

# Anesthesiologi

- Malaysian Society of Anaesthesiologists
- College of Anaesthesiologists, Academy of Medicine of Malaysia



## Message from the President of the MSA

*Professor Dr Marzida Mansor*



Malaysian Society  
of Anaesthesiologists



College of  
Anaesthesiologists, AMM

Greetings to all members of the Malaysian Society of Anaesthesiologists (MSA). It is almost two years that I have been the President of the MSA and it looks like I have carried on this duty a little while more due to the COVID-19 pandemic as our Annual Scientific Congress (ASC) and, very likely with it, the annual general meeting, has been pushed back to August 2021. In the last three months, Malaysia has seen the rise in COVID-19 cases reaching more than 5,000 new cases a day. We are seeing and treating more COVID-19 cases than ever before. What is alarming is the rise in infection among health care workers where over 4000 Ministry of Health (MOH) frontliners have been infected with COVID-19 although most of them were afflicted in the community and not in the facilities where they worked. This then led to the proclamation of emergency by the DYMM SPB Yang Pertuan Agong. However, today as I am writing this message, the vaccine for COVID-19 is being rolled out in Malaysia. The phase I of the National Vaccination Programme will involve many of us, the frontliners. We are hoping that this will be the beginning of the end of this pandemic.

Whatever it is, the pandemic has never stopped us from steaming ahead with our Society activities. It is my pleasure to share with you some of the activities of the Society in the last four months.

### MSA Continuous Fight Against COVID-19

Donation of Personal Protective Equipment (PPE) to hospitals in Sabah continued from the initial donation of 11 Powered Air Purifying Respirator (PAPR) by the MSA and the College of Anaesthesiologists (CoA) and later donation of face shields to the frontliners through the Islamic Medical Association of Malaysia Response and Relief Team (IMARET). Subsequently, Dato Dr Jahizah Hassan, Immediate Past President of the MSA and President of the CoA, worked with the Master and Scribe of the Academy of Medicine of Malaysia to source for donations and identify the hospitals in Sabah which needed the PPE badly. Many other medical societies rose to the occasion and donated both PAPR and High Flow Nasal Cannula (HFNC) to the hospitals in Sabah.

When the COVID-19 pandemic eventually started raging in Peninsular Malaysia, there has been a move by the Ministry of Health to engage private and academic hospitals to manage COVID-19 cases in order to effectively mobilise the capacity and resources needed to contain the pandemic. The dilemma faced by private hospitals has sparked numerous debates regarding the feasibility and practicality of this idea.

Meanwhile, the MSA, the CoA and the Malaysian Society of Intensive Care (MSIC) came out with press statements stating that in order to win the COVID-19 crisis, the healthcare providers must unite. We are in support of the Private-Public partnership and the three organisations pledged our willingness to help serve and assist the MOH in fighting COVID-19. In the press statement, we also noted that while focusing on COVID-19 patients, the management of the critically ill and semi-urgent non-COVID-19 patients should not be ignored. We suggested that the care of some of these patients can be handled at private hospitals so that the public hospitals will be able to concentrate on managing more seriously ill COVID-19 patients.

Currently we are busy preparing the guidelines on "elective surgery and anaesthesia for patients after COVID-19 infection" as we have been getting many queries from members on how best to manage this category of patients.

### MSA Participation in the Korean Society of Anaesthesiologists (KSA) Congress

In the spirit of the MOU signed between the MSA and the KSA in 2017, the collaboration between the two Societies is only getting stronger as evidenced by the MSA's strong participation in the Hybrid KoreAnesthesia 2020 conference that was held from 5<sup>th</sup> to 7<sup>th</sup> November 2020. We sent a special congratulatory video to KSA for swiftly adapting their style of organising a conference during the pandemic. Our involvement in the Congress included providing three Malaysian speakers and three moderators who participated virtually. The KSA has provided 50 free registration to MSA members.

## K Inbasegaran Research Grant

It is my pleasure to announce the recipients of the K Inbasegaran Research Grant for 2020/2021. The Award Subcommittee for evaluating the applicants for the K Inbasegaran grant has discussed at length how best to award the grant. They had narrowed it down to three out of nine applicants to share the annual RM10,000 allocation. Congratulations to all the following recipients:

1. AP Dr Chaw Sook Hui (UMMC) - Does Higher Operation Theatre Ambient Temperature and Intravenous Ondansetron Prophylaxis Reduce Incidence of Post-spinal Shivering in Obstetric Population? A Doubleblind, Randomised, Factorial Study - RM 2300
2. Dr Liong Jia Yong / AP Dr Carolyn Lim (UMMC) - Role of IV iron therapy versus standard care in management of postoperative anaemia in orthopaedic oncology patients - RM 5600
3. Dr Muhammad Maaya / Dr Wan Aizat (Airway SIG) - A National Quality Improvement Initiative in Airway Management: Where do we currently stand and what can we improve? - RM 2100

## MSA/CoA CPD Activities

The following webinars were conducted jointly by the MSA and the CoA since December 2020:

19<sup>th</sup> December 2020 - Obstetric Anaesthesia Webinar  
23<sup>rd</sup> January 2021 - Ultrasound Guided Vascular Access Webinar  
7<sup>th</sup> February 2021 - The Privateers Strike Back- To Covid or Not To Covid Webinar

The MSA and the CoA also jointly organised a Perioperative Airway Management Workshop successfully on 19<sup>th</sup> to 20<sup>th</sup> February 2021.

## Future Conferences Related to the MSA

1. **MSA and CoA Annual Scientific Congress 2021** - 6<sup>th</sup> to 8<sup>th</sup> August 2021  
The Organising Committee has decided that, due to the uncertainty of the COVID1-19 situation in Malaysia, the ASC this year will be done totally virtually. The congress fees and programme have been revised and the new announcement will be distributed soon.
2. **17<sup>th</sup> World Congress of Anaesthesiologists** - Prague, Czech Republic, 1<sup>st</sup> to 5<sup>th</sup> September 2021

## MSA Representative on the WFSA Intensive and Critical Care Medicine Committee

The MSA would like to congratulate Professor Dato' Dr Mohd Basri Mat Nor, from the International Islamic University Malaysia, for being appointed as a member of Intensive and Critical Care Medicine Committee of WFSA (2020-2021). Professor Dr Basri is one of the pioneers in intensive care medicine in Malaysia and is the President of the MSIC since 2017. On the international arena, he is a committee member of the Asia Pacific Association for Critical Care and has published more than 100 publications in indexed and non-indexed journals. The MSA wishes him the very best and is confident that he will be able to contribute meaningfully given his experience and expertise.

## Obituaries

In December 2020, the MSA deeply regretted the passing away of Professor Dr Anneke Meursing from The Netherlands who was the President of the WFSA from 2004 to 2008. We also mourned the loss of one of our prominent MSA members, Dato' Dr S Pathmakanthan, from Ipoh, Perak who passed away peacefully on 8<sup>th</sup> September 2020.

While we are all excited in receiving the COVID-19 vaccination, we are still advised to continue observing the SOP while awaiting the herd immunity that we are all hoping for. On that note, I wish everyone to stay safe while we continue to play our part in fighting the pandemic.

## Editors

Dr Shahridan Mohd Fathil (Editor-in-Chief)  
Dr Gunalan Palari  
Dr Shairil Rahayu Ruslan  
Dr Noorulhana Sukarnakadi binti Hadzarami  
Dr Haslan Ghazali  
Dr Sivaraj Chandran

## Contents

Message from the President of the MSA	1 - 2
Hit Hard by COVID-19 in the Land Below the Wind	3 - 5
Time Out to the Land of the Rising Sun	7 - 8
AD & ED: The Rise of a New League	9
Perioperative Point-Of-Care Ultrasonography (POCUS) - Just Billboard Advertising or a Miner's Canary?	11 - 14
Evolution of the Fee Schedule: Introduction & MMA Schedule of Fees	16 - 21
Anaesthesia Day Celebration in KPJ Pahang Specialist Hospital	23
National Anaesthesia Day in KPJ Puteri Specialist Hospital	25
Team Spirit in COVID Times Brings Reality into a Virtual World	27 - 28
Celebrating World Anaesthesia Day 2020 in the Era of Pandemic	29
World Anaesthesia Day 2020 Hospital Enche' Besar Hajjah Khalsom Kluang Johor	31
"Light in the Midst of Chaos"	33 - 34
Two Sets of Conjoined Twins Successfully Separated at Tunku Azizah Hospital, Kuala Lumpur	
My Training Experience in Singapore	35 - 36
London Has Fallen	37 - 38
DeLIVERing Blessings Amid The Chaos	39 - 40
Immediate Postoperative Extubation in Paediatric Cardiac Service in Malaysia: Is it Revolutionary or Just a Dream?	41 - 42
First Living Related Liver Transplant in Tunku Azizah Hospital, Kuala Lumpur	43
From Minor Hospital to State COVID-19 Hospital: Hospital Enche' Besar Hajjah Khalsom Kluang	45
The End Game For Ventricular Fibrillation Storm After Aortic Declamping - Hospital Sultanah Aminah Johor Bahru Experiences	47 - 52
Welcoming the Anaesthesiologists 2020	53
Message from the President of the College of Anaesthesiologists, AMM	55 - 56



# Hit Hard by COVID-19 in the Land Below the Wind

by Dr Shazharn Muhammad Zain

It is still hard to believe that almost a year has gone by and we are still battling COVID-19. In early March of last year, news broke of several positive COVID-19 cases in Brunei among attendees of a religious gathering in KL. This event was attended by thousands of delegates from all around Malaysia including hundreds from throughout Sabah. Alarm bells started going off. Over the weeks, cases started popping up among attendees in all states and sure enough Sabah was not spared.

Slowly the number of daily new cases started to rise. Back in those early days of the second wave, people started getting alarmed when over 100 new cases per day were announced several days in a row. Before then, the nation had only seen single or double-digit daily increases. The cumulative number of cases nationwide had yet to even reach 1000. When the nation reported its first two deaths on 17<sup>th</sup> March 2020, that was when reality started to sink in. The pandemic has arrived in Malaysia.



*Our intensivists Dr Khoo Tien Meng and Dr Fong Kean Khang changing a COVID-19 patient's blocked ETT in the ICU*

The first MCO which began on 18<sup>th</sup> March 2020 eventually slowed down the spread of infection. Sabah, once a haven for domestic and international tourists was suddenly devoid of these holidaymakers almost overnight. With retail outlets shuttered down and with supermarket and restaurant operating hours drastically reduced, most people were forced to stay at home and the streets of KK were eerily deserted as early as 7.00pm.

In anticipation of a surge in new cases, Hospital Queen Elizabeth (HQE) shifted all surgical services to nearby HQE II. HQE was designated as a full COVID-19 hospital and most of the remaining resources were diverted towards managing COVID patients. On 23<sup>rd</sup> March 2020 we intubated our first COVID-19 patient in the ICU. The total number of cases in Sabah had not even reach 200 cases at this point. Sabah was still spared the full brunt of things. No one ever anticipated how bad it would get in Sabah towards the end of the year.



*Specialist Dr Noorazwati Ismail assisting Dr Herna Marlynnie Mursaid donning up before entering ICU*

Over the following months the number of new cases slowly started to dwindle. The nation boasted about back-to-back days of zero new local infections. The MCO was downgraded to a recovery MCO with loosened SOPs in order to stimulate the economy. Most businesses resumed as did domestic tourism. Things seemed to be well under control. Tourism in Sabah slowly started to pick up once again with resumption of flights from Semenanjung. The malls

and beaches were once again seeing crowds with only the mask on everyone's face as a reminder that the virus is still out there. Unfortunately in Sabah, it did not take long for the virus to reemerge in the community.

In early September, a cluster of new cases appeared in the east coast of Sabah. Initially confined to a detention centre in Lahad Datu, this soon spread to another detention centre in Tawau almost 150 km away. These contained outbreaks somehow slowly seeped out into the community in these townships but thankfully the rest of Sabah was still spared at this point.

The Sabah state elections on 26<sup>th</sup> September 2020 was a turning point for the entire nation.

The campaign period in the weeks before the elections saw masses of crowd movement in the entire state. Despite several localities in Sabah labelled as red zones, politicians, supporters, election observers and the media were freely going out and about in towns and villages in these areas and throughout Sabah. We were horrified to see with our own eyes and on social media, people showing complete disregard to SOPs during this period. Crowds were gathered in towns and kampungs greeting each other with handshakes, displaying minimal social distancing and some of them did not even have face masks on. There was no doubt that things were going to get out of control in the weeks after the election.

As anticipated, a few of the hospitals on the east coast soon started getting inundated with new cases. Many patients were from distant and rural areas with logistical difficulties in transportation. Some of them presented late and were critically ill by the time they were in the hospitals. An SOS was made out from these east coast



hospitals for manpower and essential equipment to be sent from other hospitals within Sabah. Several of our MOs and one of our specialists bravely volunteered to the forefront to assist the east coast. Little did we know that soon our own hospital would be just as badly affected.

Cases in KK started to rise rapidly from early October 2020. Several of the initial patients that presented to our ICU had travel history to red zones during the state elections. Soon we had our own outbreaks in the two detention centres in KK with many critically ill inmates ending up in our ICU. This time around the pandemic has well and truly hit HQE.

The surgical disciplines had already shifted back from HQE II to HQE a few months prior and had resumed cancer and semi emergency surgery in HQE. Now once again they were instructed to shift to HQE II to enable HQE to function as a full COVID hospital. Within weeks most of the wards in HQE were converted to COVID isolation wards as one by one these wards were filling up to maximum capacity. In early October 2020, our 16 bed ICU was converted to full COVID ICU. The neighboring Medical HDW was later converted into an COVID ICU extension with the capacity for an additional 26 beds managed together with the medical department. This increased our total intensive care capacity for critically ill COVID-19 patients to 42 beds.

A fully computerised Critical Care Information System (CCIS) was installed in our ICU in September. The entire department completed user training by the end of September and on 1<sup>st</sup> October 2020 the system was up and running in the ICU. While getting used to the system during the initial few days, we continued with parallel paper charting in the ICU. On 4<sup>th</sup> October 2020, all ICU documentation was carried out fully on CCIS. The timing could not have been more perfect. When the ICU was converted to a full COVID ICU, this system enabled us to improve our work processes by obviating the need for handling possibly contaminated paper documents within the sealed off ICU.

CCIS also enabled us to improve our handover of critically ill ICU patients. By linking the computer in our department to the system and to an LCD projector, the entire ICU team was able to view all charts and documentations outside of the ICU during the handover. Our three times daily rounds were first done remotely in

the department office, after which the donning ICU MOs and specialists would don and enter the ICU for physical rounds. The morning remote handover rounds were also recently broadcasted online via Webex on a private link. With the aid of a conference microphone speaker donated by one of our intensivists recently the rounds were also accessible online by department personnel.

