, physiotherapist, nutritionist, occupational therapist and social worker. Last but not least, the team members should also include the patient and family.

In a population-based retrospective cohort study of medical patients admitted to Pennsylvania acute care hospitals from July 1, 2004 to June 30, 2006, it was found that daily rounds by multidisciplinary team were associated with lower mortality among medical ICU patients and the survival benefit of intensivist physician staffing was in part explained by the presence of multidisciplinary teams in high-intensity physician-staffed ICUs.

What would then be the barriers to achieving the ideal ward round? These barriers are manpower shortage, time constraints and lack of conducive physical environments.

Despite these barriers, we can aim to achieve the ideal ICU round by starting off with a multidisciplinary team approach to a work-teach ICU round eg once a month and then slowly increasing its frequency to at least two or three times weekly. In the meantime, the hospitals need to realize the importance of sufficient staffing to reduce patient complications and length of stay.

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Sedation Practice In Intensive Care Evaluation - SPICE And The Way Forward

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Sedation research faces many challenges. Many trials are of low quality, others lack generability and external validity due to regional variability, case mix and differing model of care. There is significant misalignment between randomized trials and current practice. It is imperative that current actual practice and associated outcomes are adequately identified.

The SPICE study aimed to determine the relationship between actual sedation practice and relevant outcomes including delirium and mortality of ICU patients in Australia and New Zealand (ANZ) and in Malaysia.

In 25 ANZ ICUs, a multicentre prospective longitudinal cohort study, of 251 critically ill patients ventilated and sedated \geq 24 hours for a total of 2678 study days with four hourly sedation (RASS) and daily delirium (CAM-ICU) assessments. Daily administration of sedative agents, ventilation time, and incidence of coma, delirium and 180-day mortality were assessed.

The mean(SD) age and APACHEII score were 61.7(15.9) years and 20.8(7.8) respectively. The median [IQR] of ventilation time, ICU and hospital length of stay was 5.08[2.6-10], 8.54[4.74-14.33] and 20.03[11.63-36.97] days respectively. Sedative agents were prescribed on 1956(73%) study days. Two agents combination was given on 955(35.8%) days, the commonest midazolam with an opioid 471(49.3%). Single agent was given on 504(18.9%) days, mainly with propofol 157(31.2%). Dexmedetomidine was given to 11(4.4%) patients on day 1 and significantly more in patients staying in ICU \geq 4 days, 56/206(27.2%)($P<0.001$). Coma at first sedation assessment occurred in 191(67.1%) patients. Throughout the study, of 14637 assessments, 5137(35.1%) were in coma and 8109(55.4%) lightly sedated & pain free. Delirium occurred in 111(50.7%) of assessed patients with a median(inter-quartile range) duration of 2[1-4] days. Hospital mortality was 21.1%.

Results of the Malaysian SPICE will also be presented

The SPICE study identified actual current practice in ANZ and modifiable elements of sedation practice. The SPICE project is a 3 stage program with a SPICE Pilot study recruiting in 8 centers in ANZ testing 2 different paradigms of sedation. This is to be followed by a large multicentre RCT including more than 50 ICUs across ANZ and possibly selected ICUs in Malaysia.

Failure To Wean From Mechanical Ventilation

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Weaning the patients from mechanical ventilation is one of the many challenges in intensive care. Current evidence suggests that up to 20% of patients requiring mechanical ventilation will need a prolonged ICU length of stay due to difficult weaning.

Invasive mechanical ventilation is associated with risks and complications and prolonged duration of mechanical ventilation is associated with increased costs, morbidity and mortality. It has been estimated that approximately 40% of a patient's total ventilatory time is spent in a weaning mode thus safely weaning the patient from the ventilator as soon as possible is paramount. In most studies, weaning failure is defined as either the failure of spontaneous breathing trial or the need for reintubation within 48 h following extubation.

The causes of failure to wean may be complex and multifactorial and usually indicate incomplete resolution of the illness that precipitated the need for mechanical ventilation, or the development of new problems. This complex clinical problem will benefit from a structured approach to determine the reason for the failure to wean. Developing a treatment strategy require a dedicated clinician with in-depth knowledge of the pathophysiology of weaning failure.

Information Needs Of Family Members Of Critically Ill Patients In Intensive Care Unit Of A Tertiary Hospital

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BACKGROUND AND AIMS

The experience in intensive care unit (ICU) has created an intense emotional situation both to patients and their family members. The aim of this study was to determine the information needs of family members of critically ill patients in ICU.

MATERIALS AND METHODS

A cross-sectional study was conducted on 200 family members of patients admitted in ICU. A face to face interview was conducted with a self-report questionnaire of the Critical Care Family Needs Inventory (CCFNI).

RESULTS

CCFNI sub-attributes that ranked from highest to lowest and included: support (mean 39.13±6.189); proximity (mean 27.17±3.384); information (mean 24.25±3.093); assurance (mean 22.67±1.862) and comfort (mean 16.24±2.776). There were significant differences in support needs between family members with admission to ICU with p values <0.05. There were significant differences in assurance needs and information needs between family members with respect to age of p values <0.05.

CONCLUSION

The results suggested that family members perceived support and proximity as the most crucial need. Comfort need was viewed as least important. Although this study was conducted in a tertiary hospital, the findings provide insight for nurses in other clinical settings to improve the delivery of care to patients and family members.

KEY WORDS

Information, needs, critical care, patient, family, nursing.

Knowledge And Practice Of Endotracheal Suctioning Procedures Among Nurses In Neonatal ICU

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BACKGROUND

Endotracheal tube suctioning (ETT) is one of the common invasive procedures in Neonate with mechanical ventilation to maintain patency of the airway. It is a potentially harmful procedure that if performed inappropriately might result in life-threatening complications for Neonates.

OBJECTIVE

The purpose of this study is to explore the knowledge and practices in performing ETT suctioning among registered nurses in NICU. Specific objectives were to identify the level of knowledge, to determine the practices and to gain information whether there is association between demography factors (age, nursing qualification, working experiences and post basic course) with the level of knowledge.

METHOD

This quantitative descriptive cross sectional study was carried out in one of the public hospital in Kuala Lumpur where the convenience samples of registered staff nurses working in NICU (n=100) voluntary participated. Self-administered questionnaire and observational checklist by the researcher was used as the method for data collection.

