

Fri. Mar 1, 2019

第11会場

TSCCM-JSICM Symposium

**[TJS1] TSCCM-JSICM Symposium1****Ethics and end of life**

Chair: Hidenobu Shigemitsu (Tokyo Medical and Dental University, Department of Intensive Care Medicine, Japan), Dusit Staworn (Phramongkutklao College of Medicine, Thailand)  
10:20 AM - 11:20 AM 第11会場 (国立京都国際会館1F Room C-2)

**[TJS1-1] Ethical conflicts in ICU Thailand**

Dusit Staworn (Phramongkutklao College of Medicine, Thailand)

**[TJS1-2] Ethical conflicts in ICU Japan**

Yasuhiro Norisue (Division of Critical Care Medicine, Tokyo Bay Urayasu Ichikawa Medical Center, Japan)

**[TJS1-3] Communication of palliative care in ICU:**

Listening to patient and family members of ICU patients

Chantana Morkchareonpong (National Cancer Institute of Thailand, Department of Medical Service, Ministry of Public Health, Thailand)

**[TJS1-4] Whose life is it, and who makes the choice between life and death?**

Arino Yaguchi (Department of Critical Care and Emergency Medicine, Tokyo Women's Medical University, Japan)

TSCCM-JSICM Symposium

**[TJS2] TSCCM-JSICM Symposium2****ECMO training**

Chair: Shigeki Fujitani (Emergency and Critical Care Medicine, St. Marianna University, Japan), Suneerat Kongsayreepong (Department of Anesthesiology, Siriraj Hospital, Mahidol University, Thailand)  
11:25 AM - 12:25 PM 第11会場 (国立京都国際会館1F Room C-2)

**[TJS2-1] ECMO: Our experience in Thailand**

Suneerat Kongsayreepong (Department of Anesthesiology, Siriraj Hospital, Mahidol University, Thailand)

**[TJS2-2] Development of ECMO, experience in Japan**

Shingo Ichiba<sup>1</sup>, Toshiyuki Aokage<sup>2</sup>, Ichiro Takeuchi<sup>3</sup>, Satoshi Nakagawa<sup>4</sup>, Shinhiro Takeda<sup>5</sup> (1. Department of Surgical Intensive Care Medicine, Nippon Medical School Hospital, Japan, 2. Okayama University Hospital, Department of Emergency and Critical Care Center, Japan, 3. Department of Emergency Medicine, Yokohama City University School of Medicine, Japan,

4. Department of Critical Care and Anesthesia, National Center for Child Health and Development, Japan, 5. Kawaguchi Cardiovascular and Respiratory Hospital, Japan)

**[TJS2-3] Initiating ECMO training program in Thailand**

Sunthiti Morakul (Department of Anesthesiology, Ramathibodi Hospital, Mahidol University, Thailand)

**[TJS2-4] ECMO training program in Japan**

Tomoyuki Endo<sup>1</sup>, Shinichiro Oshimo<sup>2</sup> (1. Division of Emergency and Disaster Medicine, Tohoku Medical and Pharmaceutical University, Japan, 2. Hiroshima University Emergency and Critical Care medicine, Japan)

TSCCM-JSICM Symposium

**[TJS3] TSCCM-JSICM Symposium3****Mechanical ventilation**

Chair: Toru Kotani (Department of Intensive Care Medicine, Showa University, Japan), Adisorn Wongsak (Phramongkutklao Hospital, Thailand)  
3:10 PM - 4:25 PM 第11会場 (国立京都国際会館1F Room C-2)

**[TJS3-1] Weaning from mechanical ventilation in ARDS**

patients : Does automated weaning make our lives easier?

Tomomi Ueda (The Department of Anesthesiology, Keio University School of Medicine, Japan)

**[TJS3-2] Mechanical ventilation in ARDS**

Adisorn Wongsak (Phramongkutklao Hospital, Thailand)

**[TJS3-3] Spontaneous breathing in ARDS**

Takeshi Yoshida (The Department of Anesthesiology and Intensive Care Medicine, Osaka University Graduate School of Medicine, Japan)

**[TJS3-4] Trouble shooting in mechanical ventilation**

Boonsong Patjanasontorn (Division of Pulmonary and Critical Care Medicine, Department of Medicine, Khon Kaen University, Thailand)

**[TJS3-5] Biomarkers may predict outcomes in pediatric ARDS**

Satoshi Nakagawa<sup>1</sup>, Tho Bui<sup>2</sup>, Phuc Phan Huu<sup>2</sup>, Akira Aina<sup>3</sup>, Ikuyo Takayama<sup>3</sup>, Tadaki Suzuki<sup>3</sup>, Thuy Phung<sup>2</sup>, Huong Do Thu<sup>2</sup>, Hai Le Thanh<sup>2</sup>, Noriko Nakajima<sup>3</sup> (1. National Center for Child Health and Development, Japan, 2. National Children's Hospital, Vietnam, 3. National Institute of Infectious Diseases, Japan)

TSCCM-JSICM Symposium

## [TJS4] TSCCM-JSICM Symposium4

### Perioperative critical care

Chair: Moritoki Egi (Department of Anesthesiology, Kobe University Hospital, Japan), Sahadol Poonyathawon (Department of Anesthesiology, Chulalongkorn University, Thailand)

4:30 PM - 5:45 PM 第11会場 (国立京都国際会館1F Room C-2)