A seminar room located outside the department was converted into the ICU control room at the start of the current wave. Computers linked to CCIS allowed the team here to coordinate with the team donned in the ICU. The control room allowed the ICU team to remotely access and update the progress notes of our ICU patients, update medication charts, collect essential daily ICU statistics as well as update the national ICU database.

The department purchased four smartphones using our department coffee club funds and personal staff donations. The subscription fees for these phones were sponsored by one of our specialists and by a telco. Should problems arise in the ICU, these phones enabled the donned team in the ICU to perform live teleconsultations with the team outside of ICU. The most valuable use of these smartphones has not been for the ICU team but for the patients and their relatives. With these phones we were able to video call relatives to allow them to speak to or see their critically ill family members. This simple act helped a lot of families dealt with the burden of not being allowed to visit their loved ones in ICU. The ICU team also used these phones to regularly update family members on patients' conditions.

Modifications were also made to our roster in order to cope with the changes COVID-19 brought to our services. Four separate teams were formed to take charge of different areas under our care. One team each was assigned to the ICU, the HDW (functioning as an extended ICU), periphery and the operating theatre. An additional on-call team was formed in order to attend to all COVID referrals. To prevent burnout and to lighten the teams' workloads, we implemented a shift system so that at any time of the day or night, there were more doctors present at the hospital than before. This was vital due to the cumbersome delays and hassles associated with donning and doffing each time a team entered and exited these separate COVID areas.

By November 2020, Sabah was now well and truly the epicentre of the pandemic with the number of daily cases in the hundreds. Donations of much needed equipment and PPE started pouring in from individuals and NGOs. We are extremely grateful to all who have donated during this difficult period and to all those who have coordinated the donation efforts. An emergency procurement of essential equipment was also made by KKM to cater for further expansion of critical care beds in the hospital.



*Specialist Dr Teh Tian Siang & MO Dr Siti Nurhakimah Mohd Johar all donned up for battle*



With the sudden surge of critically ill patients in our ICU, at least we need not worry about the lack of equipment or PPEs in our hospital.

Throughout this period, the hospital administration and all departments worked together tremendously well under pressure in order to get things under control. All departments dutifully sent MOs and nurses to man the hospital's 16 isolation wards with a total capacity of close to 600 beds. Within our department, lethargy was setting in for some due to long hours and frequent on calls. Despite this, morale was always kept high due to the camaraderie displayed by each and everyone in the department especially by our two dedicated intensivists. Towards the end of October 2020, two specialists, three MOs and 29 nurses were mobilised by KKM from West Malaysia to assist us in our battle. Though their stint in HQE was temporary, we are grateful for their willingness to come all the way to Sabah and to help reduce our burden during this period.



ICU MOs updating patients' medications on CCIS in the control room

The pandemic hit closer to home towards the end of 2020 when one by one, few nurses and doctors in the department and their families were tested positive. Numerous staff members had to be tested and undergo quarantine. Thankfully there was no spread within the department and our services were able to continue unhindered. All who got infected recovered well from their infections and have since returned to work to continue the battle.

The Christmas and New Year holiday period was a worrying time for us in the department. The CMCO had become too lax by December 2020 despite Sabah having an average of 454 new cases per day in November 2020 and 266 new cases per day in December 2020. Malaysia saw an average of 1410 new cases per day in the first three weeks of December. No matter how high the figures, the public seemed to have gotten "immune" to seeing these high numbers. There were no restrictions on inter-district and interstate travel during this period so

many took the opportunity to *balik kampung* or to go on holidays during the long weekends. There were large crowds at the beaches, at the malls, at restaurants and at holidays spots around Sabah. People proudly posted on social media of Christmas and New Year gatherings at homes and restaurants with little regard to mask wearing or social distancing. Another surge was bound to happen and sure enough not long after the New Year, the entire nation started seeing a tidal wave.

The aftermath of the Christmas and New Year holidays saw Malaysia hitting a steadily rising number of new cases. Sabah averaged 400 new cases per day since the New Year with no signs of abating. Selangor was now the new epicentre of the outbreak and had recently overtaken Sabah's total number of cases. Many of us were hoping for another MCO to stem the rise in new cases but as the numbers continued to rise steeply in the first week of January, there was still no MCO. 7<sup>th</sup> January 2021 saw a record number of new cases and the first time the total number of new cases in Malaysia breached 3000 per day. Since then, the record daily tally of new cases has repeatedly been broken. Finally, much to the relief of us working at the frontline, the second MCO commenced on 13<sup>th</sup> January 2021. Malaysia hit a new record of 4029 new cases three days later.

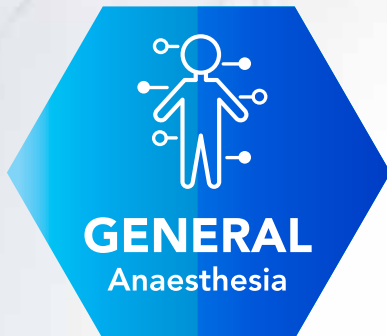
At the time of writing, the total number of cases worldwide has almost reached 100 million with over 2 million confirmed deaths. In Malaysia we have seen consistent four digit daily new cases for the past 7 weeks. Our ICU beds in HQE have repeatedly run over the maximum capacity and plans were underway to open another 28 critical care beds increasing the total to 70 beds. The main hurdle at the moment is the lack of nursing staff which the state health department is working hard to overcome. Our journey is still far from over even with the vaccine not far in the horizon. All we can do now is to continue to do our best for the patients under our care, to look after our own physical and mental well-being and to continue to pray that the people of Malaysia, and the powers that be, make only the right decisions henceforth.



Our ICU nurses are the backbone of our intensive care services



THINK ANAESTHESIA  
THINK ASPEN



Ultiva  
Remifentanyl hydrochloride

Diprivan  
propofol

 **Naropin**  
(ropivacaine HCl)

Marcain  
bupivacaine hydrochloride

Xylocaine  
lidocaine hydrochloride



MivACRON  
mivacurium chloride

 **NIMBEX**  
cisatracurium besylate

Tracrium  
atracurium besylate

For more information, please refer to full prescribing information

For healthcare professionals only



Aspen Medical Products Malaysia Sdn. Bhd.

Unit 1302a, Level 13a, Uptown 1, 1 Jalan SS21/58, Damansara Uptown,  
47400 Petaling Jaya, Selangor, Malaysia. Tel: 603-7733 9795 Fax: 603-7733 9796

Trademarks are owned by or licensed to the Aspen group of companies. © 2020 Aspen group of companies or its licensor. All rights reserved.

MY-BUP-002-P.06.2020



# TIME OUT TO THE LAND OF THE RISING SUN

by Dr Noraslawati Razak

In December 2019, I made a journey to Tokyo for a time out from my busy life as an obstetric anaesthesia trainee in Hospital Sultanah Nur Zahirah, Kuala Terengganu, a busy hospital with an approximate 17000 deliveries annually. My time out was at the St. Luke International Hospital Tokyo, acquiring further knowledge and experiencing a different practice in obstetric and gynaecology anaesthesia.



## Obstetric and gynaecology anaesthesia practice in St. Luke International Hospital.

St. Luke International Hospital provides anaesthesia and analgesia services for obstetrics and gynaecological procedures. All patients are seen in the anaesthesia clinics for pre-anesthetic assessment, including patients who opted for epidural labour analgesia. Every day at 1500 hrs, we have a pre-anaesthesia conference for all patients who are listed for surgery the next day and the conference will be led by the anaesthesiologist-in-charge (manager of the day). Our duty starts with case discussion or morbidity review at 0730 - 0800 hrs; and on Friday morning from 0710 to 0800 hrs, we have an obstetric anaesthesia conference with visiting obstetric anaesthesia consultant, Professor Hiroyuki Sumikura from Juntendo University Hospital. At 0800 hrs, we start our duty in the Operating Room (OR).



In St. Luke University Hospital, there are 14 ORs, including one obstetric OR, two cardiac ORs and one hybrid OR and 10 labour rooms. The obstetric OR is situated in the labour room.

Before the start of the Caesarian sections, we have a morning round with the obstetricians in the labour room,

followed by morning rounds in the maternity ward. During the morning rounds, the midwives present the cases that are admitted in the labour



rooms and maternity wards. Then, all patients who are on epidural labour analgesia are reviewed. In St. Luke, labour analgesia is a 24-hour service, and almost 80% of the parturients received epidural analgesia. In Tokyo, epidural labour analgesia is the only pharmacological method for painless labour. Inhalational Entonox or parenteral opioids are never used for labour analgesia. All patients on epidural labour analgesia were reviewed hourly to two hourly. Pump intermittent epidural bolus (PIEB) protocol is used for the epidural.

Caesarean section rate in St. Luke's Hospital is about 20%. Almost 98% are performed under regional anaesthesia, either spinal, epidural or combined spinal epidural anaesthesia. All central neuraxial anaesthesia are done on the patients in lateral position. Rarely, we have a case of category one Caesarean section, as the obstetricians really practise in-utero resuscitation technique. The local anaesthetics and opioids combinations for both spinal and epidural techniques are similar to the Malaysian practice. In Tokyo, 6% Voluven is used as co-loading fluid for regional anaesthesia. Pre-packed 1.5% chlorhexidine for aseptic cleaning; and pre-packed spinal, epidural and combined spinal epidural sets are available.

Gynaecological procedures are mostly done laparoscopically, while Total Intravenous Anaesthesia using Propofol and Remifentanyl Target Controlled Infusion pumps with Sedline anaesthesia depth monitor is the only anaesthesia technique.



## Research and Teaching Opportunity at St. Luke International Hospital

In St. Luke, I was invited to become a co-researcher, in one of the research projects by an anaesthetic nurse for his PhD program; and the research is currently awaiting publication. As for teaching, I had an opportunity to



mentor two foreign medical students from Australia and the UK during their elective postings. I was also involved in the obstetric anaesthesia simulation on COVID-19 obstetric patient planned for a category one emergency Caesarean.

### Anaesthesia for Foetal Surgery in Tokyo

With the assistance of Professor Nagasaka, I did a stint at the National Center for Child Health & Development, Setagaya, Tokyo or known as Seiiku Hospital which is the only hospital in Japan that performs foetal surgery. They regularly perform Ex Utero Intrapartum Treatment (EXIT) procedure, fetoscopic laser therapy (FLT) for twin to twin transfusion syndrome (TTTS), radiofrequency ablation (RFA) for twin reversed arterial perfusion (TRAP) and fetoscopic endoluminal tracheal occlusion (FETO) for congenital diaphragmatic hernia. The obstetric anaesthesiologist will administer combined spinal epidural anaesthesia (CSEA) for the parturient.



In Seiiku Hospital, external cephalic version (ECV) for breech is also done under CSEA. I am grateful that, throughout my one month stay in Seiiku Hospital, I was able to assist in anaesthesia management for FLT, RFA, FETO, EXIT and ECV.

### What a challenging case! A big WOW!

In Tokyo, I was invited to Tokyo Women's Medical University Hospital (TWMU) by Professor Dr Nagasaka. In TWMU, I observed the anaesthesia care for a second Caesarean in a mother with Fontan circulation. It was a great challenge to manage such a case, as it was my first time meeting a pregnant lady with Fontan circulation. The anaesthesia was performed by a cardio-thoracic anaesthesiologist who has vast experience anaesthetising women with Fontan circulation for Caesarean sections. He has managed 10 such cases. Only one case was performed under CSE, the other cases were done under general anaesthesia. Amazingly, the patient was able to be extubated immediately post surgery.

### Meeting the Teachers in Tokyo

I had the opportunity to visit Juntendo Nerima Hospital and Juntendo University Hospital. Juntendo Nerima Hospital is a district hospital that runs anaesthesia service including obstetric anaesthesia and analgesia services, led by Dr Hisako Okada. In Juntendo University, I was invited by Professor Hiroyuki Sumikura to visit his university and deliver an online CME presentation on postpartum neuropathy to the anaesthesiologist in his university.



### COVID-19 in Tokyo

The Japanese Society of Anesthesiologists has published guidelines on Anaesthesia Safety in the Management of Suspected or Confirmed COVID-19; including one on the Anaesthesia Management for Caesarean Section in patients with suspected or confirmed COVID-19.



### Hard to Say GOODBYE

I met wonderful teachers and friends here. My short stay in Tokyo gave me millions of great memories to remember.





# AD & ED: The Rise of a New League

by Dr Khairul Idzam Muslim & Dr Wan Nabilah Nik Nabil

Anaesthesia Department (AD) and Emergency Department (ED) in Hospital Kuala Lumpur are two distinct departments, yet we share a few similar traits. In the past, we collaborated on projects mainly in airway management, but a collaboration in Regional Anaesthesia (RA) has never materialized until 2020 when ED requested for a RA workshop for their Emergency Physicians (EPs) and Medical Officers (MOs).



*The League: Anaesthesia Department & Emergency Department Hospital Kuala Lumpur*

It was initially difficult to align our visions for RA, but after gaining mutual respect and understanding our different roles, with the aim to achieve excellent clinical outcomes, the ED and Anaesthesia RA (EDARA) workshop was successfully conducted on 8<sup>th</sup> February 2020 and 14<sup>th</sup> February 2020 with lectures and hands-on session, respectively. The lectures were delivered in our Anaesthesia Clinic (located in the 7<sup>th</sup> floor SCACC HKL) while the hands-on sessions were conducted in the General Operating Theatres (GOT). The workshop participants were EPs from HKL and Hospital Sungai Buloh as well as our Anaesthesia MOs, totalled at 24. After this successful collaboration, Regional team HKL and UGRA EDHKL decided to regularly conduct four-monthly RA workshop, to allow more EPs and MOs to gain experience in performing RA. However, our plan came to a halt due to the exponential rise of COVID-19 cases and the implementation of MCO from 18<sup>th</sup> March 2020 until 4<sup>th</sup> May 2020.

As the COVID-19 cases eased down in the second half of 2020, we picked up the pace and proceeded with our previous plan in early October 2020. Due to the strict adherence of physical distancing, we decided to conduct a virtual workshop with hands-on session in ED. Despite initial hurdles, the Regional Zone was officially started in Yellow Zone, ED HKL on 27<sup>th</sup> October 2020. It is the first of its kind in Malaysia and we hope this zone will become an inspiration for other hospitals. Up until January 2021, we performed 42 blocks without complication in this zone, with most of the cases as manual reductions and pain management for polytrauma.

After weeks of preparation and planning, Virtual Regional Anaesthesia Workshop became a reality on 7<sup>th</sup> November

2020. The 2½ hours workshop emphasized on RA for emergency and trauma; mainly for shoulder, hip and chest trauma. After each lecture, pre-recorded block demo videos were shown to the audience. This workshop had attracted 160 participants nationwide, from both anaesthesia and emergency medicine. The 2½ hours hands-on session was later conducted in GOT HKL on the same day. The session observed strict SOPs and physical distancing, and only eight anaesthesiologists were allowed to participate in the session.