RESULTS

Data collected was analyzed using the Statistical Package for Social Sciences (SPSS) version 16.0. The descriptive statistics and inferential statistic; Chi-Square test was used. The results showed that 83% of nurses (n=100) good in knowledge and 13.3% of them (n=15) were good in their practices with high score 95-100%. The significant were found between demography factors with the level of knowledge based on P value < 0.05.

CONCLUSION

The outcome of this study has provided baseline information for the researcher to identify and evaluate development in staff competencies. Further study that combined questionnaire, observational and interview are vital to assess the knowledge and practice that will reflect in registered nurses practices in this procedure.

SYMPOSIUM 11

The Effect Of Nurse-Led Education Of Ventilator Care Bundle On Nurses' Knowledge, Compliance And Ventilator-Associated Pneumonia Incidence

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BACKGROUND AND OBJECTIVE

Ventilator-associated pneumonia (VAP) contributes to morbidity and mortality, prolongs duration of mechanical ventilation, and increases use of resources and costs. Intensive care unit (ICU) nurses contribute greatly in reducing VAP incidence if they are knowledgeable and compliant with ventilator care bundle (VCB) guidelines. Hence, this study aimed to investigate the effects of nurse-led education on ICU nurse's knowledge, compliance and VAP incidence.

METHODOLOGY

Quasi-experimental design of one group pretest-posttest was used as the inquiry strategy. This study was conducted in an ICU of a large teaching hospital. All seventy one ICU nurses were included in this study. Pretest-posttest, observation on nurses' practices and VAP incidence were conducted before and after a structured education intervention. Data was processed and analyzed through SPSS version 16. Descriptive and inferential statistics were applied.

RESULTS

The nurse-led education had increased significantly nurses' knowledge [$t(70) = -36.190, p < 0.05$], compliance with VCB practices [$t(65) = -21.405, p < 0.05$], and reduced VAP incidence (from 39 per 1000 ventilator days to 15 per 1000 ventilator days). There was no statistically significant relationship between the test scores and compliance scores, test scores and gender, and test scores and education level.

CONCLUSION

The study findings had substantiated the value of nurse-led education on VCB practices in enhancing nurses' knowledge, compliance and reducing VAP incidence. This study implied the need for the teaching hospital to adopt the VCB guidelines and use education as one of the strategy for effective guidelines implementation.

SYMPOSIUM 11

Nutritional Support Of Critical Care Patient: Enteral Nutrition

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Nutrition support plays an important role in the management of nutritional deficiencies in properly selected critically ill patients. Enteral nutrition (EN) via tube feeding is the preferred way of feeding the critically ill patient and an important means of counteracting for the catabolic state induced by severe diseases. Nutrition support in the critically ill patient had 3 main objectives: to attenuate the metabolic response to stress, to prevent oxidative cellular injury, and to favorably modulate the immune response. Nutritional modulation of the stress response to critical illness includes early enteral nutrition, appropriate nutrients delivery, and meticulous glycemic control. Delivering early nutrition support therapy, primarily using the enteral route, is seen as a proactive therapeutic strategy that may reduce disease severity, diminish complications, decrease length of stay in the ICU, and favorably impact patient outcome. This symposia lecture reviews nutritional assessment of EN, nutritional requirements of EN, nutritional intervention of EN, management of complications of EN and monitoring parameters of EN in the critically ill patients. A full nutritional assessment allows the calculation of appropriate feeding goals. The route of feeding, enteral or parenteral, is determined by the presence or absence of a functioning intestine and hemodynamic status of the patient. The specific roles of carbohydrates, fats, and protein need to be considered in order to prevent overfeeding and other complications. The efficacy of certain disease-specific and immune-modulating enteral formulas has been demonstrated in clinical trials, however, careful cost-benefit analyses of these specialty formulations are required.

SYMPOSIUM 12

Pharmacokinetics Of Antimicrobials In Pneumonia

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Nosocomial pneumonia is the second most common nosocomial infections. The treatment success demands for definitive diagnosis, timely administration and appropriate antimicrobial therapy. However, adequate treatment is not only focusing on the likely antimicrobial coverage/spectrum, but also the sufficient dose and interval according to the pharmacodynamics and pharmacokinetics properties. Antimicrobials pharmacodynamics can be divided into concentration dependent (C_{max}/MIC), time dependent ($fT > MIC$) and concentration dependent with time dependency ($1/AUC_{0-24}/MIC$). In order to have optimal antimicrobials activity, the knowledge of the pharmacokinetics profile is essential to ensure the exposure target is achieved at the blood and infection site in the lung compartment. It is proposed that drug concentration in epithelial lining fluid (ELF) and alveolar macrophage cells are predictor of antimicrobial activity in pneumonia although more evidence are still required to establish the correlation with clinical outcome and bacteriological response. Penetration into lung is affected by the physicochemical properties. Hydrophilic antimicrobials (β lactam, vancomycin, aminoglycosides) distribute mainly into intravascular compartment and interstitial water, whereas lipophilic antimicrobials (macrolides and Linezolid) can cross lipid membranes and distribute intracellularly. Various researches have been conducted to study the pharmacokinetics behaviours in both healthy volunteers and specific patient groups including those with pneumonia. Furthermore, variation in pharmacokinetics profile of antimicrobials occurs in critically ill patients due to changes with fluid shift and inflammation in the presence of tissue hypoperfusion, renal and hepatic dysfunctions. Several dosing strategies have been proposed including optimal plasma drug concentration. Therefore, pharmacokinetics is a crucial factor in selecting the appropriate agent and optimal dosing with consideration of infection site and patient pathophysiological status. This is not only to ensure the therapeutic efficacy but also prevention of antimicrobial resistance in management of pneumonia.

SYMPOSIUM 13

Do We Need To Reassess The Transfusion Trigger?

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INTRODUCTION

Blood transfusion is common in critical care. Historically, guided by transfusion trigger of haemoglobin (Hb) below 10g%. Reevaluation of this practice needed in view of reports of potential complications and worse outcomes after blood transfusion. Transfusion Requirements in Critical Care Trial (TRICC), NEJM 1999

Restrictive (Hb 7-9g %) versus liberal (Hb 10-12g %) strategy: Mortality lower in the restrictive group. Possible exception those with unstable angina and acute myocardial infarction.

Blood transfusion in various critically ill conditions:-

Haemorrhagic shock: Blood transfusion clearly indicated.

Mechanical ventilation: Higher mortality and longer ICU stay, no evidence of easier weaning.