#### [TJS4-1] How to start up surgical ICU by internal physician intensivist

Go Haraguchi<sup>1</sup>, Chieko Mitaka<sup>2</sup>, Koichi Matsuo<sup>3</sup>,  
Takumi Nagao<sup>1</sup>, Katsuaki Otsuki<sup>4</sup>, Morimasa Takayama<sup>5</sup>,  
Mitsuaki Isobe<sup>5</sup> (1.Division of Intensive Care Unit,  
Sakakibara Heart Institute, Japan, 2.Department of  
Anesthesiology, Juntendo University Hospital, Japan,  
3.Division of Intensive Care Unit, New Tokyo Hospital,  
Japan, 4.Division of Intensive Care Unit, Tsuchiura  
Kyodo General Hospital, Japan, 5.Department of  
Cardiovascular Medicine, Sakakibara Heart Institute,  
Japan)

#### [TJS4-2] Perioperative fluid therapy

Sahadol Poonyathawon (Department of  
Anesthesiology, Chulalongkorn University, Thailand)

#### [TJS4-3] Perioperative nutrition therapy

Kaweesak Chittawatanarat (Department of Surgery,  
Chiang Mai University, Thailand)

#### [TJS4-4] Perioperative respiratory management

Kiyoyasu Kurahashi (Department of Anesthesiology  
and Intensive Care Medicine, International University of  
Health & Welfare School of Medicine, Japan)

#### [TJS4-5] Prevention of perioperative AKI

Kent Doi (Department of Acute Medicine, The  
University of Tokyo, Japan)

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TSCCM-JSICM Symposium

## [TJS1] TSCCM-JSICM Symposium1

### Ethics and end of life

Chair: Hidenobu Shigemitsu (Tokyo Medical and Dental University, Department of Intensive Care Medicine, Japan), Dusit Staworn (Phramongkutklao College of Medicine, Thailand)

Fri. Mar 1, 2019 10:20 AM - 11:20 AM 第11会場 (国立京都国際会館1F Room C-2)

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#### [TJS1-1] Ethical conflicts in ICU Thailand

Dusit Staworn (Phramongkutklao College of Medicine, Thailand)

#### [TJS1-2] Ethical conflicts in ICU Japan

Yasuhiro Norisue (Division of Critical Care Medicine, Tokyo Bay Urayasu Ichikawa Medical Center, Japan)

#### [TJS1-3] Communication of palliative care in ICU: Listening to patient and family members of ICU patients

Chantana Morkhareonpong (National Cancer Institute of Thailand, Department of Medical Service, Ministry of Public Health, Thailand)

#### [TJS1-4] Whose life is it, and who makes the choice between life and death?

Arino Yaguchi (Department of Critical Care and Emergency Medicine, Tokyo Women's Medical University, Japan)

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(Fri. Mar 1, 2019 10:20 AM - 11:20 AM 第11会場)

## [TJS1-1] Ethical conflicts in ICU Thailand

Dusit Staworn (Phramongkutklao College of Medicine, Thailand)

【ライブ配信】

Ethical conflicts in the ICU setting usually center around the question of how to respond to requests from the patient or the surrogates to administer life-prolonging interventions when clinicians believe those interventions should not be administered. Ethical conflicts facing attending physicians in the ICU in Thailand are not different from other countries. Thai ICU physicians usually take proactive approach to prevent the conflict via deliberate family meetings to prevent breaking down in communication. The clear goals of deliberate family meetings are seeking first to understand the family's perspective, trying to correct any misperceptions, and share the ICU physician's perspectives with family members. The consensus among attending consultants are usually achieved before ICU physician leads the discussion with the family members. In difficult cases where there're different opinions among family members, Thai physicians usually take times to communicate and advocate for the treatment plan they believe is appropriate while listening attentively to each family members to reconcile the different treatment plans. Family members or surrogates are strongly encouraged to spend times with the patient during these processes to help them understand the sufferings that the patient has endured. It has not been a common practice for Thai physicians to bring the ethical conflict cases for review by an interdisciplinary hospital committee or to the court.

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(Fri. Mar 1, 2019 10:20 AM - 11:20 AM 第11会場)

## [TJS1-2] Ethical conflicts in ICU Japan

Yasuhiro Norisue (Division of Critical Care Medicine, Tokyo Bay Urayasu Ichikawa Medical Center, Japan)

【ライブ配信】

Because of the cultural background and lack of physician education on ethics in Japan, medical teams are frequently confronted with difficult decision makings in daily practice. This presentation addresses ethical conflicts in Japan and suggests possible solutions for the conflicts.

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(Fri. Mar 1, 2019 10:20 AM - 11:20 AM 第11会場)

## [TJS1-3] Communication of palliative care in ICU: Listening to patient and family members of ICU patients

Chantana Morkchareonpong (National Cancer Institute of Thailand, Department of Medical Service, Ministry of Public Health, Thailand)

【ライブ配信】

The communication is essential and core component of Advance Care Plan in ICU, especially in the end of life decision-making. Key communication strategies include establishing context, acknowledging through attentive listening, making it safe for them to die, planning goals of care, and being honest. Intensive Care team and healthcare professional must be discuss the prognosis, symptom control, goal of care and decision making with patient and family center/preference. So they can help to be support and empathic with

reflective feeling, emotional of patient and family until at the end of life care and bereavement phase. Advance Care Planning discussion about end of life can be heart-wrenching, painful, and difficult for patients, families, and health care professionals. In the intensive care unit, several barrier of end of life conversations are logistics, inadequate communication, time, and education on the circumstance/condition, and difference of culture. The difference of patient and family preference leading to futile care or palliative care. The aim of this condition is to present palliative care as a reasonable option to support the intensive care unit team in assisting terminally ill patients. Updates regarding diet, mechanical ventilation and dialysis in these patients will be presented. Additionally, the hospice-model philosophy as an alternative to the intensive care unit/hospital environment will be discussed. If they can not make the decision, team should consult to biomedical ethic team due to avoid the conflict of interest between patient/family and intensive care team.

The **COMFORT model** is the essential for discussion at end of life communication.

