Publications in 2020

*Critical Care*. 2020 Jan 31;24(1):31.doi: 10.1186/s13054-020-2741-x.

**The Impact of High Frequency Oscillatory Ventilation on Mortality in Paediatric Acute Respiratory Distress Syndrome**

Judith Ju-Ming Wong, Siqi Liu, Hongxing Dang, Nattachai Anantasit, Phuc Huu Phan, Suwannee Phumeetham, Suyun Qian, Jacqueline Soo May Ong, Chin Seng Gan, Yek Kee Chor, Rujipat Samransamruajkit, Tsee Foong Loh, Mengling Feng, Jan Hau Lee, Pediatric Acute & Critical care Medicine Asian Network (PACCMAN)

*Pediatric Critical Care Medicine*. October 7, 2020

**Traumatic Brain Injury Outcomes in 10 Asian Pediatric ICUs: A Pediatric Acute and Critical Care Medicine Asian Network Retrospective Study**

Shu-Ling Chong, Hongxing Dang, Meixiu Ming, Maznisah Mahmood, Charles Q. S. Zheng, Chin Seng Gan, Olive P. E. Lee, Jian Ji, Lawrence C. N. Chan, Jacqueline S. M. Ong, Hiroshi Kurosawa, Jan Hau Lee, The Pediatric Acute & Critical Care Medicine Asian Network (PACCMAN)

*In this issue …*

- PACCMAN publications
- PARDS in press
- New members
- Studies update
Lianhe Zaobao published the story that was pitched on Paediatric Acute Respiratory Distress Syndrome (PARDS). Within the piece, it notes that the condition is uncommon but has a high death rate. The story carried responses from Dr Judith Wong Ju-Ming, Critical Care Chair of PACCMAN Scientific Committee and Dr Lee Jan Hau, Chair of PACCMAN, who shared about the condition of PARDS, risk factors, treatment and how the condition has evolved during Covid-19. Findings of the study were also mentioned in the article. The article also included a quote from Dr Danny Soon, Executive Director, Singapore Clinical Research Institute (SCRI) and Chief Executive Officer, Consortium for Clinical Research and Innovation Singapore (CRIS) who shared more on the benefits of a multi-centre research study and SCRI’s role in the clinical research.

Direct link to the article: https://www.zaobao.com.sg/news/fukan/lohas/story20201110-1099734
New Members in 2020...

Dr Chong Jia Yueh, Women and Children’s Hospital, Malaysia
Dr Yuki Enomoto, University of Tsukuba Hospital, Japan
Dr Yujiro Matsuishi, University of Tsukuba Hospital, Japan
Dr Osamu Saito, Tokyo Metropolitan Children’s Medical Center, Japan
Dr Ichiro Watanabe, Tokyo Metropolitan Children’s Medical Center, Japan
Dr Tadashi Kodani, Tokyo Metropolitan Children’s Medical Center, Japan
Dr Mioko Kasagi, Tokyo Metropolitan Children’s Medical Center, Japan
Dr Pon Kah Min, Penang Hospital, Malaysia
Dr Takanari Ikeyama, Aichi Children’s Health Medical Center, Malaysia
Dr Cheng Yibing, Henan Children’s Hospital, China
Dr Zhang Furong, Wuhan Children’s Hospital, China
Dr Hwa Jin Cho, Chonnam National University Children’s Hospital, Korea
Dr Joongbum Cho, Samsung Medical Center, Korea

We do not have a fixed criteria to join as member. We welcome anyone who is keen to collaborate and share common goal of developing best practices to improve survival in critically ill children in Asia. If you have any colleagues or friends who are interested, please do refer them to us.
Background and Aims

We aim to describe the coagulation profiles in children with moderate to severe TBI, identify predictors of early coagulopathy and investigate the association between early coagulopathy, mortality and functional outcomes in pediatric TBI.

Methods

Using the Pediatric Acute & Critical Care Medicine Asian Network (PACCMAN) TBI retrospective cohort we identified all patients < 16 years old with a Glasgow Coma Scale (GCS) ≤ 13. We compared prothrombin time (PT), activated partial thromboplastin time (APTT), platelets, and outcomes between children with isolated TBI and those with TBI in the presence of multiple trauma. We performed logistic regression analyses to identify predictors of early coagulopathy and to study the association with mortality and poor functional outcomes.