Acute coronary syndromes: Equivocal results, more studies needed.

SEPSIS

Most studies show increase O₂ delivery but not O₂ consumption.

Acute lung injury (ALI)/ Acute respiratory distress syndrome (ARDS): Increased incidence noted in patients receiving blood transfusions.

Traumatic brain injury / subarachnoid haemorrhage: No evidence of benefit of liberal strategy of blood transfusion

Risk of blood transfusion: Increased nosocomial infection, multi-organ failure (MOF) and systemic inflammatory response syndrome (SIRS) rate.

CONCLUSION

Optimal Hb level in critically ill patients is unknown. The use of only the Hb level as a transfusion trigger should be avoided. The decision to transfuse should be based on various factors which include the duration and extent anemia and the presence of any pre-existing patient conditions.

Performance Evaluation Of Intensive Care Units

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In general, the intensive care unit is the most expensive, technologically advanced and resource-intensive area of medical care. Concerns over quality and costs have prompted the need to evaluate performance of intensive care units. The performance of a unit may be evaluated against itself (over time), other ICUs or other appropriate benchmarks.

Crude mortality rate is probably the most robust performance measure but it should not be used to compare performance of different ICUs. Standardised mortality ratio (SMR), defined as the ratio of the observed mortality rate to the expected mortality rate (predicted by severity of illness scoring systems), does account for some differences in patient case mix between ICUs, and therefore is commonly used to compare the performance of different ICUs. However, SMR has its limitations, which is related to calibration, accuracy within some diagnostic groups and different countries, and aging of the developmental data set.

No single performance variable can adequately characterise all aspects of performance in an ICU. The current day conceptual framework for performance evaluation evolved from Donabedian's three areas for assessment: structure, process and outcome. Rotondi et al. proposed a conceptual framework based on the principle that process variables determine outcome and that performance variables reflect these outcome variables. Performance variables define complex relationships between many outcome variables. The performance variables identified are categorised into the following: appropriateness of care (when the patient's expected health benefits exceeded the expected health risks by a substantial margin exclusive of cost), effectiveness of care (the ability of an intervention to produce the desired beneficial effect in actual usage), efficiency of care (measure of the relationship of the cost of care associated with a specific level of performance) and customer needs fulfilment. A systematic approach of performance evaluation proposed by Provanost includes indicators in the following categories: outcome (mortality rates, length of stay, duration of mechanical ventilation, patient/family satisfaction), access (delays in ICU admissions and discharges, cancelled operations), complication rates (unplanned ICU readmissions, rates of catheter-related blood stream infections) and process measures (appropriate sedation, prevention of ventilator-associated pneumonia, appropriate use of blood products).

In summary, an integrated performance evaluation of ICUs must be objective, comprehensive, organised, transparent and transformative.

Management Of Post-Cardiac Arrest

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The 2010 ACLS Guidelines recommend a combination of goal-oriented interventions provided by an experienced multidisciplinary team for all cardiac arrest patients with return of spontaneous circulation (ROSC). Important objectives of post-cardiac arrest are:

- Optimizing cardiopulmonary function and perfusion of vital organs
- Managing acute coronary syndromes that includes acute cardiovascular interventions
- Implementing therapeutic hypothermia
- Implementing strategies to prevent and manage organ system dysfunction.

Attention should be directed to treating the precipitating cause of cardiac arrest after the ROSC. It is helpful to review the H's and T's mnemonic to recall factors that may contribute to cardiac arrest or complicate resuscitation or post-resuscitation care.

The induction of mild therapeutic hypothermia (target temperature 32 to 34°C) is beneficial in patients successfully resuscitated after a cardiac arrest. Induced hypothermia after successful resuscitation leads to one additional patient with intact neurological outcome for every 6 patients treated. One good randomized trial (HACA study group) and pseudo randomized trial (Australian study, Bernard et al) reported improved neurologically intact survival to hospital discharge when comatose patients without of hospital cardiac arrest (VF) were cooled for 12 or 24 hours. No RCTs have compared outcome between hypothermia and normothermia for non-VF cardiac arrest. Early prognostication of neurological outcome in comatose cardiac arrest survivors is an essential component of post cardiac arrest care. Poor outcome is defined as death, persistent unresponsiveness, or the inability to undertake independent activities after 6 months. Certain clinical criteria have been demonstrated to be reliable in identifying individuals with a very poor prognosis. Absent pupillary or corneal reflexes, or absent or only extensor motor responses of three days after cardiac arrest are invariably associated with a poor outcome. Potential confounding factors in the clinical assessment of patients in hypoxic ischemic coma include acute metabolic derangements (e.g. renal failure, liver failure and shock), the administration of sedative or neuromuscular agents, and induced-hypothermia therapy.

What's New In Monitoring In Severe Head Injury?

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Critical care management of severe traumatic head injury patients continues to be a great challenge in Malaysia. The two most important secondary injury processes that can be monitored, anticipated, and treated in the head injured patient are intracranial hypertension and cerebral ischemia. As such, the need for cerebral monitoring is absolutely essential for appropriate cerebral metabolic and haemo-dynamic management in the ICU.

THE METHODS OF CEREBRAL MONITORING ARE AS FOLLOWS:

1. ROUTINE MONITORING

Continuous monitoring of intracranial pressure (ICP) and cerebral perfusion pressure (CPP) has become a standard in neurointensive care of severe head injured patients. The intra-ventricular ICP monitoring through ventriculostomy continues to be the gold standard as it offers the reliable readings in ICP measurements and enables CSF drainage as a method of managing raised ICP.

In addition, head injured patients should have systemic parameters closely monitored, including ECG, heart rate, blood pressure, temperature, fluid intake and output. Routine monitoring of oxygen saturation and capnography is paramount in severely head injured patients so as to avoid unrecognized hypoxemia or changes in arterial carbon dioxide concentrations.

2. CEREBRAL PERFUSION AND CEREBRAL BLOOD FLOW MONIT

oring. The simplest measure of cerebral perfusion is the cerebral perfusion pressure (CPP) which is nothing but MAP-ICP. In addition, measurement of CBF through imaging techniques is of great help to the treating physicians. It provides important insights into the evolution of injury and also into the effects of treatments which may alter CBF such as hyperventilation. There is no ideal method for monitoring CBF in the ICU setting. Most methods produce non-quantitative measurements of physiological variables, which we assume are proportional to CBF. Despite the availability of many methods to measure CBF, not many are used routinely in patients with brain injuries.