**C : communication** via a narrative clinical stance identifies the importance of clarity in verbal language along with the use of nonverbal techniques.(leaning forward and eye contact)

**O : Orientation and opportunity** include knowing the patient and family' s health literacy and incorporating the patient and family' s cultural background in the delivery of information.

**M : Mindful communication** is active and empathic listening, it is a willingness to be present and attuned to the patient and family' s suffering.

**F : Family** and the patient are intertwined, so caregivers should understand the conversation and conformity patterns within all families.

**O : Openings** often occur during pivotal moments; through communication strategies, nurses assist patients and families in managing these situations.

**R : Relating** entails acknowledging that patients and families need time to accept the diagnosis and prognosis.

**T : Team** demonstrates the interprofessional group composition and skillset needed in the provision of high quality palliative care and end-of-life care.

Also the intensive care team should be empathic expression and compassionate care for patients and families.

The **NURSE tool** guide in verbal expressions of **Empathy**.

**Naming** : State your observation of the patient' s emotion.

**Understanding** : Legitimize the patient' s emotion.

**Respecting** : Praise or acknowledge the patient' s work.

**Supporting** : Let the patient know she is not alone.

**Exploring** : Ask the patient to elaborate on her feelings.

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(Fri. Mar 1, 2019 10:20 AM - 11:20 AM 第11会場)

## [TJS1-4] Whose life is it, and who makes the choice between life and death?

Arino Yaguchi (Department of Critical Care and Emergency Medicine, Tokyo Women' s Medical University, Japan)

【ライブ配信】

The history of end-of-life care in intensive care medicine settings began in the 1950s with the first use of positive-pressure mechanical ventilators for treatment rather than anesthesia. The 1960s saw the choice by the much-criticized “ God Committee” in Seattle regarding which patients should receive dialysis

treatment and arguments about the definition of death from the perspective of transplant medicine, and bioethics became an established academic field. In the 1970s, the Karen Quinlan trial led to a rise in interest among the general public concerning the fact that the lives of patients in a vegetative state were being maintained mechanically, and in the same decade, the Japan Euthanasia Association was founded. In 1974, the Journal of the American Medical Association published ‘Orders not to resuscitate,’ and in 1976, the New England Journal of Medicine published a report on the four systems of optimum care for hopelessly ill patients in Massachusetts General Hospital. The term “terminal weaning” was introduced in 1983 in Critical Care Medicine. The period between 1990 and 2000 saw the publication of numerous studies on end-of-life care in the ICU, and in 2003, an International Consensus Conference involving the European Society of Intensive Care Medicine, the American Thoracic Society, and the Society of Critical Care Medicine was held on the theme ‘Challenges in end-of-life care in the ICU.’ This brought to light differences between the end-of-life care provided in ICUs in Europe and the United States. In Japan, in 2007, the Ministry of Health, Labour and Welfare issued ‘Guidelines’ in 2012, a cross-party group of legislators proposed a law on dying with dignity. In 2014, the Japanese Circulation Society, the Japanese Association for Acute Medicine, and our own society jointly published ‘Guidelines on End-of Life Care in Acute and Intensive Care,’ and in combination with the increasing aging of the population, more opportunities arose for members of the public to consider or become interested in the issue of life-extending treatment. In other countries, however, laws have been passed on dying with dignity and assisted suicide, and fierce debate is underway within the countries and states where such laws are in effect. The reality is that this is still a troubling issue in ICU settings. The problems that arise in everyday clinical practice relate not only to the legal issue of whether doctors might face criminal prosecution and issues of the distribution of medical resources, but also to the ethical issues of the right of patients to make their own decisions and respect for dignity and way of life, and extend further to the philosophical question of the nature of life and death itself. I intend to compare Western mind– body dualism with Oriental mind– body unity in the context of the historical background and end-of-life care in other countries, and to discuss life and death with intensivists in Thailand.

## [TJS2] TSCCM-JSICM Symposium2

### ECMO training

Chair: Shigeki Fujitani (Emergency and Critical Care Medicine, St. Marianna University, Japan), Suneerat Kongsayreepong (Department of Anesthesiology, Siriraj Hospital, Mahidol University, Thailand)

Fri. Mar 1, 2019 11:25 AM - 12:25 PM 第11会場 (国立京都国際会館1F Room C-2)

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#### [TJS2-1] ECMO: Our experience in Thailand

Suneerat Kongsayreepong (Department of Anesthesiology, Siriraj Hospital, Mahidol University, Thailand)

#### [TJS2-2] Development of ECMO, experience in Japan

Shingo Ichiba<sup>1</sup>, Toshiyuki Aokage<sup>2</sup>, Ichiro Takeuchi<sup>3</sup>, Satoshi Nakagawa<sup>4</sup>, Shinhiro Takeda<sup>5</sup>

(1. Department of Surgical Intensive Care Medicine, Nippon Medical School Hospital, Japan,

2. Okayama University Hospital, Department of Emergency and Critical Care Center, Japan,

3. Department of Emergency Medicine, Yokohama City University School of Medicine, Japan,

4. Department of Critical Care and Anesthesia, National Center for Child Health and Development, Japan, 5. Kawaguchi Cardiovascular and Respiratory Hospital, Japan)

#### [TJS2-3] Initiating ECMO training program in Thailand

Sunthiti Morakul (Department of Anesthesiology, Ramathibodi Hospital, Mahidol University, Thailand)

#### [TJS2-4] ECMO training program in Japan

Tomoyuki Endo<sup>1</sup>, Shinichiro Oshimo<sup>2</sup> (1. Division of Emergency and Disaster Medicine, Tohoku Medical and Pharmaceutical University, Japan, 2. Hiroshima University Emergency and Critical Care medicine, Japan)

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(Fri. Mar 1, 2019 11:25 AM - 12:25 PM 第11会場)

## [TJS2-1] ECMO: Our experience in Thailand

Suneerat Kongsayreepong (Department of Anesthesiology, Siriraj Hospital, Mahidol University, Thailand)

【ライブ配信】

Extracorporeal life support (ECLS) or Extracorporeal membrane oxygenator (ECMO) is one of the important cardiopulmonary life supports in cardio or pulmonary failure patient who does not response to conventional medical management. This organ support was firstly introduced in Thailand for cardiovascular support along with the artificial heart after cardiac surgery. Then venovenous (VV) ECMO was gradually been used for patients with severe respiratory failure who did not response to conventional medical therapy including the use of extracorporeal CO<sub>2</sub> removal, and the combination of ECMO system with renal replacement therapy (RRT) or blood purification in septic shock patient.