Results

Among 371 children with complete coagulation profiles, the mean age was 5.4 years (SD 4.1). PT was commonly deranged in both isolated TBI (53/173, 30.6%) and multiple trauma (102/198, 51.5%). Independent predictors for early coagulopathy were young age [adjusted odds ratio aOR 0.93, 95% confidence interval (CI) 0.88 – 0.99, p=0.018], low GCS (aOR 0.91, 95%CI 0.86 – 0.97, p=0.002) and presence of multiple trauma (aOR 2.19, 95%CI 1.36 – 3.57, p=0.001). After adjusting for age, gender, GCS, multiple trauma and presence of intracranial bleed, children with early coagulopathy were more likely to die (aOR 7.70, 95%CI 3.09 – 23.53, p<0.001) and have poor neurological outcome (aOR 2.25, 95%CI 1.31 – 3.91, p=0.004).

Conclusion

Early coagulopathy is common and independently associated with death and long term poor neurological function among children with TBI. Future trials are required to study the impact of correction of early coagulopathy on clinical outcomes.
Paediatric Traumatic Brain Injury (pTBI): Prospective design

Study lead: Dr Chong Shu Ling, Department of Emergency Medicine, KK Women’s and Children’s Hospital

Title: Does 3% hypertonic saline decrease mortality and improve long-term neurological outcomes among children with traumatic brain injury?

Recruitment summary as of 09 December 2020 --

| Country                                           | Recruited |
|---------------------------------------------------|-----------|
| China, Beijing                                    | 34        |
| China, Chongqing                                  | 31        |
| Singapore, KKH                                    | 18        |
| Malaysia, KL (UMMC)                               | 18        |
| China, Shanghai                                   | 10        |
| Singapore, NUH                                    | 7         |
| Malaysia, Sarawak                                 | 3         |
| Japan, Kobe                                       | 2         |
| Thailand, Bangkok (Ramathibodi Hospital)           | 2         |
| Malaysia, KL (Universiti Kebangsaan Malaysia Medical Centre) | 1         |
| Pakistan, Karachi                                 | Pending recruitment |
| Thailand, Bangkok (Chulalongkorn University)       | Pending recruitment |
| Malaysia, KL (Hospital Tunku Azizah Kuala Lumpur)  | Pending recruitment |
| China, Shenyang (Pediatric department of Shengjing hospital, China Medical University) | New site join in Dec 2020 |
| **Total**                                         | **126**   |
Paediatric severe sepsis and shock in three Asian countries: A retrospective study of outcomes in nine Paediatric intensive care units

Study lead: Prof Rujipat Samransamruajkit, King Chulalongkorn Memorial Hospital, Thailand

Manuscript submitted to Pediatric Critical Care Medicine

| No. | Site name                                           | n   | Percent |
|-----|-----------------------------------------------------|-----|---------|
| 1   | Maharaj Nakorn Chiang Mai, Thailand                 | 30  | 11.07   |
| 2   | National University Hospital, Singapore             | 29  | 10.7    |
| 3   | Sarawak General Hospital, Malaysia                  | 20  | 7.38    |
| 4   | Ramathibodi Hospital, Thailand                      | 30  | 11.07   |
| 5   | King Chulalongkorn University Hospital,             | 44  | 16.24   |
| 6   | Faculty of Medicine Siriraj Hospital, T            | 13  | 4.8     |
| 7   | KK Women & children hospital, Singapore             | 50  | 18.45   |
| 8   | Hat Yai Medical Center, Thailand                    | 39  | 14.39   |
| 9   | Universiti Kebangsaan Malaysia Medical              | 16  | 5.9     |
|     | **Total**                                           | **271** | **100** |
Pediatric Acute Respiratory Distress Syndrome: A prospective Multicentre Study in Asia (PARDSProAsia 1)

Study lead: Dr Judith Wong, KK Women's and Children's Hospital, Singapore

Abstract
Mortality rates in children with pediatric acute respiratory distress syndrome (PARDS) are higher in Asia compared to other regions. A recent retrospective study of ventilation practices in Asia showed varying practices with regards to pulmonary and non-pulmonary therapies, including ventilation. We aim to determine the prevalence, management and outcomes of PARDS in the Pediatric Acute and Critical Care Medicine Asian Network (PACCMan) by conducting a regional prospective observational study.

| Site                                                      | Enrolled | Data entered |
|-----------------------------------------------------------|----------|--------------|
| KK Women’s and Children’s Hospital                        | 11       | 11           |
| National University Hospital, Singapore                    | 4        | 2            |
| National Hospital of Pediatrics                            | 31       | 31           |
| Hyogo Prefectural Kobe Children’s Hospital                | 5        | 4            |
| Guangzhou Women and Children’s Medical Center             | 20       | 16           |
| Universiti Kebangsaan Malaysia                            | 3        | 3            |
| Sarawak General Hospital                                 | 24       | 24           |
| Children’s Hospital of Chongqing Medical University        | 76       | 8            |
| Harapan Kita Children and Women hospital                  | 13       | 10           |
| Hong Kong Children's Hospital                             | 2        | 1            |
| Shengjing hospital of China Medical University            | 6        | 6            |
| Sanglah Hospital Denpasar                                 | 17       | 17           |
| Sultanah Aminah Hospital                                  | 16       | 16           |
| Ramathibodi hospital                                      | 11       | 0            |
| Children’s Hospital of Fudan University                   | 8        | 7            |
| PGIMER, Chandigarh                                        | 6        | 6            |
| University Malaya Medical Centre                          | 24       | 24           |
| Penang General Hospital                                   | 4        | 4            |
| Hospital Tunku Azizah                                     | 4        | 3            |
Lung Protection Mechanical Ventilation Strategies in Paediatric Acute Respiratory Distress Syndrome: A Before-and-After Comparison Study Design (PARDSProAsia 2)