3. MONITORING OF CEREBRAL ISCHEMIA

The ideal monitor for cerebral ischaemia after traumatic brain injury is yet to be invented. This ideal monitor would have the following properties, would give regional information about cerebral blood flow (CBF), since there can be marked regional differences in CBF after trauma. Also give continuous information, since CBF evolves over time after injury. The techniques that are available fall under two general categories, those that monitor cerebral perfusion or blood flow and those that monitor cerebral blood flow adequacy. Brain glucose and lactate levels can be monitored with the help of imaging modalities such as magnetic resonance and PET scanning. In addition, the ability to measure the concentration of metabolites in the extracellular space directly and continuously has become feasible with the application of cerebral microdialysis.

CONCLUSION

With rapid advancements in cerebral monitoring technology taking place, we hope to be able to incorporate multimodal neuro-monitoring techniques as the standard of care in major ICU's in Malaysia.

ORAL PRESENTATIONS

- OP1 **A Study On Incidence, Predictors And Management Of Hypophosphatemia In A Malaysian ICU**
M N Basri¹, J Janattul Ain², M R Azrina¹, M Hadi¹
¹International Islamic University Malaysia, Kuantan, Pahang, Malaysia
²Hospital Tengku Ampuan Afzan, Kuantan, Pahang, Malaysia 36
- OP2 **Impact Of An Intervention On Incidence Of Nosocomial Bloodstream Infection In Paediatrics Intensive Care Unit (PICU), University Malaya Medical Centre (UMMC)**
Ng Yun Yun, Lucy C S Lum, Alice Ho Man Mooi, Anis Siham, Gan Chin Seng
University Malaya Medical Centre, Kuala Lumpur, Malaysia 37
- OP3 **Retrospective Review Of Carbapenem Resistant *Acinetobacter* sp. Infection In Intensive Care Unit, Hospital Universiti Sains Malaysia (HUSM): Incidence, Risk Factors And Outcome**
Mohd Samsul P¹, W Mohd Nazaruddin W H², Mahamarowi O³, Zakuan Zainy D¹
^{1,2}Department of Anaesthesiology and Intensive Care, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia
³Department of Microbiology and Parasitology, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia 38
- OP4 **Vascular Pedicle Width As A Surrogate For Estimation Of Intravascular Volume In Ventilated Intensive Care Unit Patient**
Y Azura Sharena¹, L Mohd Fahmi², Y Rohaizan¹
^{1,2}International Islamic University Malaysia, Kuantan, Pahang, Malaysia
³Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia 39

ORAL PRESENTATION 1

A Study On Incidence, Predictors And Management Of Hypophosphatemia In A Malaysian ICU

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OBJECTIVES:

Hypophosphatemia is frequently encountered in the ICU and is associated with mortality rates up to 30%. Our objectives are to identify the incidence of hypophosphatemia and the associated risk factors. We also want to establish intravenous replacement therapy that is effective for ICU patients.

METHODS:

A prospective non-interventional study assessing adults admitted to ICU in between March and May 2009. Patients aged >18 years old were included; patients without baseline phosphate level and renal failure (\pm dialysis) were excluded. All patients were evaluated for the occurrence of common risk factors. Association with independent variables that includes age, gender and BMI were verified. Evaluation of IV replacement therapy was done in the treated patients. Statistically significant when p value <0.05.

RESULTS:

From 50 patients that were reviewed, nine were excluded. There were 66% male and 34% female with mean age 46.88 ± 17.89 . The mean ICU stay was 8.00 ± 6.41 days. The incidence of hypophosphatemia was 29% ($n=12/41$). Gender and creatinine clearance was found to be significantly different between normophosphatemia and hypophosphatemia patients. There was no significant association for each potential risk factor and the number of risk factors (≥ 3) with the incidence of hypophosphatemia. Multi-linear regression analysis showed that lactate levels, creatinine clearance and pH were significant predictors to the serum phosphate. A significant difference of mean serum phosphate levels were seen after repletion with IV phosphate by total dose of 10, 20 and 40 mmols in the treatment subgroups.

CONCLUSIONS:

The incidence of hypophosphatemia in our ICU was high and comparable to previous studies. None of the commonly reported risk factors is associated with hypophosphatemia in this studied population. Among all significant correlated variables, only pH was found to be a significant predictor for serum phosphate. Baseline phosphate level may guide the initial replacement dose to prevent delay in normalization of serum level in hypophosphatemia patients.

ORAL PRESENTATION 2

Impact Of An Intervention On Incidence Of Nosocomial Bloodstream Infection In Paediatrics Intensive Care Unit (PICU), University Malaya Medical Centre (UMMC)

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 University Malaya Medical Centre, Kuala Lumpur, Malaysia

OBJECTIVES:

1. To determine the impact of an intervention targeted at all house-officers posted to Department of Paediatrics on incidence of nosocomial BSI in PICU, UMMC
2. To determine the risk factors associated with PICU-acquired BSI

DESIGN:

This is a prospective cohort interventional study of patients admitted to PICU, UMMC from 1st January 2008 until 31st December 2009. BSI rate per 100 admissions and risk factors associated with BSI during baseline period (1st January 2008 – 31st October 2008) and interventional period (1st November 2008 – 31st December 2009) were determined.

INTERVENTIONS:

An intervention targeted at all house officers posted to Department of Paediatrics was started on 1st November 2008. House officers underwent a training course which involved education to increase the awareness of nosocomial infection and the demonstration of aseptic techniques of vascular access, followed by an evaluation to assess their competency of skill.

MEASUREMENT AND MAIN RESULTS:

There were 803 admissions during the study period. Twenty-six episodes of BSI (8.7/100 admissions) occurred during the baseline period. During the intervention period, the incidence of BSI fell to 3.6/100 admissions (18 episodes during the intervention period), a decrease of 59% ($p < 0.05$). Central venous and arterial catheters were risk factors associated with BSI during the baseline period but not during intervention period.

CONCLUSIONS:

An intervention targeted at house-officers resulted in a significant reduction of BSI rates. Central venous and arterial catheters were independent risk factors associated with PICU-acquired BSI during the baseline period.