With the complex of ECMO systems, several ECMO meetings were organized in Thailand including practice stations. Currently more and more ECMO supports had been use in medical school and private hospitals including ECMO in cardiac arrest patients (ECMO CPR) and the use of ECMO during transported these patients to medical centers for definite organ supports such as organ transplantations. With the high cost and complications associated with these organ support, the ECMO support in Thailand is still be in the learning period, slow growing in number and is reviewing by the government for reasonable reimbursement.

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(Fri. Mar 1, 2019 11:25 AM - 12:25 PM 第11会場)

## [TJS2-2] Development of ECMO, experience in Japan

Shingo Ichiba<sup>1</sup>, Toshiyuki Aokage<sup>2</sup>, Ichiro Takeuchi<sup>3</sup>, Satoshi Nakagawa<sup>4</sup>, Shinhiro Takeda<sup>5</sup> (1.Department of Surgical Intensive Care Medicine, Nippon Medical School Hospital, Japan, 2.Okayama University Hospital, Department of Emergency and Critical Care Center, Japan, 3.Department of Emergency Medicine, Yokohama City University School of Medicine, Japan, 4.Department of Critical Care and Anesthesia, National Center for Child Health and Development, Japan, 5.Kawaguchi Cardiovascular and Respiratory Hospital, Japan)

【ライブ配信】

The history of ECMO in Japan dates back to early 1970. The pioneer pediatric surgeons and anesthesiologists had introduced ECMO, and the first successful cases in neonate and adult were reported in 1980s. Since then, neonatal and pediatric ECMO has been developed, with major problems in appropriate device supplies for children such as vascular accesses. In 1998, percutaneous cardiopulmonary support came to be used and the number of cases had increased year by year. The Japanese society of PCPS was established in 1991 and contributed to further spread of ECMO throughout the nation due to development of simplified ECMO system, providing emergency application of VA ECMO for cardiogenic shock. In 2012, SAVE J study comparing ECPR and conventional CPR for out of cardiac arrest with shockable rhythm was published, with significantly better neurological outcome in ECPR. According to the survey conducted by the society, total ECMO cases in 2009 was estimated to have been increased to approximately 2000 cases, and 2600 cases in 2015, mostly cardiac support. However, the outcome of respiratory ECMO was unknown. According to the survey on ECMO for H1N1 associated ARDS conducted after pandemic in 2009, it was revealed that the outcome was much worse than other developed countries. The possible reasons responsible for this were lack of using appropriate devices for long term ECMO, low volume centers, no training programs, no specialist team for respiratory ECMO. In 2012, ECMO project based on the ICU societies was established, started registry, education programs, periodical simulation courses. As the result, the second survey conducted at the recent pandemic of influenza in 2016, the survival rate improved to 83



percent although severity of the patients on ECMO was higher than those of in 2009.

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## [TJS2-3] Initiating ECMO training program in Thailand

Sunthiti Morakul (Department of Anesthesiology, Ramathibodi Hospital, Mahidol University, Thailand)

【ライブ配信】

Extracorporeal membrane oxygenator (ECMO) is a mechanical cardiovascular and respiratory support device that is used in patients who suffered from severe cardiovascular and respiratory failure. ELSO guidelines for training and continuing education of ECMO specialists recommend that ECMO center must develop their institution specific guidelines and policies for training ECMO specialists. In the first period, ECMO was done in the intensive care unit (ICU) of cardiovascular and thoracic (CVT) surgery under taking care by cardiac surgeon and perfusionist. After increasing number of ECMO cases, ECMO team has been initiated as an ECMO specialist. Then in-house ECMO training programs have been established for critical care doctor, ICU nurse and others.

First ECMO case in Ramathibodi hospital, one of the ECMO centers in Bangkok, Thailand, is a near drowning pediatric patient occurred in 2003, 15 years ago. Veno-arterial ECMO was used in this patient who was intensive cared in CVT-ICU with the cooperation between cardiovascular surgeon, pediatrician and perfusionist. During the first 10 year, there was only 15 cases. All of them was veno-arterial ECMO cases and pediatric patient or post-operative cardiac surgery. ECMO Survival rate is about 20%. At that time, there was no ECMO training program in Thailand.

In 2013, there was the first ECMO case in pediatric ICU and the first veno-venous ECMO case in the next year, 2014. We recognized the healthcare team who was taking care this patient has inadequate in ECMO knowledge. So ECMO team was established by CVT surgeon, adult and pediatric intensivist, cardiologist, anesthesiologist and perfusionist and ECMO training was developed at the same time.

ECMO training program was divided into two parts, basic and advanced ECMO course. The topics of basic course consists of overview, cannulation, circuit and monitoring equipment, indications and physiology for VV and VA-ECMO, ECMO initiation, basic monitoring and weaning during ECMO and nursing care in ECMO patient. The topics of advanced course consists of management of mechanical ventilation, anticoagulation, renal replacement therapy and drug dosing including complications during ECMO. After in-house training program, ECMO Survival rate is increase from 20% to 56%, as shown in table.