A month later, from 7<sup>th</sup> till 10<sup>th</sup> December 2020, delayed hands-on sessions for ED team were conducted in the Regional Zone, ED HKL. The session was divided into two: morning session from 0900 until 1130 hrs, and afternoon session from 1400 until 1630 hrs. The workshop participants were mainly EP from the total of 18. Their feedbacks were positive. This session had opened their eyes to the wonders of RA, and they pledged to practise RA in ED.



*The Dream Team: SIGRA Hospital Kuala Lumpur*

This is not the end of our collaboration, but rather a beginning. By consistently sharing knowledge and understanding each other's needs, we plan to tailor RA skills to ED scenarios, whereby it can be easily repeated and continuously practised with minimal risk to patients. Hence, rather than putting up barriers, we should be building bridges to strengthen the interface between our specialties.



*Virtual Regional Anaesthesia Workshop: Behind the Scenes*



## PROTECTING & IMPROVING THE HEALTH OF PEOPLE AROUND THE WORLD

With 64,000 employees in 64 countries, B. Braun is one of the world's leading healthcare providers, specializing in solutions related to infusion therapy, orthopaedics, neurosurgery, anaesthesia, extracorporeal blood treatment, spine surgery, diabetes care, clinical nutrition, wound management, infection prevention and surgical technologies. Around the world, B. Braun's products are trusted for their high quality and high safety standards.

[www.bbraun.com.my](http://www.bbraun.com.my)



# Perioperative Point-Of-Care Ultrasonography (POCUS) - Just Billboard Advertising or a Miner's Canary?

by Dr Ahmad Afifi Mohd Arshad & Dr Shahridan Mohd Fathil

## INTRODUCTION

Despite the advancement of patient monitoring, the safety of the patient in the perioperative period mainly depends on the vigilance of the anaesthesiologists.<sup>1</sup> Ultrasound (US) in regional anaesthesia, since the turn of the century, has been proven to be a more successful guidance modality over nerve stimulation and loss-of-resistance technique, as well as a tool for the prevention of inadvertent complications.<sup>2</sup> The US has become an indispensable tool for the anaesthesiologists, not just for procedural guidance, but also as a perioperative diagnostic and monitoring tool.<sup>3</sup>

This article, as an introduction of a series, will briefly discuss the role of POCUS in perioperative period, other than for regional anaesthesia and vascular access, as well as the training to acquire and maintain the competency.

## THE EVIDENCE

In a systematic review, the authors concluded that focused echocardiography has significant diagnostic and decision-making impact in the perioperative and critical care setting. However, most of the included studies were confined to non-randomized observational studies, with very few examining patient outcome.<sup>4</sup>

More than a decade ago, a prospective cohort study showed a 82% change in perioperative management following indicated focused transthoracic echocardiography. The changes were placement or avoidance of invasive monitoring, referral for a formal echocardiogram, fluid bolus or restriction, change in the anaesthesia technique, administration or cessation of vasoactive drugs, decision for intensive postoperative care and case cancellation.<sup>5</sup>

The understanding of the cardiac function and lung pathology of the perioperative patient may influence our decision for the optimal anaesthesia technique. A more refined and gentle anaesthesia technique which may include regional anaesthesia or analgesia may be offered in a controlled, intensively monitored environment, contributing to a successful outcome.

A recent international US expert panel outlined recommendations for using US-guided examinations and interventions related to respiratory, cardiovascular and thromboembolic aspects of COVID-19 infection.<sup>6</sup> In this pandemic, replacing a basic stethoscope with a portable, easily cleaned ultrasound probe may improve our ability to assess various organ functions and detect specific pathologies.

## PERIOPERATIVE APPLICATION

### The Neck and Airway

In our practice, the most common site for scanning in the neck is the jugular vein for vascular access. US guidance for central venous cannulation has become a standard in developed healthcare systems. The US use in mapping out the jugular anatomical course, its relation to the carotid artery, and its luminal size have contributed to a highly successful single attempt jugular cannulation with minimal complications.

The uptake of airway US may be the poorest among the modalities of Perioperative POCUS. However, the airway identification in elective and emergent situations is very useful. We have assisted our Otorhinolaryngology (ORL) colleagues by insonating the cricoid cartilage and tracheal rings for difficult airway cases. Instead of making a colossal collar incision, they could limit the slit on surface marking and approach the airway layer by layer.

Other uses of airway US include sizing of the paediatric airway, guidance for percutaneous cricothyroidotomy and tracheostomy, confirmation of endobronchial intubation confirmation, identification of oesophageal intubation, prediction of possible difficult airway, assessment of laryngotracheal mass, grading of laryngotracheal injury and evaluation of vocal cord functions.<sup>7</sup>

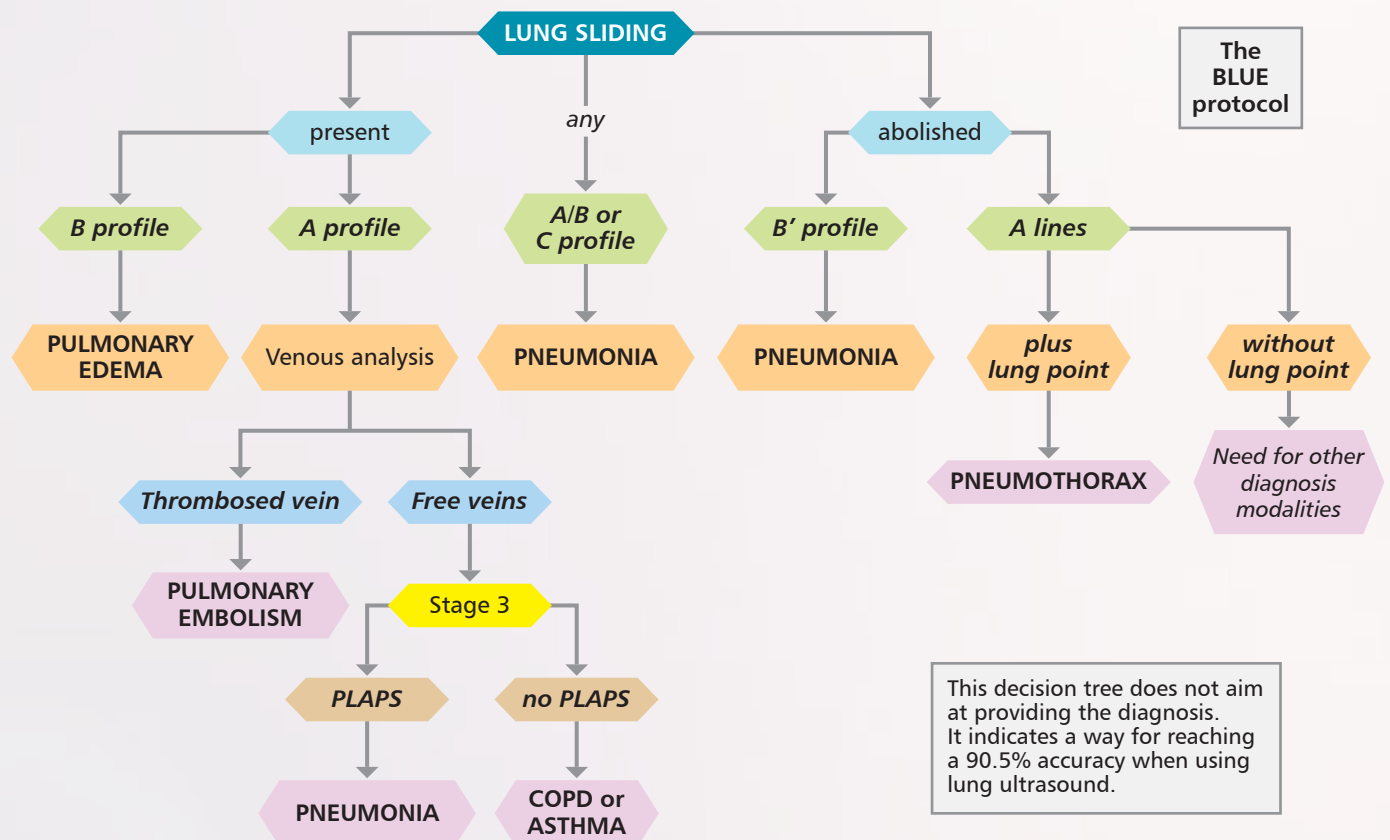
### The Lung

The whole idea that sparked the excitement in lung ultrasound could be summarized in the words of the father of lung scan Daniel Lichtenstein; "Lung ultrasound was a free field, not occupied by the specialists of imaging. Therefore, a whole terminology had to be created for making the lung transparent".

He described the 'BLUE Protocol'; which is essentially a POCUS Algorithm, a stepwise approach in identifying the most likely of lung pathology.<sup>8</sup> One needs to be familiar with lung US sonographic descriptors such as sliding sign, stratosphere or seashore pattern, A-lines, B-lines, Consolidation, lung pulse, lung point and posterolateral alveolar pleural syndrome (PLAPS). Just like how we learn

to appreciate and refine auscultatory findings, lung US needs training and practice.<sup>9</sup>

Beside diagnostic POCUS, a lung scan enables the safe performance of thoracentesis at an accurate site. The previous practice of marking the site in the radiology suite and doing the tapping in the ward may not be the best approach, as the optimum site may change with posture.



**Figure 1:** BLUE Protocol decision tree described in its original paper to guide diagnosis of severe dyspnea<sup>8</sup>

## The Heart

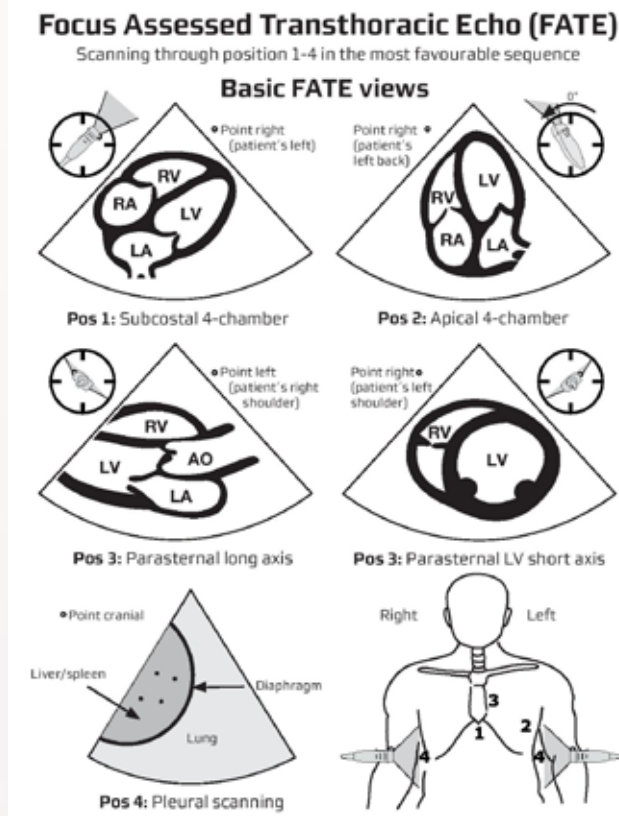
Transthoracic focused echocardiography captures perioperative haemodynamic events that may infer causative effects of hypovolemia, thromboembolism, myocardial dysfunctions, tamponade or related valvular lesions. The main pathology may be an acute event or an inherent chronic condition or a combination of both.

Cardiac anaesthesiologists have been at the forefront of intraoperative transoesophageal echocardiography. However, the transthoracic approach has not gained the same popularity. The obstacles for the poor access to focused echocardiography in the preoperative phase include Inadequate training and unavailability of the US

system in the pre-anaesthetic clinic. On the other hand, the use of mechanical ventilation, sharing the surgical area with the surgeon, performing in non-ergonomic and non-classical approach, inadequate access to decent cardiac probes and lack of training are among the list of realistic obstacles during or after surgery.

Modified Focused Assessed Transthoracic Echo (FATE) protocol is a well-validated POCUS protocol for perioperative use by anaesthesiologists and critical care physicians. Feasibility studies have also shown that FATE is applicable intraoperatively, albeit with slight difficulty in image acquisition in patients with emphysema, COPD and morbid obesity.<sup>10</sup>





**Figure 2:** Modified FATE Protocol using 'pattern phenotyping' to facilitate POCUS diagnosis<sup>10</sup>

### The Gastric Scan

Pulmonary aspiration of gastric contents carries a high rate of morbidity and mortality. Gastric ultrasound adds on a safety net to aspiration risk assessment perioperatively, especially in the high-risk population. Clinical indications include severe chronic disease that delays gastric emptying, such as diabetic gastroparesis and end-stage kidney disease, unconfirmed prandial status as in dementia or other causes of incommunicado patients, and in special population, for instance morbid obesity, paediatric and obstetric patients.

Gastric scan can be performed qualitatively in supine and right lateral position at the antrum level to look for clear fluid or solid gastric content. If permissible, quantitate scanning can estimate the volume of gastric contents based on a reference table to the antral surface area in the right lateral decubitus position. A volume of  $>1.5\text{ml/kg}$  is considered high risk.<sup>11</sup>

We find it particularly useful in paediatric patients with pyloric stenosis who may benefit more from repeated postural drainage of gastric contents based on gastric scan evaluation.

### The Algorithm

A comprehensive POCUS framework and algorithm is necessary to facilitate the teaching and performance of POCUS. I-AIM is a short form of (I)ndication, (A)cquisition, (I)nterpretation and (M)edical decision-making that is recently endorsed by POCUS advocates for training and clinical performance. The table below provides a model of I-AIM framework for physician-performed POCUS.

**Table 1:** I-AIM Model for physician-performed POCUS, originally developed for educational and clinical practice model by The Ohio State University College of Medicine<sup>12</sup>

Indication	<ul style="list-style-type: none"> <li>Evidence-based</li> <li>Mechanism-based</li> <li>Scope of Practice</li> </ul>
Acquisition	<ul style="list-style-type: none"> <li>Patient - Positioning, Exposure, Draping, Surface Preparation</li> <li>Probe - Transducer, Acoustic Medium, Hand Position, Location</li> <li>Picture - Scan, Knobology, Image Capture, Advanced Application</li> <li>Protocol - Image/Video Recorded</li> </ul>
Interpretation	<ul style="list-style-type: none"> <li>Near and far field</li> <li>Leading and receding edge</li> <li>Identification of landmarks</li> <li>Echogenicity of relevant structures</li> <li>Juxtaposition of neighbouring structures</li> <li>Artifact recognition</li> <li>Pattern recognition</li> </ul>
Medical Decision-Making	<ul style="list-style-type: none"> <li>Clinical Context</li> <li>Pretest Probability</li> <li>Image Analysis</li> <li>Physician Interpretation</li> </ul>

Some exceptional protocols combine 'pattern phenotyping' in the basic algorithm to assist in the diagnosis and problem-solving. A famous example is Modified FATE Protocol, in which characteristic pattern of abnormal scan findings in acute RV failure, myocardial dysfunction, cardiac tamponade and hypovolemia are phenotyped to facilitate diagnosis.