ORAL PRESENTATION 3

Retrospective Review Of Carbapenem Resistant *Acinetobacter sp.* Infection In Intensive Care Unit, Hospital Universiti Sains Malaysia (HUSM): Incidence, Risk Factors And Outcome

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INTRODUCTION:

Acinetobacter sp. infection is a challenging problem in intensive care unit (ICU) because of its multi-resistant in nature to antibiotic therapy including broad spectrum carbapenem group. The aims of the study were to determine the incidence, risk factors and outcome of patients with carbapenem-resistant *Acinetobacter sp.* (CRAs) infection in our ICU.

METHODOLOGY:

This was a retrospective cohort study for 2 years from January 2008 to December 2009. The list of the patients was obtained from hospital nosocomial infection surveillance unit and ICU infection record. The data of the patients were subsequently reviewed from their respective medical records after approval from university ethics committee and HUSM medical record unit.

RESULTS:

A total of 92 patients were reviewed and only 54 were included and analyzed. The incidence of CRAs was 7.3%. Age was the only significant risk factor associated with CRAs (adjusted OR=1.045, 95% CI: 1.010, 1.081, $p = 0.011$). There were no significant association of other risk factors such as gender, APACHE II score, multi organ failure, co-morbidities, previous hospital and ICU stay. Mortality rate of this infection was 50%. Age was significantly different between survived and non-survived groups; 43.1 ± 21.1 vs. 57.1 ± 14.3 year old with $p = 0.006$. There were no significant differences between the two groups in other factors. There were also no significant differences in antibiotic treatment between the two groups.

CONCLUSIONS:

The incidence of CRAs was 7.3% with 50% of mortality rate. Age was the only significant risk factor.

ORAL PRESENTATION 4

Vascular Pedicle Width As A Surrogate For Estimation Of Intravascular Volume In Ventilated Intensive Care Unit Patient

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BACKGROUND:

Vascular pedicle width (VPW) is a measurement of the mediastinal silhouette of the great vessels on chest radiograph. It is measured by drawing a perpendicular line from the point at which the left subclavian artery emerges from the aortic arch and measured across to the point at which the superior vena cava crosses the right main bronchus. It is an objective and non-invasive alternative way to estimate intravascular volume status in ventilated ICU patients.

OBJECTIVE:

To determine the correlation of VPW with central venous pressure (CVP), cardiothoracic ratio (CTR) and cumulative net fluid balance in ventilated patient using supine portable chest radiograph.

METHODOLOGY:

Prospective, randomized study of one hundred and forty (140) adult patients whom were ventilated in the Intensive Care Unit. VPW, CVP, CTR and cumulative net fluid balance were correlated within one hour after chest radiograph taken. The relationship of VPW, CVP, CTR and net fluid balance were evaluated.

RESULTS:

Using multiple linear regression, there is a significant linear relationship between CVP and VPW ($P < 0.05$); those with CVP of 1 mmHg higher have VPW measurement wider for 0.24mm (95% CI: 0.058, 0.410 mm). There is a significant linear relationship between CTR and VPW ($P < 0.001$); those with 0.1 unit more in CTR have VPW measurement wider for 7.79mm (95% CI: 63.23, 92.64 mm). Using multiple linear regression, there is a significant linear relationship between cumulative net fluid balance and VPW ($P < 0.001$).

CONCLUSION:

VPW correlates well with CVP, CTR and net fluid balance which indicate it can be used to estimate intravascular volume status. VPW could be used concomitantly with other methods of intravascular assessment and also can be used as an alternative when the invasive monitoring is contraindicated.

POSTER PRESENTATIONS

- PP1 **Naegleria Meningitis An Extreme Challenge For Intensivists**
Khalid Samad, Muhammad Faisal Khan, Hameedullah
Department of Anaesthesia, Aga Khan University Hospital, Karachi, Pakistan 42
- PP2 **Maternal And Fetal Outcomes For Women With Heart Disease**
Asmah Zainudin, Rozaini Hassan, Saedah Ali, Mahamarowi Omar,
Nik Abdullah Nik Mohamad
¹*Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia*
²*Hospital Universiti Sains Malaysia, Kelantan, Malaysia* 42
- PP3 **Cerebral Salt Wasting From Aspirated Tooth In Head Trauma Patients: Case Reports**
Shiau Chuan Low¹, R Joshua Ryan¹, W L Lim¹, Shanthi Ratnam¹
¹*Department of Anaesthesiology and Intensive Care, Hospital Sungai Buloh, Selangor, Malaysia* 43
- PP4 **Decompressive Hemicraniectomy For Malignant Middle Cerebral Artery (MCA) Infarctions: A 3-Year Case Series In Sarawak General Hospital**
P C S Tan¹, H K Lee², M A Saman¹, N Esa¹
¹*Department of Anaesthesiology & Intensive Care, Sarawak General Hospital, Kuching, Sarawak, Malaysia*
²*Department of Neurosurgery, Sarawak General Hospital, Kuching, Sarawak, Malaysia* 43
- PP5 **Prevalence Of Ventilator Associated Pneumonia In Intensive Care Units, Hospital University Sains Malaysia**
I Kamaruddin¹, T T Lim², O Mohamarowi², D Zakuan Zaini¹
¹*Department of Anaesthesiology & Intensive Care, Universiti Sains Malaysia, Kubang Kerian, Kelantan, Malaysia* 44
- PP6 **The Effects Of On-Call Duties On Cognitive Functions Of Anaesthesia Residents**
Azila A, Wan Asim W A¹, Nik Azman N A¹
¹*Department of Anaesthesia and Intensive Care, Hospital Sultanah Nur Zahirah, Kuala Terengganu, Malaysia*
²*Department of Anaesthesia and Intensive Care, Hospital Universiti Sains Malaysia, Kelantan, Malaysia* 44