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(Fri. Mar 1, 2019 11:25 AM - 12:25 PM 第11会場)

## [TJS2-4] ECMO training program in Japan

Tomoyuki Endo<sup>1</sup>, Shinichiro Oshimo<sup>2</sup> (1.Division of Emergency and Disaster Medicine, Tohoku Medical and Pharmaceutical University, Japan, 2.Hiroshima University Emergency and Critical Care medicine, Japan)

【ライブ配信】

In Japan veno-arterial extracorporeal membrane oxygenation (VA-ECMO) has been used since 1990s to resuscitate reversible cardiovascular failure. Because of the rapid implementation of VA-ECMO without dedicated training program, novices must learn only through the real patient. This lack of training might lead to malpractices. In contrast veno-venous ECMO (VV-ECMO) as the rescue therapy for severe acute

respiratory distress syndrome (ARDS) is a relatively new strategy in Japan, therefore Japanese practitioners have not been used to VV-ECMO management. Because of the unsatisfied outcome of severe ARDS patients due to 2009 H1N1 Influenza in Japan compared to other advanced ECMO centers in the world, Japanese experts recognized that developing VV-ECMO training program should be urgent. Thus the need for ECMO training program had motivated some experts. As to VV-ECMO, the core members of Japanese Society of Respiratory Care Medicine have developed ECMO simulation seminar in 2013. This one-and-a-half-day course includes the didactic lectures, skill stations and scenario training. The application should be done as a 3-person multidisciplinary team including a physician, a nurse and a perfusionist. From July 2013 to August 2018, 12 courses were held. In the last 10 courses there were 261 attendees of 120 physicians, 68 nurses and 73 perfusionists. The lectures consist of several themes of ECMO basics. Skill stations include preparing/changing the circuit, deairation, priming/changing the membrane and trouble shooting in device failure or power loss. Scenario training includes the cases requiring specific trouble shooting such as air in the circuit, pump failure and transition to VA-ECMO. As to VA-ECMO, we developed the original half-day seminar including cannulation hands-on training with the original vascular model in 2013. In 2016 the seminar was changed into a one-day program including both cannulation training and team scenario simulation. The application should be done as a 5 to 7-person multidisciplinary team. During May 2016 to October 2018, 33 courses were held, and total 342 attendees of 162 physicians, 103 nurses and 77 perfusionists joined. Hands-on training is helpful to master the skills related to ECMO management. Moreover team scenario training is crucial to integrate their knowledge and skills and make decision to initiate and manage ECMO as a team.

## [TJS3] TSCCM-JSICM Symposium3

### Mechanical ventilation

Chair: Toru Kotani (Department of Intensive Care Medicine, Showa University, Japan), Adisorn

Wongsa (Phramongkutklao Hospital, Thailand)

Fri. Mar 1, 2019 3:10 PM - 4:25 PM 第11会場 (国立京都国際会館1F Room C-2)

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#### [TJS3-1] Weaning from mechanical ventilation in ARDS patients : Does automated weaning make our lives easier?

Tomomi Ueda (The Department of Anesthesiology, Keio University School of Medicine, Japan)

#### [TJS3-2] Mechanical ventilation in ARDS

Adisorn Wongsa (Phramongkutklao Hospital, Thailand)

#### [TJS3-3] Spontaneous breathing in ARDS

Takeshi Yoshida (The Department of Anesthesiology and Intensive Care Medicine, Osaka University Graduate School of Medicine, Japan)

#### [TJS3-4] Trouble shooting in mechanical ventilation

Boonsong Patjanasontorn (Division of Pulmonary and Critical Care Medicine, Department of Medicine, Khon Kaen University, Thailand)

#### [TJS3-5] Biomarkers may predict outcomes in pediatric ARDS

Satoshi Nakagawa<sup>1</sup>, Tho Bui<sup>2</sup>, Phuc Phan Huu<sup>2</sup>, Akira Aina<sup>3</sup>, Ikuyo Takayama<sup>3</sup>, Tadaki Suzuki<sup>3</sup>, Thuy Phung<sup>2</sup>, Huong Do Thu<sup>2</sup>, Hai Le Thanh<sup>2</sup>, Noriko Nakajima<sup>3</sup> (1.National Center for Child Health and Development, Japan, 2.National Children's Hospital, Vietnam, 3.National Institute of Infectious Diseases, Japan)

(Fri. Mar 1, 2019 3:10 PM - 4:25 PM 第11会場)

## [TJS3-1] Weaning from mechanical ventilation in ARDS patients : Does automated weaning make our lives easier?

Tomomi Ueda (The Department of Anesthesiology, Keio University School of Medicine, Japan)

【ライブ配信】

Prolonged period of mechanical ventilation is associated with increased morbidity and mortality. Thus, prompt liberation from mechanical ventilation is upmost importance in respiratory management. Although weaning from mechanical ventilation is a simple process in many cases, a weaning process is often complicated and challenging in patients with acute respiratory distress syndrome (ARDS), due to severe lung injury.

When we consider a weaning process, 3 steps; initiation, transition, and completion, should be taken into account. In patients treated for ARDS, the weaning can be initiated when inflammatory response and gas exchange are improved. Conventionally rapid shallow breathing index or P/F ratio is often used as an assessment tool for evaluation, but it's accuracy to predict successful weaning is limited. Other methods, such as measuring esophageal pressure, P 0.1, and presence of asynchrony are potential parameters to evaluate a weaning process.

Protocolized weaning has been proven to reduce weaning duration, but the problem associated with protocol adhesion and implication is a great weakness. With development of closed loop ventilation, various modes for mechanical ventilation has been introduced as a potential tool for automated weaning. While some modes such as Smart Care / PS or Adaptive Support Ventilation (ASV) have been reported to reduce weaning time or duration of mechanical ventilation, studies examining their effectiveness in ARDS are limited.