### Future Prospect and Limitation

Point-of-care device has been scaled-down both in size and knobology functions to accommodate more targeted, point-of-care assessment. The operation has now been automated to include machine learning and artificial intelligence, such that it would suggest a better probe position and provide instant real-time evaluation of volume status and cardiac functions.

In other words, POCUS is getting personalised. An expert in the field can be consulted promptly for a specific condition in a remote place off-shore, by a distant wireless connection with clouds saving the big data for processing. Nevertheless, we are limited by financial constraint to adapt to more advanced technology. Hence, basic and advanced POCUS training is mandatory to credential independent practitioners and specialised experts, to perform in a standard, highly efficient and refined manner.

Our fraternity must revamp training to address the real-life situation with clinical simulations. Equally important is the need to acquire images in properly organised storage to be evaluated and criticised for overall improvement.

#### REFERENCES

1. Recommendations for safety standards and monitoring during Anaesthesia and Recovery; Malaysian Society of Anaesthesiologists 1<sup>st</sup> Edition 1993
2. Marhofer P, Greher M, Kapral S. Ultrasound Guidance in Regional Anaesthesia. *BJA* 2005;**94**(1):7-17
3. Janelle G, London M. Perioperative Ultrasound: the Future is Now. *Anes Analgesia* 2016;**122**(6):1734-1736
4. Heiberg J, El-Ansary D, Canty DJ, Royse AG, Royse CF. Focused echocardiography: a systematic review of diagnostic and clinical decision-making in anaesthesia and critical care. *Anaesthesia* 2016;**71**(9):1091-100
5. Cowie B. Three years' experience of focused cardiovascular ultrasound in the peri-operative period. *Anaesthesia* 2011;**66**(4):268-73
6. Hussain A, Via G, Melniker L, Goffi A, Tavazzi G, Neri L, et al. Multi-organ point-of-care ultrasound for COVID-19 (PoCUS4COVID): international expert consensus. *Crit Care* 2020;**24**(1):702
7. Osman A, Kok MS, Wahab SFA. Focused Airway Ultrasound: an Armamentarium in Future Airway Management *JECCM*. 2019;**3**:31
8. Lichtenstein DA, Mezière GA. Relevance of lung ultrasound in the diagnosis of acute respiratory failure: the BLUE protocol. *Chest* 2008;**134**(1):117-25
9. Haskins SC, Tsui BC, Nejm JA, Wu CL, Boublik J. Lung Ultrasound for the Regional Anesthesiologist and Acute Pain Specialist. *Reg Anesth Pain Med* 2017;**42**(3):289-98
10. Holm JH, Frederiksen CA, Juhl-Olsen P, Sloth E. Perioperative use of focus assessed transthoracic echocardiography (FATE). *Anesth Analg* 2012;**115**(5):1029-32
11. Haskins SC, Kruisselbrink R, Boublik J, Wu CL, Perlas A. Gastric Ultrasound for the Regional Anesthesiologist and Pain Specialist. *Reg Anesth Pain Med* 2018;**43**(7):689-98
12. Bahner DP, Hughes D, Royall NA. I-AIM: a novel model for teaching and performing focused sonography. *J Ultrasound Med* 2012;**31**(2):295-300

#### CONCLUSION

In summary, this article aims to introduce a series of point-of-care ultrasound approach in perioperative settings. In the following newsletters, we would discuss the topic of POCUS on neck and airway, lung scan, focused echocardiography, gastric scan and special situations.

For many, this quote is exceptionally relevant in describing the experience in POCUS; 'In regione caecorum rex est luscus', translated as 'In the valley of the blind, the one-eyed man is king'. Deserius Erasmus wrote it in the Adagia collection circa 1522.

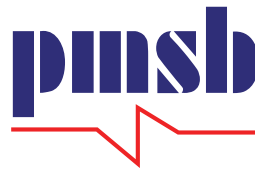
POCUS, for us, is akin to a modern-day canary that used to serve miners deep underground. A tool so critical that if the canary manifests any signs of sickness, it indicates an urgent need to emerge for survival.



*The Executive Committee of the Malaysian Society of Anaesthesiologists congratulates Professor Dato' Dr Mohd Basri Mat Nor for being appointed to the Intensive and Critical Care Medicine Committee of the World Federation of Societies of Anaesthesiologists.*



*With Best Compliments  
From*



**PRIMED MEDICAL SDN BHD** (249939-U)

No 15, Jalan DBP 3, Dolomite Business Park,  
68100 Batu Caves, Selangor Darul Ehsan

Tel: 603-6185 1824; 603-6185 1827

Fax: 603-6185 1834

Email: [primed\\_07@yahoo.com](mailto:primed_07@yahoo.com)

**Ambu** 

Anesthesia Airway, Video Laryngoscope,  
Flexible Bronchoscope, Supraglottic Airway,  
Resuscitators

**CADD** <sup>TM</sup>

Ambulatory Infusion, Pain Management

**GRASEBY** <sup>TM</sup>

Infusion Systems

**LEVEL 1** <sup>®</sup>

Temperature Management

**medfusion** <sup>TM</sup>

Infusion Systems, Infusion Disposables

**Pneupac** <sup>TM</sup>

Transport Ventilators

**PORTEX** <sup>®</sup>

Anesthesia Airway, Drainage System, Tracheostomy  
Tubes & Kits, Respiratory, Pain Management

**Penlon** 

SOT, MRI Anaesthesia System

 **Unomedical**  
A Convatec Company

Thalaset

# Evolution of the Fee Schedule: Introduction

## PART I

by Dr Gunalan Palari Arumugam

Way back in 2006, the President of the Malaysian Society of Anaesthesiologists, Dr Ng Siew Hian, and the President of the College of Anaesthesiologists, Professor Dr Chan Yoo Kuen, highlighted that with the passing of the Regulations to the Private Healthcare Facilities and Services Act (1998) PHFSA with the Regulations implemented on 1<sup>st</sup> May 2006, there was one area of the Act among others that concerned many of us.

This area was where the Regulations stipulated that the maximum professional fees chargeable by the anaesthetist follows the MMA Schedule of Fees (4<sup>th</sup> Edition), which stated that anaesthetist's fees were separate from the surgeon's fees. Therefore the Act (with its Regulations) recognised Anaesthesia as a separate specialty, with separate charges; no longer a percentage of the surgeon's fee.

The Society and the College took a stand then that this was something that anaesthetists had strived to achieve for many years and finally succeeded. We were no longer a mere appendage of the surgeon, charging a percentage of the surgeon's fee but we were recognised as professionals in our own right. Over the years, through the vision and hard work of our senior members, we had succeeded in getting a separate fee schedule for anaesthetists. To return to the "one third of the surgeon's fee" practice would be a step backwards - putting us at the mercy of surgeons and denying us our due recognition. We must stand together as a profession and support each other in this very important principle, that we are professionals in our own right.

I now urge our younger members to spend some time and read the articles relating to the fee schedule that we have prepared in this edition of Berita Anesthesiologi. Much credit goes to our past Presidents and Executive Committee members and not forgetting Dr Mohamed Namazie and his team who spent many hours deliberating and coming up with a fee schedule that we have now taken for granted.

The development of the fee schedule was not without pain or heartache. We now have a system where the fees are regulated and patients are much more aware of the fees that are charged for their procedures rather than allowing it to be dictated by free market forces, surgeons or hospitals which may create unnecessary situations like professionals undercutting each other.

We want our independence and recognition of the complexities of our field, not the complexities of what the surgeon are going to do independently. Incision and drainage may be a simple procedure for the surgeon, but a septic unwell patient who may collapse on you poses a completely different situation altogether.

So, after understanding how we got here, do spend some time reading the last of the three articles on Fee Schedule which we will cover in the next edition of Berita Anesthesiologi. We will touch upon the MMA's latest fee schedule, the MMA Fee Schedule (5<sup>th</sup> Edition) published in 2008 and republished recently as Medical Procedures and Services Nomenclature (MPSN) 2020 version 2. The Ministry of Health has for now given permission for healthcare facilities and doctors to use MPSN 2020 V2 for procedures that are not found in the 13<sup>th</sup> Schedule (Amended 2013) of the PHFSA. We will also touch on how professional fees are calculated in other parts of the world and whether a relook into our fee schedule may be warranted to reflect more independence of our fees based on the unique nature and risks of the work that we do that does not always needs to be tied in with the surgeon's fees.





# Evolution of the MMA Schedule of Fees

by Dr Mohamed Namazie

## INTRODUCTION

In the early 1980's the Ministry of Health of Malaysia (MOH) commissioned Westinghouse Corporation to study the desirable healthcare financing for Malaysia following an initial study by a WHO consultant from Australia who was funded by the Asian Development Bank. The Council of the Malaysian Medical Association formed a Health Insurance Committee (HIC) in 1986, which was chaired by Dato' Dr G A Sreenevasan to make proposals to the Westinghouse group and the MOH, which was then expected to introduce a National Health Insurance scheme to reduce Government spending on health care.

The first HIC had 11 members, including one anaesthesiologist (Dr Jenagaratnam). The HIC felt that a Schedule of Fees was necessary as its initial survey of general practitioners and specialists had indicated there was much disparity in what was being charged to the patients. There was a widespread perception that doctors charged fees at their whims and fancies, and indeed the Minister of Health at the MMA AGM in 1987 in Malacca was reported to have said in his speech that doctors probably decided each month how much money they wanted to make, and then tailored their charges and work to meet their target.

A Schedule of Fees was necessary if health insurance was to be introduced to enable the insurance providers to do the calculations of the premiums. A Schedule of Fees agreed upon by the doctors would be better than a schedule thrust upon the profession by the government or by the insurance companies as had happened in other countries (e.g. United Kingdom).

The Schedule of Fees which the HIC set out to create was meant to first protect the patients (who were not in a position to negotiate fees) from being overcharged. It would provide a guideline for both the doctors and the patients on reasonable charges for various services and procedures, based on factors which include complexity, time taken and likelihood of complications and litigation. The Schedule of Fees was not meant to be a mechanism for guarantee of income for doctors.

## CONSULTATION WITH THE SPECIALISTS ASSOCIATIONS AND SOCIETIES

After studying the fee schedules from Australia and the Californian Relative Value Studies, and their methodologies as well as the existing Schedule of Fees in the MOH governed by the Fees Act 1981 (are you

surprised? - the development of this schedule is another story!), the HIC called the various specialist societies and associations to discuss the Schedule of Fees that was being proposed. The Exco of the Malaysian Society of Anaesthesiologists (MSA) appointed three members of the Exco to present the views of MSA to HIC.

The brief given to us was that the anaesthesiologists' fees should be independent of the surgeons' fees and must be represented in a separate listing. Even if the fees were to be a percentage as was being widely practiced then, the listing of anaesthesiologists' fees should be separate from the surgeons' fees. We put forward this concept to the HIC which unfortunately was not prepared at that time to tolerate the streak of independence being displayed by the anaesthesiologists. It must be remembered that half the membership of the HIC consisted of doctors from the surgical specialties. There was strong objection to an independent anaesthesiologists' schedule and certain vociferous members of the HIC insisted on continuing with the existing practice of anaesthesiologists being paid a percentage of the surgeons' fees and their views prevailed. Their contention was that percentage fees was the norm and customarily practiced in Malaysia. The surgeons were the primary doctors who negotiated the fees with the patients and they were not prepared to accept a separate anaesthesiologist's schedule of fees. What struck me as being odd at that time was that we were preparing a Schedule of Fees for health insurance purpose as well and here we were being told that the surgeons would not accept a separate anaesthesiologist's schedule of fees. We informed the HIC that on principle a separate anaesthesiologist's schedule of fees was not a negotiable issue and a blanket percentage fee would not be acceptable to the anaesthesiologists. Since there was no sign of HIC relenting or finding a compromise, the MSA representatives left the meeting without agreeing to the HIC's proposal of a percentage fees. It left a deep impression on some of us at that time that the surgeons expected us to be subservient to them at all times. The financial implication of a separate anaesthesiologist Schedule of Fees to the surgeons was obvious as then most of the private patients were self paying. Hence the reluctance to accept an independent anaesthesiologist schedule of fees.

On 15<sup>th</sup> March 1987, the then President of MMA Dr Abu Bakar Suleiman released the "Report on Health Assurance and Health Insurance for all Malaysians and the first Schedule of Fees for Medical Services". The schedule was

noted for the absence of the anaesthesiologists' fees due to the reluctance of HIC to agree to the terms proposed by the MSA.

Though this schedule created an uproar in the media then, in reality it was not a satisfactory schedule because it was hastily created and published to fit in with the MMA's agenda to provide something tangible in time for the President of MMA to present, before he vacated office. There were inadequate public relation activities to soften the impact of new concepts of charging fees before the release of the schedule. What created the greatest concern to consumer groups and politicians was the novel idea of general practitioners charging a consultation fee separate from the charges for drugs and other services. As expected no one mentioned anything about the absence of anaesthesiologists' schedule.

#### **MMA SCHEDULE OF FEES 2<sup>ND</sup> EDITION 1992**

The deficiencies and the inadequacies of the first schedule became evident soon and the HIC proceeded to look at ways to improve it. It also had to deal with the issues arising from the report on health insurance and the Schedule of Fees, which had created widespread public debate and discussion and strong opposition from consumer and political organisations as well as several medical professional bodies. Certainly the anaesthesiologists were disappointed and extremely unhappy with the schedule as it did not recognise the specialty in its own right.

In 1991 the HIC studied the British United Provident Association (BUPA) relative value system (RVS) and adopted it for the next edition of the MMA Schedule of Fees. The procedure code used by BUPA had been worked out by the United Kingdom Office of Population Censuses and Surveys (OPCS). A license was obtained by MMA from BUPA and OPCS to use the RVS and the procedure codes and thus the next MMA schedule of procedures was created.

The MSA was once again called to present its views on the Schedule of Fees to the HIC for the second edition of the Schedule of Fees. The MSA representatives for this meeting consisted of Dr Vignasen who was then president of MSA, Dr K Mohandas and I. We presented the views of MSA, which was to insist on a separate listing for the anaesthesiologists fees, just as we had requested in 1987, and we presented the stand taken by the Association of Anaesthetists UK to have a separate schedule. We pointed out that no other specialists were paid a percentage of someone else's fees, and there was no justification for the anaesthesiologist fees to remain a

percentage of the surgeon's fees anymore. We further told the HIC the percentage mechanism was subject to abuse, suspicion and created unhealthy relationships between the surgeon and anaesthesiologist in many instances.

The second edition of the MMA schedule (1992) was the turning point in anaesthesiologists' fees schedule. The BUPA had adopted a separate listing for the anaesthesiologists' fees in 1990. This time around the HIC accepted the fact that the anaesthesiologists are specialists in their own right and deserved a separate listing in the Schedule of Fees just like other specialists and we have much to thank the anaesthesiologists in UK and the BUPA for this!