POSTER PRESENTATIONS

- PP7 **A Novel Method Of Treating Methamphetamine Withdrawal With Dexmedetomidine**
M Fadhil Hadi, Vineya Rai, K K Wong, Suresh Venu Gobal, M Shahnaz Hassan
University of Malaya, Kuala Lumpur, Malaysia 45
- PP8 **A Prospective Study Of Relationship Of Vascular Pedicle Width (VPW) In Adult Pulmonary Oedema Patients During Treatment In ICU**
A M Siti Aishah¹, Z Habibullah², N M Munirah¹, A Shafie¹, O Mahamarowi¹
¹*Department of Radiology¹, Department of Anaesthesiology¹, Hospital Universiti Sains Malaysia, Kelantan, Malaysia and Department of Anaesthesiology², Hospital Raja Perempuan Zainab II, Kelantan, Malaysia* 45
- PP9 **The Use Of Dexmedetomidine In Organophosphate Poisoning**
S Singh, Wong K K, V Rai V Suresh, Lucy Chan
University of Malaya, Kuala Lumpur, Malaysia 46
- PP10 **Clinical Characteristics And Outcome Of Melioidosis Requiring Intensive Care: A District Hospital Experience**
A Fazlina, M A Ahmad Afifi, J S Wong, C Goh
Hospital Bintulu, Sarawak, Malaysia 47
- PP11 **Sepsis And Cardiac Function In ICU**
Manohari Balasingam, Liyana Zainal Abidin, Vickneswary Thangadurai
Department of Medicine, Kajang Hospital, Kajang, Selangor, Malaysia 48
- PP12 **Use Of Physical Restraints In The Intensive Care Unit: The Nursing Perception**
Nahla Ismail, Anita Alias, Sivasakthi Velayuthapillai
Department of Anaesthesiology, Hospital Melaka, Melaka, Malaysia 49

POSTER PRESENTATION 1

Naegleria Meningitis an Extreme Challenge for Intensivists

Khalid Samad, Muhammad Faisal Khan, Hameedullah
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Infection in Intensive Care Unit is always a challenge for intensivists. Amebic meningitis (cause by *Naegleria fowleri*) is a rare but lethal entity. It is not an uncommon organism which ends up in hemorrhagic necrotizing infection of brain. *N. fowleri* is a heat loving amoeba that grows in tropical and subtropical climates. Infection is characterized by an acute fulminant meningoencephalitis leading to death in 3-7 days after exposure. Most of the sufferers are young persons who have history of recent water related activities. During the last one year, we have an incidence of four young patients with meningoencephalitis who had a short history of headache, fever and neck rigidity. They came from different parts of Karachi city. All admitted in intensive care after placement of endotracheal tube due to low GCS requiring mechanical ventilation. Their CSF wet mount shows the presence of *Naegleria* infestation. When CT scan was done it showed gross dilatation of ventricles and midline shift, one patient has coning as well. Amphotericin B with other adjunct was started but all patients became brain dead within two to three days of ICU admission. Clinical presentations, management choices, outcome and recommendations regarding the prevention of this disease will be discussed.

POSTER PRESENTATION 2

Maternal And Fetal Outcomes For Women With Heart Disease

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²Hospital Universiti Sains Malaysia, Kelantan, Malaysia

OBJECTIVES

To determine the association between cardiac risk and maternal and fetal outcomes in pregnancy with heart disease.

METHODOLOGY:

In this retrospective study, 219 patient's data were collected from HUSM database between 2000 and 2007. Secondary data was randomly assigned and filled in data extraction form. Binary regression test were used to look for association of cardiac risk and complications.

RESULTS:

Primary cardiac events complicated 12.3% of ongoing pregnancies with pulmonary edema and heart failure in 6.8%, sustained arrhythmias 3.7%, cardiac arrest 0.5% and cardiac death in 1.8%. Univariate risk factors included prior arrhythmias (odds ratio [OR], 9.25), history of heart failure (OR, 6.26), NYHA functional class >2 (OR, 0.013) and severe pulmonary regurgitation (OR, 4.48). Adverse neonatal outcomes occurred in 11.4% of pregnancies with low Apgar score deliveries 9.1%, preterm deliveries 8.2% and mean birth weight 2.85±0.6 kg. A univariate risk factors for neonatal adverse outcomes included NYHA functional class >2 (OR, 0.056) and pulmonary hypertension (OR, 10.21).

CONCLUSION:

In this study, maternal and neonatal adverse event are significant in pregnancy with heart disease. Patient with poor functional capacity, severe mitral stenosis and pulmonary regurgitation are at risk for adverse cardiac events. A multidisciplinary approach and careful surveillance with genetic counseling is recommended for women with heart disease whom had been pregnant.

POSTER PRESENTATION 3

Cerebral Salt Wasting From Aspirated Tooth In Head Trauma Patients: Case Reports

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Tooth avulsion is a common complication of maxillofacial trauma. Tooth aspiration in a segmental bronchus in a mechanically ventilated patient can be missed especially when ventilation difficulty is not apparent. Nevertheless prompt recognition and removal of an airway foreign body is essential to prevent potentially hazardous complications of segmental lung collapse, pneumonia or lung abscess.

Here we describe two cases of delayed diagnosis of aspirated front incisor in ventilated traumatic brain injury patients which remained inconspicuous until the development of persistent cerebral salt wasting triggered by airway foreign body induced lung infection, which subsequently settled after flexible fiberoptic bronchoscopic extraction of the offending agent.

This paper emphasizes that emergency and intensive care clinicians must be aware of dental injury resulting from maxillofacial injuries and include oral inspection as part of their evaluation. Clinical signs of tooth aspiration are often subtle and admission chest radiographs should be carefully scrutinized to account for any missing tooth.

POSTER PRESENTATION 4

Decompressive Hemicraniectomy For Malignant Middle Cerebral Artery (MCA) Infarctions: A 3-Year Case Series In Sarawak General Hospital

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INTRODUCTION

Space-occupying cerebral oedema following MCA infarctions is devastating with mortality up to 80% following medical treatment alone. Pooled analyses of three European randomized controlled trials (DECIMAL, DESTINY and HAMLET) demonstrated an early hemicraniectomy leads to a substantial reduction in mortality and is likely to improve functional outcome. We studied the clinical characteristics and outcomes of consecutive cases of malignant MCA infarctions subjected to decompressive surgery in our centre.

METHODS

The patients were retrospectively identified via COTDS from 2008 to 2010. Their medical charts were reviewed. Outcomes were measured with Modified Rankin Scale (mRS) score at three months. The mRS is a seven-point functional disability scale where 0 means no neurologic symptoms whereas 6 means death. Those patients with prestroke mRS scores of ≥ 2 were excluded.

RESULTS

A total of 12, predominantly male patients were recruited. Their mean age was 52.3 ± 8.69 years. Seven of them had multiple co-morbidities. The median GCS score prior to surgery was 8 (6.3-11.3). Nine patients showed anisocoria whereas almost all demonstrated radiological evidence of midline shifts. In addition, four patients had concurrent ischaemia of the anterior or posterior cerebral artery. The mean time window from stroke onset to surgery start was 42.4 ± 25.21 hours. The mortality was 66.7%, more than two-folds reported in surgical group of the pooled analyses (29%). Only four patients survived but all of them reached mRS scores of 5 (severe disability).