In this session, various closed loop ventilation modes (Smart Care / PS, ASV, Intellivent) that could be used for automated weaning are introduced. Furthermore their potential benefits and safety in patients with ARDS are discussed.

(Fri. Mar 1, 2019 3:10 PM - 4:25 PM 第11会場)

## [TJS3-2] Mechanical ventilation in ARDS

Adisorn Wongsu (Phramongkutklao Hospital, Thailand)

【ライブ配信】

Current concept of mechanical ventilation in ARDS is a protective lung strategies which to provide the adequate oxygenation and less ventilator induce lung injuries (VILI). Our current understanding in physiology in stress and strain combine with driving pressure may guide the direction for ventilator setting in ARDS besides the low tidal volume will attend on appropriate of driving pressure, slower inspiratory flow, slow respiratory rate. Not only concern about VILI we will need to focus on hemodynamic disturbance from cardiopulmonary interaction between the patient and ventilator. The suggestion for ventilator setting that minimize effect on the right ventricular is gradual increase in pressure during inspiration , rapid drop in pressure after cycling to exhalation occurs , keep a mean airway pressure (mean PAW) during the expiratory period as near to atmospheric as possible and keep expiration time longer than inspiratory time to avoid acute Cor Pulmonale .The adjunct measurement is adding prone position as well as sedative and neuromuscular blocking agent to minimized transpleural pressure swing and to improve oxygenation.

Reference

Gattinoni et al. The future of mechanical ventilation: lessons from the present and the past, Critical Care, (2017) 21:183

Gustavo A. Cortes-Puentes,, Richard A. Oeckler,, John J. Marini; Ann Transl Med 2018;6(18):35

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(Fri. Mar 1, 2019 3:10 PM - 4:25 PM 第11会場)

### [TJS3-3] Spontaneous breathing in ARDS

Takeshi Yoshida (The Department of Anesthesiology and Intensive Care Medicine, Osaka University Graduate School of Medicine, Japan)

【ライブ配信】

Facilitating spontaneous breathing has been traditionally recommended during mechanical ventilation in ARDS. However, early, short-term use of neuromuscular blockade appears to improve survival, and spontaneous effort has been shown to potentiate lung injury as well as diaphragm injury in animal and clinical studies. Recently, such effort-dependent lung injury has been termed Patient Self-Inflicted Lung Injury (P-SILI). I will update and summarize the role of spontaneous breathing during mechanical ventilation in ARDS, which can be beneficial or deleterious, depending on the strength of spontaneous activity and severity of lung injury.

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(Fri. Mar 1, 2019 3:10 PM - 4:25 PM 第11会場)

### [TJS3-4] Trouble shooting in mechanical ventilation

Boonsong Patjanasontorn (Division of Pulmonary and Critical Care Medicine, Department of Medicine, Khon Kaen University, Thailand)

【ライブ配信】

Ventilator troubleshooting during are serious problems happening while on mechanical ventilation. The problems could be the patient related or the machine related factors. The clinically deteriorating in mechanically ventilated patient includes hemodynamic instabilities, high pressure alarms, low pressure alarms, low exhaled tidal volume, and desaturation.

Etiology of troubleshooting could be the patient related factor such as volume depletion, pain, anxiety, and pulmonary or extrapulmonary disease process or the machine related factors such as improper ventilator settings, endotracheal tube problems, ventilator circuit problems, or ventilator dysfunction. Some of the problems may be life threatening. It requires logical and systematic search for the source of a problem in order to solve it.

The initial priority in dealing with ventilator troubleshooting is to assess the patient how severe is the problem by look at the O2 saturation and hemodynamic instabilities. The next step is to diagnose the problem by manually bagging the patient with a self-inflating resuscitator to separate between the ventilator/circuit problems or the endotracheal tube/patient problems.

For hypotensive patient, the most important causes occurring soon after the initiation of mechanical ventilation are relative hypovolaemia, reduction in venous return exacerbated by positive intrathoracic pressure, or drug induced vasodilation and myocardial depression. It is possibilities that auto-PEEP or dynamic hyperinflation is the contributing factors those need to get rid.

Patient-ventilator dyssynchrony are less serious but it is important to identify and treat dyssynchrony for facilitate liberation process and no simply to sedate the patient more heavily those may prolong ICU course.

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(Fri. Mar 1, 2019 3:10 PM - 4:25 PM 第11会場)

## [TJS3-5] Biomarkers may predict outcomes in pediatric ARDS

Satoshi Nakagawa<sup>1</sup>, Tho Bui<sup>2</sup>, Phuc Phan Huu<sup>2</sup>, Akira Aina<sup>3</sup>, Ikuyo Takayama<sup>3</sup>, Tadaki Suzuki<sup>3</sup>, Thuy Phung<sup>2</sup>, Huong Do Thu<sup>2</sup>, Hai Le Thanh<sup>2</sup>, Noriko Nakajima<sup>3</sup> (1.National Center for Child Health and Development, Japan, 2.National Children's Hospital, Vietnam, 3.National Institute of Infectious Diseases, Japan)

【ライブ配信】

**Introduction**: Acute respiratory distress syndrome (ARDS) has high mortality even in the pediatric population.  $\text{PaO}_2/\text{F}_\text{I}\text{O}_2$  (P/F) ratio and oxygenation index can stratify the disease severity. We do not know whether adding biomarker information in the early clinical course to these mechanical ventilation parameters can further precisely predict the outcome.

**Objectives**: We examine the hypothesis that adding interferon-gamma induced protein 10 (IP-10) level at the time of diagnosis of ARDS to

P/F ratio at 12 hours of mechanical ventilation can predict the outcome in pediatric ARDS patients.