#### **BUPA SCHEDULE AND THE ROLE OF THE ASSOCIATION OF ANAESTHETISTS IN UK**

BUPA as a health insurance provider was formed in 1948 in the United Kingdom to reimburse professional fees to NHS Consultants who were doing private practice as well. It had produced a schedule of procedures in consultation with the British Medical Association. In the early days the BUPA did not have a separate anaesthesiologist's benefit level. It introduced a separate list for anaesthesiologists in 1979 till 1982. For some unknown reason it reverted to a single combined fee for both surgeons and anaesthesiologist again in 1982 till 1990! The anaesthesiologists then had to negotiate with the surgeons for their fees during this period.

You would now understand how our fees came about as a percentage of the surgeons' fees since nearly all our surgeons and anaesthesiologists were then trained in Britain and they brought to our shores what they had learnt over there. The scenario would have been different if our anaesthesiologists and surgeons had been trained elsewhere (e.g. USA).

The Association of Anaesthetists of Great Britain and Ireland (A&A) was not too pleased with the state of affairs of the private practice fees for the anaesthesiologists and it published a list of recommended fees which the anaesthesiologists should charge for their services. The list of recommended fees was published at two yearly intervals from 1982 to 1990. Perhaps as a result of this BUPA recognised the anaesthesiologists as being a distinct medical service provider and reintroduced the separate benefit levels for them after extended discussion with the Association of Anaesthetists in 1990. It was largely due to the untiring efforts of the A&A and the bold step taken by it to publish its own schedule that the anaesthesiologists in Britain we are able to achieve a



separate schedule. This separation of fees was also made possible as the British Medical Association had earlier endorsed the separation of surgeons' and anaesthesiologists' fees and had adopted this policy in its own guidelines on fees which was first introduced in 1989, two years after MMA had published its First Schedule of Fees.

During 1990 it became clear that publication of the A&A's own recommendations had largely achieved the recognition for a separate anaesthesiologists' reward which the A&A had been seeking and on a basis that was generally acceptable. As a result of this further publication of A&A list of recommended fees was discontinued in 1990.

The BUPA schedule of procedures and relative values had undergone several revisions and the current BUPA schedule of relative values consists of 25 groupings for surgeons and 25 groupings for the anaesthesiologists. The BUPA schedule of relative values has a minimum value for the anaesthesiologists from which the minimum anaesthesiologists benefit level is calculated. In the 2<sup>nd</sup> Edition of MMA schedule this translated to RM 175.00 and applied to the 5 sub-groups in the Minor category.

An analysis of the anaesthesiologists' fee reveals that the anaesthesiologist's fees were fixed between 35 to 41% of the surgeons' fees. The relative values for the anaesthetic procedures had not been clearly worked out and there were significant anomalies. It was therefore still a percentage based Schedule of Fees with most of the procedures at the 35% level of the surgeon's fees. Those procedures which had an apparently higher percentage were those with the minimum anaesthetic fees. Nevertheless, the concept of an independent Schedule of Fees for the anaesthesiologists had been introduced which would allow the anaesthesiologists to charge fees according to the schedule without taking into consideration the surgeons' fees.

The anomalies in the anaesthesiologists benefit levels and the complexities of providing anaesthesia for different surgical procedures were studied carefully and adjustments to the relative values were made in the BUPA schedule. These adjustments were reflected in the 3<sup>rd</sup> Edition of the MMA Schedule of Fees.

#### **MMA SCHEDULE OF FEES 3<sup>RD</sup> EDITION, 1997**

The 3<sup>rd</sup> Edition of MMA Schedule of fees is another significant welcome departure from the previous schedule as far as the anaesthesiologists' fees are concerned. Following the previous experience of using the BUPA schedule of relative values and the OPCS code for

procedures, the HIC once again adopted the same for the new edition of the MMA Schedule of Fees. The surgeons' and anaesthesiologists' fees continued to be listed separately and independently. The 1997 BUPA scale of relative values for anaesthesiologists' fees reflects for the first time the complexity of the anaesthetic given rather than that of the surgical procedure and this concept was adopted for the 3<sup>rd</sup> Edition of MMA Schedule of Fees. This has resulted in differing categories for surgeon and the anaesthesiologist in many instances. (e.g. bronchoscopy, change of burns dressing). An analysis of the anaesthesiologist fees in the 3<sup>rd</sup> Edition indicates that the range of percentage (against the surgeon's fees) has widened significantly from 12% to 220%. Further detailed analysis is discussed below.

The 3<sup>rd</sup> Edition consists of 3 parts: Part A contains the consultation fees, ward visit fee for various specialties and procedure fees unique to each specialty. There is a section for Anaesthesiology in which the fees for procedures like obstetric epidural services, intensive care unit management are listed. It must be highlighted that consultation and preoperative assessment fees are stated as that for the physicians, and this is a significant recognition of the anaesthesiologist as an independent specialist.

Part B contains schedule of surgical procedures the surgeon's fee code and the separate anaesthesiologist's fee code. This section also contains procedures for pain management and the fees for these procedures. A detailed analysis of this section and how the fees have changed from 1992 to 2002 is presented below.

Part C contains subspecialty surgical procedures not found in Part B.

#### **MMA SCHEDULE OF FEES 4<sup>TH</sup> EDITION (2002)**

As per the terms of reference given to the HIC by the Council of MMA, HIC was required to revise the Schedule of Fees every five years. The 4<sup>th</sup> Edition of the Schedule of Fees was published in 2002. Some new procedures were added in Part B and Part C. There were no changes in the relative values for the anaesthesiologist's fees. The HIC recommended a 10% increase in the fees for all categories including the anaesthesiologists' fees and this was accepted by the MMA Council.

No fee schedule has been received without criticism and so it has been for the MMA Schedule of Fees. Besides the public outcry in 1987 and doctor bashing by the politicians and consumer groups, there have also been criticisms from medical organisations as well as individual doctors. Most of them were about inadequate fees for

their particular procedures and their desire to charge fees as they felt fit. The HIC is currently addressing some of these issues raised by the College of Surgeons.

An analysis of the changes in the anaesthesiologists' fees over ten years from 1992 to 2002 shows that significant changes in fees occurred only in the Major Plus and the Complex Major (1 - 4) categories which show changes from 56% to 126% in the 4<sup>th</sup> Edition of the Schedule of Fees. Fee changes in all other categories varied from 24% to 40% over the same ten year period.

The ringgit value for each category was arrived at by using a factor of 3 for the original BUPA value which was given in pound Sterling. For instance the Minor 1 category in the BUPA schedule had a value of 70 pounds Sterling. The same category in 3<sup>rd</sup> Edition of MMA Schedule of Fees had a value of RM 210.00.

It must also be noted between 1992 and 1997, the relative value for anaesthesiologist's fees had changed for some procedures and this has caused the wide range in percentage vis-a-vis surgeon's fees. For those anaesthesiologists who are still using percentage for billing their services this may not be acceptable as many of the complex surgical procedures which are of long duration carry a fee less than 35% of surgeon's.

Below is an analysis of anaesthesiologist's fees as a percentage of the surgeon's fees in the 4<sup>th</sup> Edition of MMA Schedule of fees for 1214 procedures in Part B of the Schedule.

Percentage Fees	No. of Procedures In Schedule
12%	1
15 - 34%	256
35%	60
36 - 100%	859
101 - 165%	37
220%	1

Majority of the 257 procedures with less than 35% fees belong to the Major 4 to Complex Major 5 of the surgeon's category. The anaesthesiologists' fee for these procedures has been downgraded in category or the surgeons' fee category has been upgraded compared to the 2<sup>nd</sup> Edition of the MMA Schedule of Fees, thus resulting in a lower percentage. However, the number of procedures for which the anaesthesiologists' fees has been significantly raised in terms of percentage is 897.

The logical question that would arise from such an analysis is how does it affect the income of the anaesthesiologists. This of course would depend on the

institution in which they are working and the type of contract they have signed with the management. For those who have followed MMA Schedule the effect would have been noticeable if they had used the 3<sup>rd</sup> or the 4<sup>th</sup> Edition of the MMA Schedule and earlier 2<sup>nd</sup> Edition. For those who frequently provide anaesthesia for major and complex procedures there would be a loss in terms of percentage but for those who deal with procedures belonging to the intermediate and major categories there would be a gain. Further study need to be done to evaluate the effect of this and this can only be done if one is able to obtain more data from members of MSA in private practice. This is one area the sub-committee I am proposing (see below) could look into.

### CURRENT PRACTICE OF CHARGING FOR ANAESTHETIC SERVICES IN MALAYSIA

The methods of charging fees by anaesthesiologists in Malaysia is varied according to the nature of practice, place of practice, region and cities. Very often the anaesthesiologists have no control on the fees as these are either set by the surgeons, administrators of the hospitals through contracts or by the fee schedule provided by the insurance companies and of course, most importantly what the self-paying patient can afford.

The most common method was the percentage method which as I mentioned earlier was subject to abuse, caused suspicion and distrust between the anaesthesiologist and the surgeon. Certain private hospitals allowed independent fees subject to the fee schedule set out by the management. Till very recently the MMA Schedule of Fees was not used by any of the involved parties for paying for the services of the anaesthesiologists or for that matter the surgeons. However, there are two notable exceptions in the Klang Valley I know of that used the MMA Schedule albeit at a discounted benefit level.

It was announced recently that the Ministry of Health would adopt the MMA Schedule of Fees in the regulations of the Private Healthcare Facilities Act 1998. This Act requires a fee schedule which has to be adhered to. When the regulations are expected to be gazetted by the end of 2004, barring any further politicking, the MMA Schedule would receive the due official recognition which it had been lacking so far. However, it must be stated here that the MMA Ethics Committee had always used this Schedule as a reference whenever there were complaints against doctors of overcharging patients.

### THE ROLE OF MALAYSIAN SOCIETY OF ANAESTHESIOLOGISTS

The MSA has always responded to requests by the HIC for input and views for the MMA Schedule of Fees. Some of



its members have served on the HIC in their individual capacity with distinction. Other members have represented MSA in presenting the position of MSA and its members at meetings with the HIC. From the way MMA Schedule has evolved it must be acknowledged that these members have safeguarded the interests of the anaesthesiologists. The situation now is a bit uncertain as the MMA Schedule of Fees is on the verge of receiving official recognition. At the risk of sounding like an alarmist, I understand that there may be moves to amend the anaesthesiologists benefit level to the archaic percentage level. Certain insurance companies are lobbying for such changes in anaesthesiologists fees while accepting the surgeon's fees in the MMA Schedule. The MSA has to take a stand and send clear message to the HIC of its views. For this all members of MSA whether in government service or private practice should respond to the MSA president's request for comments and proposal for changes if necessary.

#### **PROPOSAL FOR A STANDING SUB-COMMITTEE ON ANAESTHESIOLOGISTS FEE SCHEDULE OF MSA**

The Exco of MSA should consider forming a standing Anaesthesiologist's Fees Sub-Committee which can deliberate and come up with proposals for the MMA Health Insurance Committee to consider for its 5<sup>th</sup> Edition of the MMA Schedule of Fees which is under preparation now and also future revisions.

The need to have a standing committee has become quite acute now, since the health care scenario has changed. Many patients are opting for health insurance and the number of cash paying patients is decreasing. If we do not have a united stand in the matter of our remuneration, the anaesthesiologists will be "bulldozed" both by the hospitals in which we work, as well as by the insurance companies, to accept fees that may not be to our liking and in the long run be detrimental to our specialty.

I have written about this in an article in Berita MMA under the title of "Anaesthesia in the Doldrums" many years ago when Dr Lim Say Wan was the Editor of Berita MMA. In that article I highlighted the fact that anaesthesiologists were being shortchanged when their remuneration was a percentage of the surgeons' fees, and that this would eventually influence the decision of younger doctors when deciding which field to specialise in.

Furthermore the HIC of MMA plans to review the Fee Schedule every three years instead of the present five years, so we need to be studying the trends quite closely in order to be able to put in new proposals to the HIC of MMA as quickly as possible for future revisions of the fee schedule. This MSA sub-committee should consist of both

senior and younger members who are in private practice and should include one from the University and one from the government sector. The University doctors are also doing private practice and the MOH is considering private commercial wings in public hospitals as well.

The College of Surgeons have a Fee Schedule committee comprising of private specialists who have been in private practice for more than 10 years, and they are coordinating all the fee schedules of surgical disciplines through that committee. I believe that the Gynaecologists too have a committee for fees.

The members of the Fees Schedule Sub-Committee of MSA should be appointed for a period of three years so that there will be continuity in the work they are doing. Every subsequent new sub-committee appointed should have at least half the number of members from the previous committee so that they can guide the new members in the functioning of the sub-committee. I hope my suggestion will receive a fair hearing by the MSA Exco. A fair and equitable remuneration for anaesthetic services is too important for the anaesthesiologists (private or public) to let it be decided by a few members of the HIC or by the hospital management or by the insurance companies.

#### **MEMBERS OF MSA WHO HAVE SERVED IN THE HIC OF MMA**

(Source: MMA Annual Reports)

Dr S Jenagaratnam	1986 - 1991
Dr Sylvian Das	1990 - 1991
Dr A Damodaran	1991 - 1992, 1996 - 2004
Dr K Mohandas	1996 - 2003
Dr M Namazie Ibrahim	2004 -

#### **MEMBERS OF MSA WHO REPRESENTED MSA IN DELIBERATIONS WITH HIC OF MMA**

Dr S Jenagaratnam (*Ipoh*)  
Dr Lim Teik Ghee (*Kuala Lumpur*)  
Dr Vignasen (*Late*)  
Dr M Namazie Ibrahim (*Ipoh*)  
Dr K Mohandas (*Kuala Lumpur*)  
Dr Aiyaroo (*Malacca*)  
Dr Vijayan (*Johor Baru*)

Any omissions are regretted. Kindly let the editor know if there are any errors and omissions. The views expressed in this article by the author are personal and do not represent the views of HIC of which the author is currently a member.

The author welcomes comments, criticisms, brickbats, praises etc and can be contacted at [mnamazie@hotmail.com](mailto:mnamazie@hotmail.com)

# SEE CLEARLY. EVERY TIME.

The next generation McGRATH™ MAC video laryngoscope\*\* features enhanced optics and is durable for routine use.

## CLINICIAN INSPIRED

Based on your feedback, we designed the McGRATH™ MAC video laryngoscope because your first attempt should be your best.