CONCLUSION

Only a very small number of survivors were found in our case-series. Those who survived were severely disabled too. A structured in-house clinical protocol involving multidisciplinary should be deployed to improve outcome. Selection of patients for surgery should be individualized. Quality of life and caregiver burden should also be considered and adequately discussed with their next of kin.

POSTER PRESENTATION 5

Prevalence Of Ventilator Associated Pneumonia In Intensive Care Units, Hospital University Sains Malaysia.

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VAP is a common complication of patient who are receiving mechanical ventilation. This study aims to provide background prevalence, consequences and risk factors of VAP in HUSM.

This was an observational study conducted in ICU HUSM. Patients were reviewed for background and interventional risk factors, length of stay and outcome. The study was conducted from January until December 2009.

A total of 194 patient fulfilled inclusion criteria and was followed up until discharge from ICU. Mean age of ICU patient was 47.53 years and mean duration of stay was 10.94 days. It was found that the VAP rate per 1000 ventilator days were higher than global VAP rates (19.57 days). DM poses additional risk for developing VAP with OR 1.073. Additionally intervention risk factor transfer out of ICU (OR 1.042) and continuous sedation (OR 2.978) were statistically significant ($p < 0.05$) for VAP development. *Acinobacter sp.* was found to be dominant pathogen from BAL of VAP patient

VAP rates in HUSM was found to be significantly higher than global rates. VAP lead to increase length of stay and is associated with DM, transfer out of ICU and continuous sedation. The main pathogen involved in HUSM VAP was *Acinobacter sp.*

POSTER PRESENTATION 6

The Effects Of On-Call Duties On Cognitive Functions Of Anaesthesia Residents

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Cognitive functions play a vital role in safe anaesthetic and critical care practice and there are various factors that affect the cognitive functions. The aim of this study is to determine the effects on cognitive functions of anaesthesia residents doing on-call duty and to compare between demographic factors and on-call features (type, duration, role and time of on-call) with cognitive functions. This study was done in a Department of Anaesthesiology of a teaching hospital. Four cognitive tests were used: Mini Mental State Examination (MMSE), Stroop Color Word Test (SCWT), Concentration Test (CT) and Reaction Time Test (RTT). Other factors affected by on-call such as sleepiness, how busy and stress were also measured using Stanford Sleepiness Scale (SSS), Busy Score (BS) and Psychological Stress Score (PSY). There were 45 respondents to the study. Most of the anaesthetist residents (82.2%) were in the middle age group (30-39 year-old) with working experiences in anaesthesia between 5-10 years (66.7%). The main type of on-call duty was ICU call (46.7%). Most of the anaesthesia residents (60.0%) scored moderate in SSS, PSY and (62.2%) BS. The relationship between the three groups score (SSS, PSY and BS) with various demographic data and on-call features were not significant ($p > 0.05$). There were significant decreased in cognitive test post-call in SCWT ($p = 0.011$) and CT ($p = 0.001$). However, there was no significant difference between various demographic data, on-call features and all three score groups (SSS, PSY and BS) with cognitive functions ($p > 0.05$). There were significant correlation between SSS, PSY and BS ($p = 0.011$). We conclude that the cognitive functions of anaesthesia residents particularly in SCWT and CT were significantly altered after on-call duties regardless of on-call features or their score for SSS, PSY and BS.

POSTER PRESENTATION 7

A Novel Method of Treating Methamphetamine Withdrawal with Dexmedetomidine

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Substance abuse often causes a major burden to the Malaysian health care system. Internationally, the most widely abused illicit drug is cannabis followed, according to region, by amphetamine or cocaine. Retrospective studies of methamphetamine users identified a wide range of withdrawal symptoms and these symptoms complicate the care of critically ill patients. Up until today, we know very little about the treatment of methamphetamine withdrawal as there are limited numbers of studies or protocol available. Various agents such as opioids, benzodiazepines and antipsychotics have been used and described but no standardized treatment plan has been approved. We report a case of a 19 years old man with chronic history of methamphetamine abuse presenting with an overdose of the substance. In the A&E department, he was semicomatose, acidotic with acute kidney injury requiring resuscitation and mechanical ventilation in the ICU. His recovery was made difficult as he developed significant withdrawal symptoms manifested by agitation and restlessness. Various combination infusions of midazolam, morphine, propofol, fentanyl, oral lorazepam and oral haloperidol used failed to treat his agitation. Finally infusion of dexmedetomidine at 0.7mcg/kg/min was started and patient settled and was weaned off all other sedatives in 72 hours. A tracheostomy performed during this time also enabled him to be successfully liberated from the ventilator. The use of dexmedetomidine as treatment of ICU agitation and restlessness secondary to methamphetamine withdrawal is advantageous but more studies should be done to make it into a standardized protocol treatment.

POSTER PRESENTATION 8

A Prosspective Study Of Relationship Of Vascular Pedicle Width (VPW) In Adult Pulmonary Oedema Patients During Treatment In ICU

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PURPOSE OF STUDY

To compare the mean change in VPW, cardiothoracic ratio (CTR) and net fluid balance by using serial portable chest radiographs in adult pulmonary oedema patients during treatment in ICU between day 1 to day 2 and day 2 to day 3.

MATERIAL AND METHOD

A prospective study involving 51 pulmonary oedema patients diagnosed by physician in ICU HUSM. Serial portable chest radiographs were taken from day 1 of the onset of pulmonary oedema in ICU until day 3 consecutively. First chest radiograph was taken before starting treatment (treatments were intravenous Frusemide and/ or dialysis). Three 24 hours net fluid balance data were taken from ICU monitoring chart. Computed chest radiograph is used for evaluation of the VPW and CTR.

RESULT

Significant mean changes of VPW and net fluid balance between day 1 to day 2 and day 2 to day 3 ($p < 0.001$). No significant mean changes of CTR seen between day 1 to day 2 and between day 2 to day 3 ($p = 0.58$). Daily reduction seen in the mean of VPW and net fluid balance in 3 days duration with IV Frusemide and combination treatment. However, no significant difference between both treatments with the mean of VPW ($p = 0.099$) and net fluid balance ($p = 0.162$) in 3 days period.

CONCLUSION

Serial measurement of VPW is proven to be very important in monitoring volume overload patient besides computed chest radiograph is easily available, less cost and non invasive tool that should be optimize the usage in critically ill patient.