Study lead: Dr Judith Wong, KK Women's and Children's Hospital, Singapore

| Site                                      | Standard of care | IRB | Approval by stakeholders | Enrolled first patient |
|-------------------------------------------|-------------------|-----|---------------------------|------------------------|
| KK Women’s and Children’s Hospital        | ✓                 | ✓   | ✓                         | ✓ 1 Apr 18             |
| National Hospital of Pediatrics           |                   | ✓   |                           |                        |
| Universiti Kebangsaan Malaysia            |                   |     |                           |                        |
| Sarawak General Hospital                  |                   |     |                           |                        |
| Children's Hospital of Chongqing Medical University | ✓             |     |                           | In progress            |
| Hong Kong Children’s Hospital             |                   |     |                           |                        |
| Ramathibodid Hospital                     |                   |     |                           |                        |
| Children's Hospital of Fudan              | ✓                 |     |                           | Pending                |
| PGIMER, Chandigarh                       |                   |     |                           |                        |
| University Malaya Medical Centre          |                   | ✓   |                           |                        |
| Penang General Hospital                   | ✓                 |     |                           | Pending                |
| Hospital Tunku Azizah                     |                   |     |                           |                        |

We are still recruiting

To join, please contact Dr Judith Wong (judith.wong.jm@singhealth.com.sg) or Patricia Tay (patricia.tay@scri.cris.sg).
ABSTRACT: Severe pneumonia is a leading cause of mortality and morbidity in children worldwide. Mortality rates from pediatric severe pneumonia are three times higher in South East Asia compared to the Western hemisphere. The lack of description of epidemiology, current management strategies and outcomes of children with severe pneumonia admitted to pediatric intensive care units (PICUs) in Asia is a barrier to improving paediatric critical care in the region. The lack of a sustainable paediatric critical care network in Asia makes multinational PICU studies challenging.

AIM: To estimate the burden of paediatric patients admitted to Asian PACCMAN PICUs due to severe pneumonia that develop pediatric acute respiratory distress syndrome; To characterize etiologies, identify risk factors associated with morbidity and mortality, and develop prognostic prediction models.

Sites recruitment are still open. Interested members please contact Dr Lee Jan Hau, lee.jan.hau@singhealth.com.sg or Patricia Tay, patricia.tay@scri.edu.sg for more study details.
| No | Participating Site                                                                 | Country            | Total no. of recruitment as reported by site (as of 30 Nov 2020) | Total no. of data entered in REDcap (as of 10 Dec 2020) |
|----|------------------------------------------------------------------------------------|--------------------|------------------------------------------------------------------|------------------------------------------------------|
| 1  | KK Women’s and Children’s Hospital                                                 | Singapore         | 16                                                               | 16                                                   |
| 2  | National University Hospital                                                       | Singapore         | 3                                                                | 1                                                    |
| 3  | National Hospital of Pediatrics                                                    | Vietnam            | 59                                                               | 22                                                   |
| 4  | University Malaya Medical Centre                                                   | Malaysia           | 16                                                               | 17                                                   |
| 5  | Universiti Kebangsaan Malaysia Medical Centre                                     | Malaysia           | 11                                                               | 9                                                    |
| 6  | Children's Hospital of Chongqing Medical University                               | China              | 57                                                               | 47                                                   |
| 7  | Children’s Hospital of Fudan University                                            | China              | 39                                                               | 9                                                    |
| 8  | Shengjing Hospital of China Medical University                                    | China              | 5                                                                | 5                                                    |
| 9  | Post Graduate Institute of Medical Education and Research (PGIMER)                | India              | 4                                                                | 2                                                    |
| 10 | Aga Khan University Hospital                                                       | Pakistan           | 15                                                               | 9                                                    |
| 11 | Hong Kong Children's Hospital                                                      | Hong Kong          | Pending                                                         | Pending                                              |
| 12 | Harapan Kita Children and Women hospital                                           | Indonesia          | Pending                                                         | Pending                                              |
| 13 | King Chulalongkorn Memorial Hospital                                              | Thailand           | Pending                                                         | Pending                                              |
Pediatric Acute and Critical Care COVID-19 Registry of Asia (PACCOVRA)