## SEE THE DIFFERENCE

The McGRATH™ MAC video laryngoscope provides a simple and convenient solution for intubation. The latest design offers:

- Enhanced optics
- Increased durability
- Intelligent battery management

To learn more about the next generation McGRATH™ MAC video laryngoscope, visit [medtronic.co.uk/mcgrath-mac-next-gen](http://medtronic.co.uk/mcgrath-mac-next-gen)

## THE EVOLUTION CONTINUES

2x

light spread\*

3x

brighter\*

4x

resolution\*

1. Based on internal test report #RE001500188, V&V plan.

\* As compared to the previous version of the McGRATH™ MAC video laryngoscope

\*\* May not be available for sale in all markets

## Next Generation McGRATH™ MAC video laryngoscope





# Anaesthesia Day Celebration in KPJ Pahang Specialist Hospital

by Dr Haslan Ghazali

16<sup>th</sup> October is celebrated worldwide as 'World Anaesthesia Day' to commemorate the people, the doctors, the paramedics and the patients in the field of anaesthesia. Most patients see 'us' as the people behind the curtain. Most people do not really know what anaesthesiologists do and what makes us important to the safety and wellbeing of patients.



Setting up the exhibition and poster presentation

In 2020, the theme for the National Anaesthesia Day here in Malaysia was "Occupational Safety & Patient Wellbeing". This was apt as in 2020, we were faced with the challenges of managing COVID-19 and its casualties and there have been many. The war against COVID-19 is long and hard and is yet to be won. Many sacrifices have been made and many people have lost their loved ones to this virus. Occupational safety implies the emphasis given to

the safety and security of all the healthcare workers and caregivers who have been the frontliners in this battle against COVID-19. Together with the patient's wellbeing which is equally important, the theme was well phrased.



KPJ Pahang Specialist Hospital did not miss the opportunity to celebrate this memorable day by organising an event at the hospital. The anaesthesia department here is small consisting of four anaesthesiologists and a team of dedicated nurses in the operating theatre (OT) and the intensive care unit (ICU). We pride ourselves in providing the best anaesthesia care to the patients by having a good team dynamic between us and the surgeons and the physicians. Maintaining good communication has always been the key to provide a good anaesthetic service.

The event was held at the hospital lobby on 16<sup>th</sup> October 2020 at 9.00am. There was an opening speech by the Chief Executive Officer, Tuan Haji Yasser Arafat, followed

by Dr Lukman Mohd Mokhtar, the Head of Department of Anaesthesiology. He officiated the 'World Anaesthesia Day' celebration with an opening montage. This was followed by a demonstration of CODE BLUE response and resuscitation by the hospital Basic Life Support Team. This took the audience by surprise but was quite entertaining. Then we have a quiz on the topic of anaesthesia based on the posters regarding anaesthesia that were displayed at the start of the week. It was on general information about anaesthesia related to the public and medical staff. There were a lot of prizes given to the winners.



Anaesthesia Day Bunting



The anaesthesiologists with the Anaesthesia Day cake

Apart from the poster presentation and display of anaesthetic and surgical equipment, there was also a hands-on demo by the BLS team for the public. Nurses from the OT and the ICU were on hand to answer questions regarding the services we provide. In

the afternoon, we had a one-hour live Facebook talk by Dr Haslan Ghazali on the topic of fasting for surgery which discussed the importance of fasting for patients undergoing anaesthesia.



KPJ Pahang staffs and doctors who have made the event successful



# Treaton MV200

## ALL-IN-ONE Portable Ventilator

Versatile lung ventilation during intensive care with advanced monitoring of gas exchange and metabolic calculation with a proven work horse turbine system. Provides controlled mandatory, assisted, synchronized and non-invasive ventilation modes.

- . CMV, PCV, SIMV, CPAP+PS, BiSTEP, APRV, NIV, PCV-VG, SIMV/DC
- . Adaptive Ventilation mode (iSV) , Pressure Support (PS)
- . Volumetric capnometry (VCO<sub>2</sub>), Cardiac Output (CO)
- . SpO<sub>2</sub> , Co<sub>2</sub> module

## HF01

### High Flow Oxygen Therapy

- . Proved therapy for spontaneously breathing patients
- . Beneficial for patients with humidification and oxygen therapy
- . Applicable for patients with bypassed upper airways
- . High Flow 2 - 80L/min
- . SpO<sub>2</sub> Monitor
- . Compatible Circuits



**Contact Us for Demo Arrangement**



**GEMILANG ASIA TECHNOLOGY SDN BHD** 660431-T

No 5, Jalan Kenari 13C, Bandar Puchong Jaya, 47170 Puchong, Selangor, Malaysia

Tel : +603 8071 5911 Fax : +603 8071 5977 info@gemilangasia.com

www.gemilangasia.com



# National Anaesthesia Day in KPJ Puteri Specialist Hospital, Johor Bahru

by Dr Ponijan bin Pardi

On 16<sup>th</sup> of October 2020, KPJ Puteri Specialist Hospital, Johor Bahru organised a mini celebration of the World Anaesthesia Day in its operation theatre mini lecture room.



This half-day long event was officially opened by our Medical Director, Dr Hj Mohd Ali bin Salleh, with some advice to doctors and staff on the importance of safety in managing patients regardless of whether they are undergoing anaesthesia, intensive care unit or in the ward. Teamwork is always vital to ensure safety during anaesthesia and surgery. With the COVID-19 pandemic being a formidable adversary to healthcare professionals everywhere, everyone must be vigilant and take extra precautions to ensure that everyone is safe.



Every patient that came for surgery as well as the patients who were admitted to the ICU on that day were given goodies. Gift hampers were also presented to the Sisters and staffs from OT and ICU. Lunch was the mouth-watering banana leaf cuisine that filled us up, following which was the closing speech from our Chief Executive Officer, Puan Haliza Khalid.



Looking forward to a fruitful year ahead... See you again next year.





# Acumen Hypotension Prediction Index software

Unlock intelligent decision support

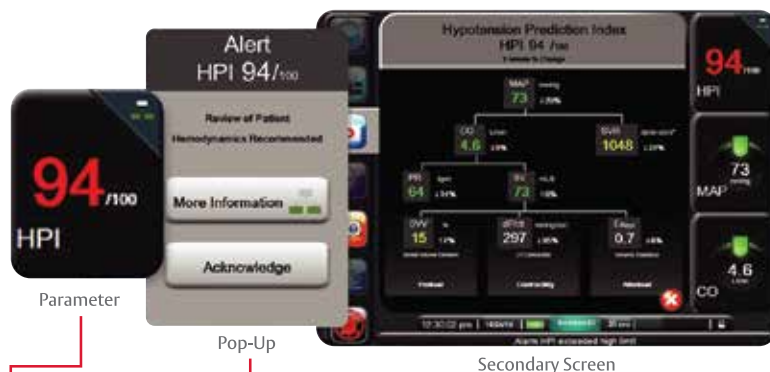


The Acumen Hypotension Prediction Index (HPI) software is a first-of-its-kind technology that provides you with information regarding the likelihood of a patient trending toward a hypotensive event.\*

Multiple studies have shown that Acumen HPI software:

- Achieves statistically significant reduction of hypotension when combined with a treatment protocol in noncardiac surgery vs. standard of care<sup>1,2</sup>
- Demonstrates superior predictive abilities for hypotension than common hemodynamic parameters such as cardiac output (CO), stroke volume (SV), and changes in mean arterial pressure (MAP)<sup>3</sup>
- Has proven and reliable accuracy<sup>4</sup>

\*A hypotensive event is defined as MAP <65 mmHg for a duration of at least one minute.



Parameter

Pop-Up

Secondary Screen

## HPI parameter

Displays as a value ranging from 0 to 100, with higher values indicating higher likelihood of a hypotensive event.

## HPI high alert pop-up

Alerts you when your patient is trending toward or experiencing a hypotensive event.

## HPI secondary screen

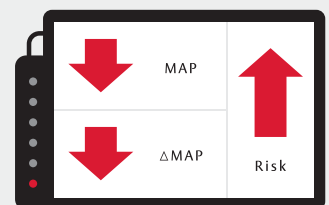
Provides advanced hemodynamic pressure and flow parameters allowing you an opportunity to investigate and identify the root cause of potentially developing hypotensive events.

Know More. Know Now.

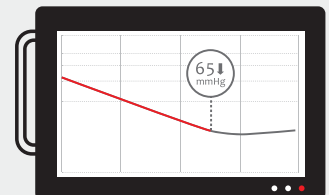
Visit [Edwards.com/devices/decision-software/hpi](https://www.edwards.com/devices/decision-software/hpi) or contact your Edwards representative.

## Hypotension study findings point to increased risk

Highlights from 2017 Salmasi, et al.<sup>5</sup>



Mean arterial pressure (MAP) below absolute thresholds of 65 mmHg or relative thresholds of 20% or more below baseline were progressively related to both myocardial and acute kidney injury (AKI). At any given threshold, prolonged exposure was associated with increased odds.



Absolute and relative MAP thresholds had comparable ability to discriminate patients with myocardial or kidney injury from those without. The results suggest that maintaining intraoperative MAP greater than 65 mmHg may reduce the risk of AKI and myocardial injury.



We would love to hear from you - participate in our Intraoperative Hypotension Survey!

## References:

1. Wijnberge, M., Geerts, B., Hol, L., Lemmers, N., Mulder, M., Berge, P., Schenk, J., Terwindt, L., Hollman, M., Vlaar, A., Veelo, D. (2020) Effect of a Machine Learning-Derived Early Warning System for Intraoperative Hypotension vs Standard Care on Depth and Duration of Intraoperative Hypotension During Elective Noncardiac Surgery: The HYPE Randomized Clinical Trial. JAMA Online, February 17, 2020. doi:10.1001/jama.2020.0592 <https://jamanetwork.com/journals/jama/article-abstract/2761469>
2. Schneek, E., Schulte, D., Habig, L., Ruhmann, S., Edinger, F., Markmann, M., Habicher, M., Rickert, M., Koch, C., Sander, M. (2019) Hypotension Prediction Index based protocolized haemodynamic management reduces the incidence and duration of intraoperative hypotension in primary total hip arthroplasty: a single centre feasibility randomized blinded prospective interventional trial. Journal of Clinical Monitoring and Computing online, November 29, 2019. <https://link.springer.com/article/10.1007/s10877-019-00433-6>
3. Davies SJ, Vistisen ST, Jian Z, et al. Ability of an arterial waveform analysis-derived hypotension prediction index to predict future hypotensive events in surgical patients. Anesth Analg 2019;doi:10.1213/ANE.00000000000004121. [https://journals.lww.com/anesthesiology/Citation/2020/02000/Ability\\_of\\_an\\_Arterial\\_Waveform\\_Analysis\\_Derived.16.aspx](https://journals.lww.com/anesthesiology/Citation/2020/02000/Ability_of_an_Arterial_Waveform_Analysis_Derived.16.aspx)
4. Hatib, F., Zhongping, J., Buddi, S., Lee, C., Settels, J., Sibert, K., Rinehart, J., Cannesson, M. (2018). Machine-learning Algorithm to Predict Hypotension Based on High-fidelity Arterial Pressure Waveform Analysis. Anesthesiology 129, 663-74. <https://anesthesiology.pubs.asahq.org/article.aspx?articleid=2685008>
5. Salmasi, V., Maheshwari, K., Yang, G., Mascha, E.J., Singh, A., Sessler, D.J., & Kurz, A. (2017). Relationship between intraoperative hypotension, defined by either reduction from baseline or absolute thresholds, and acute kidney injury and myocardial injury. Anesthesiology, 126(1), 47-65.

For professional use. See instructions for use for full prescribing information, including indications, contraindications, warnings, precautions and adverse events.

Edwards, Edwards Lifesciences, the stylized E logo, Acumen HPI, and HemoSphere are trademarks of Edwards Lifesciences Corporation.

© 2020 Edwards Lifesciences Corporation. All rights reserved. PP# APSEA122/2-2021/CCV

Edwards Lifesciences • Jalan Bangsar, KL Eco City, 59200 Kuala Lumpur, Malaysia • [edwards.com](https://www.edwards.com)

MDA Establishment License – MDA-100-WDP2115; HemoSphere & Acumen HPI – GC766371236819





# Team Spirit in COVID Times Brings Reality into a Virtual World

## #NAD2020UMMC

by Dr Nabilah binti Abdul Ghani & Dr Siti Nadzrah binti Yunus

Why are we celebrating National Anaesthesia Day? Simple. To celebrate all outstanding and dedicated anaesthetists all over the world for all their hard work and commitment to save lives. People might claim it sounds cliché, all doctors are saving lives, but there is no denying the fact that especially during this COVID-19 pandemic that has collapsed everything from a person's emotional wellbeing to the country's economy, anaesthetists are not only the first but the last line of defence in fighting this invisible war. Every year National Anaesthesia Day is awaited by all anaesthetists to be celebrated together as a family and this year is no exception. "Occupational Wellbeing and Patient Safety" was the theme for this year. The aim was to encourage the wellbeing of healthcare personnel which ensures patient safety.



Our University Malaya Medical Centre fraternity had planned, reserved, and made a site visit to the Semenyih Eco Reserve Resort to spend a full day together on team-building exercises and destressing. I am quite sure the most anticipated event, at least for the ladies, was a Zumba session by the poolside, led by a muscular duo in our fraternity. However, at this time, Malaysia was affected by the third wave of COVID-19 pandemic and the commencement of Conditional Movement Control Order

(CMCO). All plans for the team-building exercises in Semenyih were canceled. A sense of sadness and disappointment was felt, but as anaesthetists, we always have a plan B. As COVID-19 was persistent, so are we, this did not deter us from celebrating Anaesthesia Day.



There were many highlights in our celebration, but I was most impressed with the team spirit and togetherness during the preparations to make this event a success. As we are unable to proceed with any event that involved gathering in large numbers, we decided to go virtual. Banners of Anaesthesia Day were wonderfully designed by our committee members and displayed around the hospital as well as exhibition boards to educate the public on occupational wellbeing. Pictures of healthcare staff were taken holding signs which could be filled in by them on how they improve their wellbeing. All the pictures were inspiring, but I personally loved our UMMC fraternity group photo with matching pink/blue scrubs. We also made several videos and Tiktok featuring our





UMMC fraternity on occupational wellbeing and patient safety. All the pictures and videos were shared on a specially designed Facebook page (National Anaesthesia Day 2020 UMMC) to boost our spirits in these challenging times.

The main event was the Virtual UMMC Anaesthesia Day Celebration on Friday, 16<sup>th</sup> October 2020. It was a 100% virtual conference via Microsoft Teams. The conference began with an enlightening speech by our dearest Professor Dr YK Chan on "Wealth, Wisdom and Wellbeing", followed by words of encouragement from our beloved Head of Department Professor Dr Ina Ismiarti Shariffuddin and inspiring video compilations. The best video was definitely the one UMMC entered for the MSA short video competition on Occupational

Wellbeing and Patient Safety. Not only was it entertaining, a clear message was delivered.



While some of us watched the conference together on desktops in the operation theaters and ICU, others watched on their own personal devices. The virtual meeting was also attended by several WFSA members. We were not able to celebrate together, but we all felt the connection and the boost to push on during these challenging times. During the closing for Anaesthesia Day celebration, on 23<sup>rd</sup> October 2020, a small token of appreciation was given to selected healthcare staff by our UMMC fraternity. Every cloud has a silver lining and with team spirit we had a successful celebration.