POSTER PRESENTATION 9

The Use Of Dexmedetomidine In Organophosphate Poisoning

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BACKGROUND

Organophosphate are agents that inhibit the action of acetylcholinesterase (AChE) in nerve cells. By inhibiting acetylcholinesterase, excess acetylcholine is produced, resulting in increased salivation, lacrimation, bronchorrhoea, bradycardia, emesis and miosis among others. Organophosphate poisoning is usually treated with atropine in conjunction with controlled ventilation and sedation if required. Dexmedetomidine is an alpha 2 agonist that is used clinically for sedation.

METHODOLOGY

A 27 years old male presented to our hospital after being brought in by ambulance. He was found unconscious at home. He was intubated and ventilated due to low GCS and was diagnosed to have organophosphate poisoning based on history and clinical findings. His serum cholinesterase was low and atropine infusion was commenced. He was subsequently ventilated and sedated in ICU. He improved and was extubated on day 7 of ventilation. However he was reintubated not long after due to bronchorrhoea and CO₂ narcosis. He was subsequently started on dexmedetomidine at 0.6 microgram per kg per hour on day 8. His atropine infusion was continued and we noted there was less secretions from the endotracheal tube. His atropine dose was gradually reduced with no bradycardic episode. He was successfully extubated on day 12 of ventilation and was discharged from ICU the subsequent day. He made full recovery and was discharged from hospital on day 16.

CONCLUSION

Dexmedetomidine use in conjunction with atropine was found to be useful in decreasing secretions without any bradycardic episode in this case. We are of the opinion that dexmedetomidine maybe a useful adjunct in the management of organophosphate poisoning due to its secretions drying effect. This warrants further investigations.

POSTER PRESENTATION 10

Clinical Characteristics and Outcome of Melioidosis Requiring Intensive Care: A District Hospital Experience

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Melioidosis is an infection with gram negative bacterium *Burkholderia pseudomallei* and is an important public health problem causing community acquired sepsis in South East Asia and north Australia. The calculated annual incidence of melioidosis in Malaysia varies from around 6.0 per 100,000 per year to 16.35 per 100,000 population per year for adult population depending on region. The mortality rate is high, up to 65% in patients with pneumonia and culture positive, with many patients died in intensive care units (ICU).

STUDY OBJECTIVE :

To describe clinical characteristics and outcome of patients with culture confirmed melioidosis requiring ICU admission.

METHODS:

From January 2009 to May 2010, 24 adult patients had microbiologically documented melioidosis. Among these, we embarked on a retrospective analysis of 12 cases admitted to ICU.

RESULTS :

The median age of patient was 40 years old, with 58.7% of patients having no comorbidity. Six of the cases were detected in 2011, indicating the cases have increased substantially, most likely due to improvement in isolating the organisms. Almost all patients had pneumonia (91.7%) and the major reason for ICU admission was respiratory failure (83.3%). All patients had at least 2 organ dysfunction including renal failure and the median APACHE II score was 22. The median ICU length of stay was 3 days. Two of the patient had splenic abscess and one of the patient had both liver and spleen abscess. Four of the culture isolates showed resistance to Meropenem. There were no survivors in our case series.

CONCLUSIONS:

The outcome of melioidosis requiring intensive care in Hospital Bintulu is grave with death followed each culture positivity.

POSTER PRESENTATION 11

Sepsis And Cardiac Function In ICU

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Septicemia is among the most important causes of morbidity and mortality in patients admitted to the intensive care unit (ICU).

OBJECTIVES OF THE STUDY

To assess the cardiac function in patients with septicemia in our local setting in a district hospital.

METHODS

A prospective study was conducted on all patients with sepsis admitted to hospital ICU during a 2 week period in May 2011. Exclusion criteria for the study was patients with known underlying cardiac pathology (ischaemic, valvular and cardiomyopathy), pregnancy, HIV positive, malignancy and age above 65 years.

Portable transthoracic echocardiography was performed and significant pathology, contractility, left ventricular end diastolic parameters, right ventricular function, diastolic function and cardiac index assessed.

RESULTS

A total of 6 patients were analysed. All were mechanically ventilated. Only 1 patient was on inotrope infusion therapy with low blood pressure. Fifty percent had reduced contractility. Left ventricular end diastolic volume was increased in 50% of patients. Two patient had impaired right ventricular function. Diastolic function was normal in all patients. Cardiac index was reduced in all 6 patients.

Five patients survived and 1 died.

Of the patients who survived, the average length of stay in ICU was 6 days.

Study limitation: The number of patients was small with short duration of study

CONCLUSION

There was evidence of cardiac dysfunction in septicemic patients in our local setting in ICU. Further evaluation needs to be done in a larger study population to understand the underlying mechanisms responsible and for future targeted therapy.

POSTER PRESENTATION 12

Use of Physical Restraints in the Intensive Care Unit:
The Nursing Perception

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OBJECTIVES

Physical restraints are commonly used in the intensive care setting. The widely documented reason for using restraints is to prevent disruption in care. Therefore we would like to assess the nurses' perception on the use of restraints in our unit.

METHOD

60 questionnaires were handed out to nurses in the intensive care units, Mawar and Orkid. 52 nurses responded. The questions were in Bahasa Malaysia and were based on observation of current restraining practice with partial modification of the existing 'Perceptions of Restraint Use Questionnaire (PRUQ). The questionnaires addressed nurses' perception on: a) reasons for patients being restrained, b) contributing factors to restraint, c) complications and, d) possible ways to curb use of restraints. A scale of 1 to 5 was used for each question to grade nurses' responses.

RESULTS

Most important reasons for patients being restrained were to prevent them from falling off the bed (100%), dislodging of endotracheal tube (92.3%) and central venous line (63.5%). 73.1% of the nurses felt that inadequate staffing was the most important reason contributing to the use of restraint. 61.5% worried about restraint complications and the family's feelings when patients were restrained; but only 34.6% were concerned about the patients' emotion most of the time. 76.9% of the nurses felt that daily evaluation of the need for restraint, is the most effective way to curb restraint being used routinely.

CONCLUSIONS

Generally, the nurses were aware of the negative perceptions that family may have when their relatives were restrained. However, only one third of the nurses thought about the patients' own feeling. Currently, we have no local data on the practice of using restraints. A prevalence study on the use of restraints in our setting may help us to develop guidelines to facilitate nurses on restraint usage when indicated only.