**Methods**: A prospective observational study is carried out at a tertiary Pediatric Intensive Care Unit in Vietnam. Children between 1 month and 15 years in age who fulfill the criteria of ARDS are enrolled. P/F ratio was recorded at 12 hours of mechanical ventilation and blood sample was taken within 24 hours of mechanical ventilation and was analyzed for biomarkers.

**Results**: 34 patients were enrolled in the study. Age varied from 1 month to 9 years old with median of 7 months. 14 patients died (41% mortality). P/F ratio ( $135 \pm 91$  vs.  $73 \pm 30$ ,  $p < 0.01$ ) at 12 hours of mechanical ventilation were significantly different between survivors and non-survivors. IP-10 level was higher in non-survivors than survivors ( $4040 \pm 2850$  vs.  $790 \pm 1995$  pg/ml,  $p < 0.001$ ). The four groups are created based on P/F ratio and IP-10 levels and the mortality in these combinations is shown in the table.

**Conclusion**: The combination of early P/F ratio and IP-10 level may predict the outcomes in pediatric ARDS.

## [TJS4] TSCCM-JSICM Symposium4

### Perioperative critical care

Chair: Moritoki Egi (Department of Anesthesiology, Kobe University Hospital, Japan), Sahadol

Poonyathawon (Department of Anesthesiology, Chulalongkorn University, Thailand)

Fri. Mar 1, 2019 4:30 PM - 5:45 PM 第11会場 (国立京都国際会館1F Room C-2)

#### [TJS4-1] How to start up surgical ICU by internal physician intensivist

Go Haraguchi<sup>1</sup>, Chieko Mitaka<sup>2</sup>, Koichi Matsuo<sup>3</sup>, Takumi Nagao<sup>1</sup>, Katsuaki Otsuki<sup>4</sup>, Morimasa Takayama<sup>5</sup>, Mitsuaki Isobe<sup>5</sup> (1.Division of Intensive Care Unit, Sakakibara Heart Institute, Japan, 2.Department of Anesthesiology, Juntendo University Hospital, Japan, 3.Division of Intensive Care Unit, New Tokyo Hospital, Japan, 4.Division of Intensive Care Unit, Tsuchiura Kyodo General Hospital, Japan, 5.Department of Cardiovascular Medicine, Sakakibara Heart Institute, Japan)

#### [TJS4-2] Perioperative fluid therapy

Sahadol Poonyathawon (Department of Anesthesiology, Chulalongkorn University, Thailand)

#### [TJS4-3] Perioperative nutrition therapy

Kaweesak Chittawatanarat (Department of Surgery, Chiang Mai University, Thailand)

#### [TJS4-4] Perioperative respiratory management

Kiyoyasu Kurahashi (Department of Anesthesiology and Intensive Care Medicine, International University of Health & Welfare School of Medicine, Japan)

#### [TJS4-5] Prevention of perioperative AKI

Kent Doi (Department of Acute Medicine, The University of Tokyo, Japan)

(Fri. Mar 1, 2019 4:30 PM - 5:45 PM 第11会場)

## [TJS4-1] How to start up surgical ICU by internal physician intensivist

Go Haraguchi<sup>1</sup>, Chieko Mitaka<sup>2</sup>, Koichi Matsuo<sup>3</sup>, Takumi Nagao<sup>1</sup>, Katsuaki Otsuki<sup>4</sup>, Morimasa Takayama<sup>5</sup>, Mitsuaki Isobe<sup>5</sup> (1.Division of Intensive Care Unit, Sakakibara Heart Institute, Japan, 2.Department of Anesthesiology, Juntendo University Hospital, Japan, 3.Division of Intensive Care Unit, New Tokyo Hospital, Japan, 4.Division of Intensive Care Unit, Tsuchiura Kyodo General Hospital, Japan, 5.Department of Cardiovascular Medicine, Sakakibara Heart Institute, Japan)

【ライブ配信】

There are many hospitals without ICU in Japan. Moreover, there are so many ICU without presence of intensivists. Japanese government required existence of ICU for definition of advanced acute care hospital, large number of hospitals wanted to hire intensivist as for. For this reason, I started up three ICU in these 6 years. First, I started to be permanently stationed in the surgical ICU especially for cardiac surgery (650/year) from April 2014. I presented the comparison of the year with or without presence of intensivist in the 43th annual meeting of the JSICM. Next, I started general ICU (about 80% of patients were surgical) in 800 beds hospital with emergency center from April 2016 at the same time as reorganization of the hospital. Last, I started the surgical ICU especially for cardiac surgery (1200/year) from Nov 2017. The presence of physician intensivist in surgical ICU profits at least 3points, 1) the treatment progress regardless of surgeon's absence 2) the care from both surgeon's and physician's viewpoints 3) a relief for all co-medicals in my experience. But then, the biggest disadvantage of physician intensivist is that I cannot do surgical procedures including re-operation, treatment of massive hemorrhage. Of course, a cooperation between all the staff of ICU is most beneficial and important thing.