#MyWellBeingIsYourWellBeing



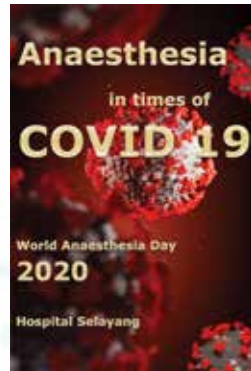


# Celebrating World Anaesthesia Day 2020 in the Era of Pandemic

by Dr Ahmad Suhaimi Amir

Ushering into the new year with Vision 2020 clearly is in everyone's mind, well envisioned and eagerly awaited indeed. It was supposed to be the beginning of everything for this country. This was the dream, not until COVID-19 stole the limelight and it quickly became the buzzword and the perennial tagline around the globe henceforth. So much so, 2020 proved to be more than what we had initially bargained for.

Soon after 25<sup>th</sup> January 2020, headline was made in history when the Director General of Health Malaysia had announced the first cases of COVID-19 reaching Malaysia's soil involving three Chinese nationals being warded at Sungai Buloh Hospital. Fast forward, it has been a tumultuous year since that historical day. As the saying goes; **"What doesn't kill us, makes us stronger"**, truly prevails in every sense as through perseverance and hard work, amid the initial chaos, we ventured forward and continued with our new norms of lives especially us being part of the frontliners.



Anaesthesia Day on 16<sup>th</sup> October is a much anticipated event around the globe. Here in Selayang Hospital, we have been celebrating this day classically with the customary performances, having public forum, demonstrations of our daily activities along with poster presentation at the lobby of the hospital.

2020 gave a new twist to our approach. After much considerations and deliberation, the event was trimmed down to a mere poster presentation in accordance to the new standard operating procedure (SOP). Surely this year's theme was none other than the roles of anaesthesiologists in the faces of adversities.

We have made many adjustments and modifications in our ways of dealing and taking care of patients from the perioperative periods to the management of critically ill patients in the intensive care unit. All of these new norms are in place to ensure everyone is safe, echoing the famous taglines #kitajagakita, #kitamestimenang.

## BEFORE



We surely missed the "old" us, yet the "new" us is equally exciting as we enjoyed the so called "close-knit family event" way of celebrating this year's National Anaesthesia Day immensely. What is an event without a cake? The day was graciously marked with a cake cutting ceremony by our newly appointed Head of Department, Dr Haslinda Ab Hashim.

## AFTER



We still have not won this battle against this unseen nemesis yet. Nonetheless, we hope 2021 shall be much better with new discoveries and amazing news in store for all of us. Meanwhile, take care and be safe everyone.

#kitamestimenang  
#kitajagakita

Celebrating Our

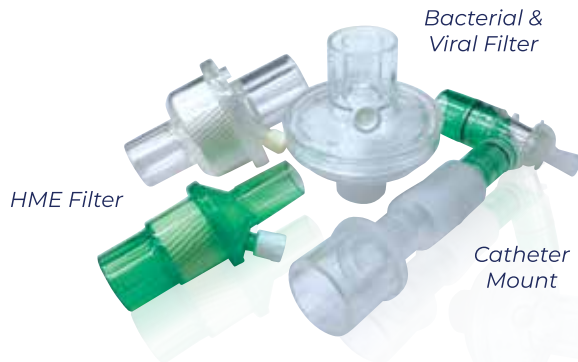


ANNIVERSARY



Star Medik offers the best solution for anaesthesia and critical care needs of ventilators, oxygen delivery system and related consumables for hospital usage and home care.

## Medical Consumables



We offer high-quality medical disposables products such as HME filters, bacterial & viral filters, catheter mount and breathing circuits.

## Medical Devices

- Invasive & Non-Invasive Ventilation
- High Flow Oxygen Therapy
- ASV & IntelliVent- ASV mode
- Automatic Lung Recruitment Maneuver
- IntelliSync+ (Automatic Patient-Ventilation Synchrony)

Hamilton-C6



## Ventilators



Hamilton-T1



Hamilton-C1



Hamilton-MR1

World's advanced and intelligent ventilation device, Hamilton Medical, from Switzerland.

Official Representative of:

**HAMILTON MEDICAL**  
Intelligent Ventilation since 1983

## Medical Consumables

Manufacturer of

**humiFlö**

Disposable Prefilled  
Bubble Humidifier



Convenient, safe and comfortable consumable that moisturizing medical gases during breathing treatment.

## Home Care

**humiOxy**

World's Smallest & Lightest  
Portable Oxygen Concentrator



Portable oxygen concentrator for oxygen treatment for home and traveling.

REQUEST A PRODUCT DEMO TODAY ☎ +6.03.8706.5282

📞 +6.013.260.3113

✉ info@starmedik.com



# World Anaesthesia Day 2020

## Hospital Enche' Besar Hajjah Khalsom Kluang Johor

by Dr Eleeza Syafiqah binti Ponajan

This year, World Anaesthesia Day is celebrated on October 16<sup>th</sup>. Anaesthesiology Department in Hospital Enche' Besar Hajjah Khalsom (HEBHK) has celebrated World Anaesthesia Day on 19<sup>th</sup> October to appreciate the sacrifices made by all personnel in the department, who have given their best for the patient's sake especially during this pandemic time. For the record, HEBHK has been chosen to be a full COVID hospital, which primarily treats all COVID-19 patients in Johor state. Due to COVID-19 pandemic, a small celebration was held with involvement of minimal people. The celebration was initiated by speeches and then officiated by cake cutting ceremony by the Head of Department. Lunch was subsequently served to all.

We also participated in a short video competition by Malaysian Society of Anaesthesiologists. The video was filmed together with all staff in the department. It portrayed the reality and hardship of working life in the department while managing COVID-19 patients and how it gave huge emotional impact to us. HEBHK managed to win a second-runner up in the competition.



From left: Dr Gary, Dr Wan Siti Sarah, Dr Ngazraini, Dr Azmin Huda, Sister Rafidah, Dr Ainaien



Dr Wan Siti Sarah officiated the ceremony by cutting the cakes with OT staffs



Having lunch with all doctors and staff



Two special cakes that was ordered for the celebration



Among the food prepared for the celebration

# octaplex®

## Prothrombin Complex Concentrate

### *Accurate prevention & fast control of life-threatening bleeding*

- 4 factor PCC with balance composition of vitamin K dependent coagulation factors (FII, FVII, FIX and FX) and inhibitory protein C and protein S. <sup>1,2</sup>
- Quickly reverts anticoagulant therapy. <sup>1,3,4</sup>
- Reverse INR faster, resulting in better clinical outcome compared to FFP. <sup>5</sup>
- Small volume and short infusion time. <sup>6</sup>



**References:** 1. Lubetsky A et al. Efficacy and safety of a prothrombin complex concentrate (octaplex®) for rapid reversal of oral anticoagulation. Thromb Res 2004;113(6):371-378. 2. Summary of Product Characteristics of octaplex®. 3. Riess et al. Prothrombin complex concentrate (octaplex®) in patients requiring immediate reversal of oral anticoagulation. Thrombosis Research 2007;121:9-16. 4. Varga C et al. The effectiveness and safety of fixed low-dose prothrombin complex concentrates in patients requiring urgent reversal of warfarin. Transfusion 2013;53:1451-1458. 5. Kosek-langenecker S et al. Management of severe perioperative bleeding-Guidelines from the European Society of Anaesthesiology. Eur J Anaesthesiol 2013;30:270-382. 6. Sarode R. Four-factor prothrombin complex concentrate versus plasma for urgent vitamin K antagonist reversal: New evidence. Clin Lab Med 2014;34(3):613-621.

**pharmaniaga**  
passion for patients

Further information is available on request.

**PHARMANIAGA MARKETING SDN BHD** (118254-D)  
**COMMERCIAL DIVISION**

No. 7, Lorong Keluli 1B, Kawasan Perindustrian Bukit Raja Selatan, Seksyen 7,  
40000 Shah Alam, Selangor Darul Ehsan, Malaysia.  
Tel : 603-3342 9999 Fax : 603-3344 2222 Customer Care Line : 1-800-888-313  
Email : customercare@pharmaniaga.com Website : www.pharmaniaga.com

Manufactured by:

**octapharma®** Seidenstrasse 2  
8853 Lachen, Switzerland  
For the safe and optimal use of human proteins [www.octapharma.com](http://www.octapharma.com)

For Healthcare Professionals Only



# “Light in the Midst of Chaos” Two Sets of Conjoined Twins Successfully Separated at Tunku Azizah Hospital, Kuala Lumpur

by Dr Mohd Lutfi Nijar

It marked an historic event and a milestone for the newly opened Paediatric and Women Children Hospital aka Tunku Azizah Hospital, Kuala Lumpur. In the midst of the chaotic COVID-19 pandemic, two cases of conjoined twin separations were successfully conducted within a period of two weeks. These were the first and second cases of conjoint twins' separation in this hospital.

Conjoined twins are identical twins whose bodies are joined in utero. It is a rare phenomenon; estimated to range from 1 in 50,000 births to 1 in 200,000 births,<sup>1</sup> with a somewhat higher incidence in Southwest Asia and Africa. Previously, MOH hospitals already had 16 cases of conjoint twins' separations since 1981.

Perioperative management of conjoined twins' separation surgery requires special anaesthetic considerations which include the need of care for two babies, presence of cross-circulation, other congenital anomalies of the babies, problems of paediatric age group, massive blood loss, long duration surgery, intraoperative hypothermia and necessity of well organised preoperative planning and preparation.



Our first set of twins was a five and half months old weighing 11.8 kg, Omphalophagus conjoined twin from the East Coast of Malaysia. The twins were joined at the abdomen but with their own separate genitalia and anus. Preoperative multidisciplinary discussion and planning was led by Dato' Dr Zakaria Zahari, head of Paediatric Surgical Department, HTA. Other disciplines involved were Paediatric Anaesthesia Team lead by Dr Hamidah Ismail and Dr Intan Zarina, Paediatric Radiology Team, Paediatric ICU team, and Paediatric Operating Theatre Coordinator. The surgery was planned to be conducted on 3<sup>rd</sup> October 2020 in order to accommodate the availability of staff

and personnel involved, and the availability of operating theatres. We were glad to have this case done during the weekend to give the opportunity for personnel from different subspecialties to participate and observe perioperative management of conjoined twin's separation surgery. The surgery was broadcasted live in the auditorium and web streamed for learning purposes.

For the paediatric anaesthesia team, we were pleased to have Dr Muhammad Habibullah, paediatric anaesthesiologist from Sultanah Nur Zahirah Hospital, Kuala Terengganu and five paediatric anaesthesia trainees joined us during this surgery. Each twin was allocated an anaesthetic team comprising two consultants, two trainees and two nurses. Each twin had her own anaesthetic machine, monitors, drugs and blood products. All equipment, teams and drugs were colour coded for to each twin.



The five-hour surgery involved liver resection and separation of biliary system. The twins were successfully separated with primary closure of abdominal defect for both patients. Patients were weaned off ventilator in the paediatric intensive care unit and successfully extubated on day 2 post-surgery and discharged home on day 9 post-surgery.





Our second case was conducted on 17<sup>th</sup> October 2020, two weeks after the first conjoined twin separation surgery. Patients were five and half months old pyopagus conjoined twins. Their lumbosacralcoccygeal spine was fused with incomplete separation of the dura layer. This

case posed more unique challenges to anaesthetists and surgeons as the anatomical structure involved were more complex and have high risk of permanent neurological complications.



Preoperatively a multidisciplinary team was established under the leadership of Mr Azmi Alias, a senior Paediatric Neurosurgeon in HTA, comprising two anaesthesia leads - one for each twin, Plastic Surgery and Reconstructive team, Paediatric Surgery team, and Paediatric Intensive Care team.

tissue coverage done with local flap and Integra Dermal Regeneration Template were applied.



Our anaesthetic consideration for this surgery include the anticipation of longer duration of anaesthesia and surgery, multiple patient positioning and transfer, use of neuromonitoring and intraoperative fluid and blood loss. Total intravenous anaesthesia (TIVA) using propofol and remifentanyl infusion were used throughout the surgery. Each twin received one set of neuromonitoring. The availability of intraoperative neuromonitoring provided valuable information for surgeons during the delicate nerve separation.

The procedure was completed just after midnight after a gruelling 16-hour surgery. The twins were separated, and



Post operatively the twins were ventilated in Paediatric Intensive Care. Due to the large defect on the wound, secondary closure and split skin graft were done gradually over a two-week period. Patients were finally discharged after about one month post-surgery. Currently both sets of twins are recovering well at home and scheduled for further follow-up and reviews.

These two cases provided invaluable experience for every single subspecialty involved. Good leadership and teamwork, proper preparation and careful planning including simulation of the scenarios prior to separation day and the application of latest medical technology contributed so much to the success of the surgeries.





## MY TRAINING EXPERIENCE IN SINGAPORE

by Dr Heng Yen Pin

I started my basic specialist training in Anaesthesiology in Hospital Sungai Petani and Hospital Pulau Pinang. After completion of the Final MMed Examination in Singapore in 2004, I was posted to Hospital Alor Setar (now known as Hospital Sultanah Bahiyah) for my gazettement as a Clinical Specialist. Upon completion of the gazettement, I was offered a Registrar post in National University Hospital (NUH), Singapore in 2006. NUH was one of Singapore Government restructured hospitals. After having been in the Malaysian medical system for many years, I thought it would be great for my professional development to venture outside Malaysia and to learn how Anaesthesia is practised differently. I was eager to learn new concepts and approach to Anaesthesiology. I gladly accepted the post.

During my first few weeks in NUH, I was quite apprehensive as I have never practised Anaesthesia in a new environment outside my comfort zone of Malaysian MOH hospitals. It was compulsory for all doctors in Singapore to have the medical indemnity Insurance in order to practise medicine and employment in Government restructured hospitals on a contract basis. I was closely supervised in any procedure and conduct of Anaesthesia and my competency was continually assessed. It was definitely an eye opener for me. Back then, as compared to Malaysia, the practice of Medicine in Singapore was more defensive, as detailed documentation and Anaesthesia Consent has to be taken before any surgical procedure. All the Medical Officers, Fellows and Registrars performing procedures were closely supervised. For high risk and complex cases, the

consultants were required to be present, even though the registrars were competent to manage the case.

After three months, my Professor encouraged me to enrol in the Advanced Specialist Training Programme. The Advanced Specialist Training Programmes were administered by the Joint Committee on Specialist Training. The objective of the programme was to provide trainees with the necessary training, experience and postings to enable them to qualify for exit as a specialist and eligible for a consultant post in Singapore. Thus, my three year's journey began.