Study lead: Dr Judith Wong, KK Women's and Children's Hospital, Singapore

Abstract

There is wide variation in the overall clinical impact of COVID-19 across countries worldwide. Changes adopted pertaining to the management of pediatric patients, in particular, the provision of respiratory support during the COVID-19 pandemic is poorly described in Asia. We performed a multicentre survey of 20 Asian pediatric hospitals to determine workflow changes adopted during the pandemic. Data from centers of high income (HIC), upper-middle income (UMIC) and lower-middle income (LMIC) countries were compared. All 20 sites over 9 countries [HIC – Japan (4), Singapore (2), UMIC – China (3), Malaysia (3), Thailand (2), and LMIC – India (1), Indonesia (2), Pakistan (1), Philippines (2)] responded to this survey. This survey demonstrated substantial outbreak adaptability. The major differences between the three income categories were that HICs were 1) more able/willing to minimise use of non-invasive ventilation or high flow nasal cannula therapy in favour of early intubation, and 2) had greater availability of negative pressure rooms and powered air-purifying respirators. Further research into best practices for respiratory support are warranted. In particular, innovation on cost-effective measures in infection control and respiratory support in the LMIC setting should be considered in preparation for future waves of COVID-19 infection.

Manuscript “Changes Adopted for Infection Control and Respiratory Support in Asian Paediatric Hospital During the COVID-19 Pandemic: A Report from the Paediatric Acute Care and Critical Care COVID-19 Registry of Asia (PACCOVRA)”, accepted on Nov 30th
Delphi Study to Establish Paediatric Critical Care Nursing Research Priorities in Asian Countries

Study lead: Nurse Poh Pei Fen

**Background:** Studies showed that nursing care improves patient outcomes, however there are gaps between translation of evidence into clinical practice. Such studies had been done in the USA, Australia and European countries. However, due to cultural, social and economic differences between the Western countries and Asia, the findings from the Western studies may not apply in Asia. Thus a need for the study to be done in an Asia context. This study aims to identify priorities in nursing research as defined by paediatric intensive care nurses across Asia.

Data collection status:
- eDelphi Round 1 *(Completed)*
  - 3 to 5 areas of research topics that are considered important are listed by the nurses
  - Content analysis will be performed and reduced to research topics then divided into categories
- eDelphi Round 2 *(Work in progress)*
  - Nurses will rate the research topics on importance (Likert Scale)
- eDelphi Round 3 *(Work in progress)*
  - Nurses will rate again taking into consideration the mean values of the group response from Round 2

Thank you for your support to the study!
### Centres participated in Round 1

| Country   | Center                                                                 |
|-----------|------------------------------------------------------------------------|
| China     | Children’s Hospital of Chongqing Medical University                     |
|           | Guangzhou Women and Children's Medical Center                          |
|           | Children’s Hospital of Fudan University                                 |
|           | Beijing Children’s Hospital                                            |
|           | Shengjing hospital of China Medical University                         |
|           | Zhengzhou Children's Hospital                                          |
|           | Wuhan Children's Hospital                                              |
| India     | Post graduate Institute of Medical Education and Research (PGIMER)     |
| Indonesia | Sanglah Hospital Denpasar - Bali                                       |
|           | Haji Adam Malik Central General Hospital, Medan                         |
|           | Harapan Kita Children and Women Hospital                                |
| Japan     | University of Tsukuba Hospital                                         |
|           | Tokyo Metropolitan Children's Medical Center                           |
| Malaysia  | Sarawak General Hospital                                               |
|           | Sultanah Aminah Hospital                                                |
|           | Universiti Malaya Medical Centre                                       |
|           | Hospital Tunku Azizah Kuala Lumpur                                      |
| Pakistan  | Pediatrics and Child Health, Aga Khan University Hospital, Karachi, Pakistan |
| Singapore | KK Women's and Children's Hospital                                      |
|           | National University Hospital                                           |
| Vietnam   | Vietnam National Children's Hospital                                   |
Join Us …

To become one of us, please go to: https://www.scri.edu.sg/crn/pediatric-acute-critical-care-medicine-asian-network/members/ to download the registration form. Kindly submit the completed form to patricia.tay@scri.cris.edu.sg.

If you have any feedback or would like to feature updates from your country in the PACCMAN newsletter, kindly write to Ms Patricia Tay, PACCMAN secretariat, at patricia.tay@scri.cris.sg.

We do not have a fixed criteria to join as member. We welcome anyone who is keen to collaborate and share common goal of developing best practices to improve survival in critically ill children in Asia. If you have any colleagues or friends who are interested, please do refer them to us.