(Fri. Mar 1, 2019 4:30 PM - 5:45 PM 第11会場)

## [TJS4-2] Perioperative fluid therapy

Sahadol Poonyathawon (Department of Anesthesiology, Chulalongkorn University, Thailand)

【ライブ配信】

The choice of perioperative fluid has been one of on-going controversial issues in perioperative critical care. Acute crystalloid loading and hypervolemia result in fluid overload which may be associated with organ dysfunction and increased mortality. Protection or restoration of the endothelial glycocalyx layer may be an important therapeutic goal of fluid therapy. Large observational studies show hyperchloremia was associated with increased mortality, renal dysfunction & hospital stay in surgical patients. Recent large cluster-randomized, multiple-cross over trial show balanced crystalloid solutions resulted in improved composited outcomes including mortality & major adverse renal risk compared to 0.9%NaCl in critically ill adults. Colloids have been shown to be more effective than crystalloids for intravascular volume effect and improving systemic hemodynamics. However, meta-analyses show association between hydroxyethyl starch and increased incidence of renal replacement therapy/mortality in mixed group of critically ill patients. Recent study show long-term disability-free survival was significantly higher in the colloid than crystalloid in major abdominal surgical patients. Optimizing fluid therapy with dynamic hemodynamic parameters in goal-directed hemodynamic/fluid management decreases morbidity & mortality in high risk surgical patients. Assisted fluid management strategy with tools that can suggest fluid bolus therapy & continuously re-assess the patient's needs for further fluid may result in less fluid given but better hemodynamic profile. In summary, any perioperative fluids should be considered as drugs. Therefore, clinicians should have much more thoughtful consideration as no definitive recommendations on the most appropriate fluid of choice or



how to optimize fluid therapy for every surgical patient yet.

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(Fri. Mar 1, 2019 4:30 PM - 5:45 PM 第11会場)

### [TJS4-3] Perioperative nutrition therapy

Kaweesak Chittawatanarat (Department of Surgery, Chiang Mai University, Thailand)

【ライブ配信】

Nutrition support is a part of treatment in perioperative critical care and enteral nutrition is a more preferred route on the standard recommendation. However, there are some limitations on perioperative enteral nutrition initiation especially in the patient undergone abdominal surgery. In addition, the critically ill associated gut dysmotility might be an aggravated factor. On the large prospective survey in the Thai-University-based surgical intensive care units (SICU), THAI-SICU study, the target of enteral nutrition was increasing during the first week after SICU admission. The amount of nutrition support was on the steady state around day 7<sup>th</sup> – 10<sup>th</sup>. The energy provision proportion of enteral and parenteral nutrition support were different between institute participated in this multicenter study. However, the complication including ICU mortality, 28-d mortality and sepsis occurrence between institutes were not different after adjusted the confounder variables. In this survey, the average total received energy is 20 kcal/kg/d after the first week. The nutrition factors affecting the mortality or sepsis occurrence in this prospective observation was body mass index, type of nutrition route before admission, severe weight loss, preadmission albumin less than or equal 2.5 mg/dL and at risk of according to NRS-2002. On the nationwide survey in Thailand, the screening and assessment is an important process on nutrition care process. The routine screening and assessment lead to organize the hospital multi-disciplinary nutrition support team, promotion of enteral nutrition either hospital or commercial formula. Currently, there were still have the controversy issues on nutrition support in critically ill patients, this include the amount of protein needs, the composition of macronutrient, the specialized amino acid such as glutamine, micronutrient replacement, the type of fatty acid as omega-3 fatty acid, routine gastric residual volume measurement on high risk of aspiration patients, and probiotics. In conclusion, although the beginning of nutrition during peri-operative period might be delayed in non-nutrition risk patient, nutrition support should be early initiated in malnourish patient. The adequacy of nutrition support and promotion of early mobilization lead to enhance of recovery period and result in favorable outcomes.

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(Fri. Mar 1, 2019 4:30 PM - 5:45 PM 第11会場)

### [TJS4-4] Perioperative respiratory management

Kiyoyasu Kurahashi (Department of Anesthesiology and Intensive Care Medicine, International University of Health & Welfare School of Medicine, Japan)

【ライブ配信】

The concept of the protective ventilation was raised in late 1990<sup>th</sup> for the management of acute respiratory distress syndrome (ARDS) in preventing ventilator-associated lung injury (VALI).

During surgery, there are multiple insults to the patients including pain, fear, bleeding, transfusion, infection, ischemia-reperfusion, hyperoxia / hypoxia, or extracorporeal circulation. These insults may induce systemic inflammation which then prime the lungs being susceptible to lung injury. Hence, protective ventilation strategy is now extended to patients undergoing surgery who do not have respiratory complications

preoperatively.

After the session, the participants will understand the ideal respiratory management for the surgical patients and the reason of which with updated knowledge.

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(Fri. Mar 1, 2019 4:30 PM - 5:45 PM 第11会場)

## [TJS4-5] Prevention of perioperative AKI

Kent Doi (Department of Acute Medicine, The University of Tokyo, Japan)

【ライブ配信】

Acute kidney injury (AKI) is one of the most frequent complication in post-surgery patients and strongly associated with the poor outcomes such as death and longer stay in ICU. Unfortunately, no currently available drug that can treat AKI sufficiently exist in the clinical, prevention of AKI is important for postsurgical care. Recently, several strategies have been developed for AKI prevention. First, electric alert (E-alert) using electronic health records has been introduced to change care provider behavior in order to improve quality of AKI care. Previous studies regarding the impact of AKI E-alerts were conflicting; some reported improvement in care processes and patient outcomes, while others showed no effect on clinical outcomes. Another strategy is bundle-based approach with risk stratification by using AKI biomarker. New biomarker will allow to detect AKI earlier than serum creatinine. The Kidney Disease: Improving Global Outcomes (KDIGO) guidelines suggest implementing preventive strategies in high-risk patients, which include optimization of hemodynamics, restoration of the circulating volume, institution of functional hemodynamic monitoring, and avoidance of nephrotoxic agents and hyperglycemia. Two recent interventional studies demonstrated implementing this bundle in high-risk patients reduced the occurrence of AKI in the perioperative period. Lastly, some new drugs that can prevent AKI via different mechanisms of action are currently under evaluation. In conclusion, prevention of perioperative AKI has a great impact on the outcomes and needs to be improved by multidisciplinary approach.