The training that I went through was very structured. We were given protected time for training. It could be for formal lectures, case discussions, journal discussions and time committed to research on topics assigned by supervisor, sessions with experts and participating in clinical studies. In my daily work, I was allocated to various Anaesthesia subspecialties including Intensive Care to ensure a complete and thorough exposure to all surgical disciplines. I was also posted to the Singapore General Hospital, the Kandang Kerbau Women and Children's Hospital and the Changi Hospital for more exposure. My request to have more training in Cardiothoracic Anaesthesia was granted by my Director of Training, and about 45% of my required case numbers were in Cardiothoracic Anaesthesia in NUH and SGH/National Heart Centre with emphasis on Perioperative Transoesophageal Echocardiography. I seized the opportunity to learn about the complexities of management of patients on ECMO at NUH and



anaesthesia for heart transplantation at SGH / National Heart Centre. As for general surgical cases, I had ample exposure in Liver Transplantation at NUH as it was the referral centre for Liver Transplantation for Government restructured hospitals. Additional learning opportunities include daily combined intensive care unit rounds, departmental echocardiography conferences, advanced TEE case conferences and journal club.

My performance was closely monitored by the Training Director. The method of evaluation consisted of observations through rotations, feedback / assessment by the Chief of Training / Head of Department in other hospitals and evaluations of the In-Training Examinations (ITEs).

Part of my work involved conducting and teaching Ultrasound Guided Central Venous Catheter Insertion Workshop. I was actively involved in Anaesthesia Crisis Simulation Laboratory and taught the undergraduate medical students in NUS.

Since NUH was a teaching hospital, we had a sizeable number of Fellows from Philippines, India and China in addition to Medical Officers from Singapore and Malaysia. Typically, during a surgical case, a Senior Consultant / Consultant will be in attendance, together with a Registrar, a Fellow and a Medical Officer. Hence, the operation theatre can be quite crowded. Training wise, the Registrar and Fellow would be given priority in the conduct of cases and performance of procedure. Of course, we were closely supervised by the Consultant at all times. This was because the Consultant would have to take full responsibility if there was a bad outcome.

Back then, all the restructured hospitals in Singapore had adopted Information Technology for their Clinical practice (medical records, Radiology / Imaging, Pharmacy / Dispensing, etc).

We were given continuous training in IT. IT played a big part in the daily organisation and OT scheduling.

At the end of specialist training, trainees were assessed in the form of Written Assessment, Clinical/Oral/OSCE before being certified competent to exit as specialists.

As I look back now and reflect, my time there was well spent.

After having been in the system for three years, I would like to say that I enjoyed the different working environment in Singapore. Overall it was a positive experience because I was able to learn new approach to the conduct of Anaesthesia, the thinking / rationale for each action/intervention, other non-clinical aspect like conducting workshop, simulation and research activities and usage of Information Technology as it pertained to Anaesthesia and Critical Care. Last but not least, I made many new friends, many of whom I am still in touch with after all these years.

In conclusion, one can have good and high quality Anaesthesia postgraduate training in Singapore and our prospective trainee here in Malaysia can consider this pathway for their career development.

*Kandang Kerbau Women and Children's Hospital*



*National University Hospital*



*Singapore General Hospital*



# London Has Fallen

by Dr Wan Aizat binti Wan Zakaria

**10<sup>th</sup> March 2020**

## **Roti King, Euston, London.**

The best Malaysian hang-out place ever, even right here in central London. Now... wait for it... it has to be... *Mamak*, of course! At the time, no one knew that this awesome spot will be shut down in less than 2 weeks... for a very, very, long time.

As we were having *roti canai* and *teh tarik* like there was no tomorrow (I am sure glad we did), London witnessed its first Coronavirus-related death. The following day, the WHO declared an emergency health crisis and announced that the COVID-19 outbreak has now become a pandemic.

This was only, just the beginning.

**23<sup>rd</sup> March 2020**

## **High Dependency Unit, Queen Square, London.**

Today marked the first official day of the United Kingdom in lockdown. Panic hit London. Hard.

Never have I seen the streets so empty, lifeless, similar to the scenes from World War Z - the only difference being - there was no Brad Pitt.

One word to describe the situation in our hospital - chaos. There was an overnight change in the Consultants and Registrars Rota, where everyone will now only do a 12-hour shift with standby days in between to cover for sickness or isolation. All elective cases were cancelled, theatre colleagues reshuffled to fill up the Intensive Care Unit, Consultant Neurosurgeons included.

In less than a week, the ICU that previously dealt with mainly patients with SAH did a 360° changeover to having only ARDS patients. A hospital that has always been a tertiary neuroscience centre has to adapt quickly to a change in the management of its patients. Permissive hypercapnia and fluid restriction were equally as scary as Coronavirus itself, if not, scarier. They cracked jokes and laughed nervously when the ETCO<sub>2</sub> crept up to 7 kPa... "Let's put ICP bolts in everyone, just to make sure." However, I am positive they were secretly praying that someone *will* actually do that.

In a matter of days, we became experts in donning and doffing of PPE, as well as proning and un-proning

patients. As the Trust revised and re-revised our guidelines, our PPEs remained the same. The first time I heard about PAPR was from my Malaysian colleagues. All we had to don was a surgical gown, cap, visor, three layers of gloves, and an FFP3 mask. Nonetheless, I am thankful that we always had enough supply of PPE and never was I in a situation where I needed to do as the notion "No PPE, No CPR."

That same week on Thursday, at exactly 8.00pm, millions of Britons stood at their doorsteps and balconies applauding and clanging their pots and pans to show support for the NHS and key workers as part of the "Clap for Carers" nationwide campaign. I remember walking home that night to people clapping and cheering, and for a moment there I felt like Maximus when he won against Commodus in the movie *Gladiator*.

As I felt a growing sense of responsibility, there was also a growing sense of fear and anxiety. I fear for myself, but mostly, I fear for my loved ones back home. Some said, when you are facing death, you will experience a phenomenon where the entirety of your life flashes before your eyes. I hope if my time comes anytime soon, the only image that I will see is that of my children, in repeat.

It was hard to believe that only a month ago, life was completely normal.

**3<sup>rd</sup> April 2020**

## **Hampstead Heath, Hampstead, London.**

The NHS Nightingale at the ExCel London officially opened today. It was one of the seven temporary hospitals set up by NHS England to fight against the COVID-19 pandemic. None of us got deployed despite volunteering, and I suspect because there were too many volunteers.

The "Rona" had gotten to the heart of the government when first, Prince Charles was confirmed positive followed by Boris Johnson, who eventually got admitted to St Thomas Hospital's ICU after his symptoms worsened. Rumour (read: work Whatsapp group) has it that he only received NIV. Those who shared the same podium as him at 10 Downing Street, Health Secretary Matt Hancock and England's Chief Medical Officer Professor Chris Witty were also tested positive.

It was also the month where I started taking long walks in the parks, after being inspired by the 99 year old, retired Captain Tom Moore, who completed 100 laps in his own garden in Bedfordshire, to help raise more than £30 million for the NHS. I cannot help but wonder - *like that also can?*

The following week, the UK coronavirus death toll hit the 10,000 mark, and later had the highest declared death toll of 32,000 surpassing Italy which previously had the most deaths.

**23<sup>rd</sup> April 2020**

**First Day of Ramadhan Anaesthetic Registrars' Office, Queen Square, London.**

At this point, I am still not sure how I could survive an 18-hour long, fasting in full PPE. Everytime I doffed, I will be drenched in sweat - even in places I didn't know could produce sweat.

This was definitely not the Ramadhan that I had imagined when I made the decision to pursue my dreams. However, it will be the Ramadhan that will resonate for a long time, in my memory. This was a Ramadhan that made me realise even more that as humans, we can make all the plans in this world, but ultimately, God is the still the best planner. Not only I learn, but I came to terms with the true meaning of *surrender*.

I find myself repeating my favourite verse from the Quran, especially during times like this.

"So verily, with the hardship there is relief. Verily, with the hardship there is relief." Al-Insyirah 94:5-6

**30<sup>th</sup> June 2020**

**Finsbury Park, London.**

As the UK reached 100 days of lockdown, every soul in London, both dead and alive, looked forward to the reopening of restaurants, retail shops, and for the locals - pubs, in a few days' time.

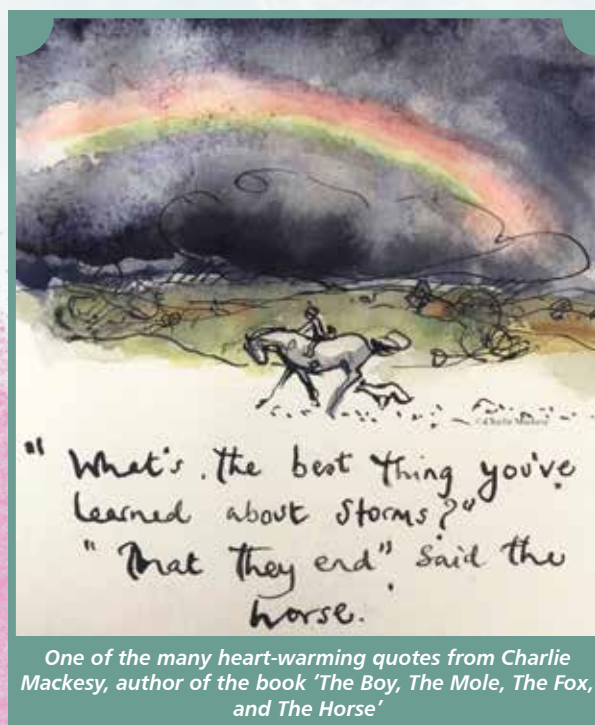
As Liverpool ended their 30-year wait and was crowned the Premier League Champions, I could hear in the background the radio blasting:

*"At the end of a storm, There's a golden sky,  
And the sweet silver song of a lark,  
Walk on through the wind,  
Walk on through the rain,  
Though your dreams be tossed and blown,  
Walk on, walk on, with hope in your heart,  
And you'll never walk alone, You'll never walk alone."*

**16<sup>th</sup> September 2020**

**Finsbury Park, London.**

It is raining outside as I am finishing writing this article for my dear friend. The UK daily cases had risen to 3103 yesterday, and they said that UK could not possibly endure a second lockdown. However, all the hospitals in London are making preparations, in case of a second strike. It is always good to be prepared, but for now, let's not allow ourselves to worry about something that has not happened yet.





# DeLIVERing Blessings Amid The Chaos

by Dr Sharini Pillai

For many years, Vision 2020 was our tagline, our motto. We had so much of hopes and dreams for this special year. Songs were written and sang during official events. Slogans were created and quoted for essays or speeches that were written. But since a few years ago, we knew that 2020 would not be as what we aspired it to be. But no one, including Paul the Octopus, predicted and prepared us for what was coming.

It turned out to be a year that will never be forgotten - for all the wrong reasons. The whole world was affected and the word 'unprecedented' was uttered repeatedly by many. Online classes, google classrooms, zoom meetings and webinars made their way into our lives. Masks and hand sanitizers became essential items and healthcare workers were hailed as heroes for the first time. Parents doubled up as teachers and prayed everyday for schools to be reopened so that some sanity could be restored at home. 2020 was a challenging year for all and 2021 is not going to be any easier.

COVID-19 proved to be a life-changer. The collateral damage to non-COVID patients cannot be downplayed. Clinic appointments were postponed. Elective surgeries were cancelled. Time sensitive surgeries were delayed. Preoperative testing included COVID-19 PCR or RTK. COVID-19 positive patients were isolated from others and patients were diverted to COVID or non-COVID hospitals as necessary.

However, one group of patients saw 2020 as a year where things started to look a wee bit brighter. Maybe 20 was a lucky number for patients with liver failure as 2020 saw 20 of them given a chance to a new lease on life.

Since Hospital Selayang started its liver transplant programme in 2002 up to 2019, a total of 90 liver transplants had been done which averaged out to five liver transplants per year. In fact, between 2017 and 2019, only three liver transplants were done each year. Waiting time on a transplant list was long and many did not make it out of the list alive.

However 2020 turned out to be extraordinary. Twenty liver transplants were done in 2020 in Hospital Selayang

bringing our grand total to a whopping 110 cases! This is a 400% increase from our previous mean per year. Of the 20, three (15%) were from living related donors while 17 (85%) were from cadaveric (brain dead) donors. This number may have been higher if it were not for the suspension of organ transplantation from March till May 2020 due to the first wave of COVID-19 in Malaysia.

Why these abrupt increases in liver transplant surgeries? Was it a change in policy? Was it because of better eating habits among Malaysians which translated into less-fatty livers? Or were the stars and moon aligned perfectly and brought much needed luck for these patients? I would say none of the above. Or perhaps, it is all of the above plus the superb role played by the TOP team in Malaysia which has increased the awareness towards organ donation in our country.

Liver Transplant Anaesthesia is a relatively unknown subspeciality programme in Malaysia, even among the anaesthesia fraternity. Dr Ahmad Suhaimi (Head of Unit) and Dr Nas Shazli are the only two liver anaesthetists in Malaysia since 2002. In 2019, two trainees joined the Liver Transplant Anaesthesia subspeciality programme and in 2020, yours truly enrolled in the programme too.



*The transplant team  
The anaesthesia team is, as usual, on the other side of the barrier.  
From left to right: Dr Haslini, Dr Nas Shazli, Dr Sharini,  
Dr Hairatun Ida and Dr Ahmad Suhaimi*

Patients with chronic liver disease typically have already been worked up months before they are even listed for a transplant. They would have undergone a number of non-invasive and invasive testings and also countless sessions of counseling and assessments to prepare them

for what is to be expected. After a discussion in a transplant meeting, their names will be put up in the transplant wait-list. Then, it is a matter of waiting for a donor.

A liver transplant surgery involves a whole 'kampung' of personnel - the procurement team goes anywhere in Malaysia to harvest the organ, hepatobiliary surgeons, hand and microsurgery surgeons (in our setting, they perform the arterial anastomosis), pathologist/blood bank personnel, intervention radiologists (who perform on table ultrasound/Doppler once the anastomosis is done), the anaesthesia team, GA nurses, anaesthesia MAs, scrub nurses, circulation nurses and OT attendants.

Induction is done in the usual manner. After induction, we would insert a central venous pentalumens to aid multiple drug infusion, a trauma line to be able to transfuse large volume of blood, blood products and fluids, large bore peripheral lines and two arterial lines - one on each hand. Blood investigations (full blood count, coagulation profile and arterial blood gas) are taken hourly or half hourly and values are corrected accordingly. Other special equipment we use include a rapid fluid infuser and a cell saver.

The surgeries are long and grueling, starting usually by 7.00am and finishing in the evening, sometimes even as late as 10.00pm. But everyone is usually cheerful and in a good mood. Most of the time, it will be the same people who come for all the transplants so there is a kind of harmony, a camaraderie. What also helps is the promise of yummy breakfast, lunch and tea time which is catered for the whole transplant team. Full stomach = happy team.



*Diseased liver vs healthy liver ready to be transplanted*

Once the native liver is explanted, it is kind of a 'tradition' for everyone in OT to guess the weight of the liver. Then the liver is weighed - unfortunately no prize is given to the winner. The moment everyone looks forward to in

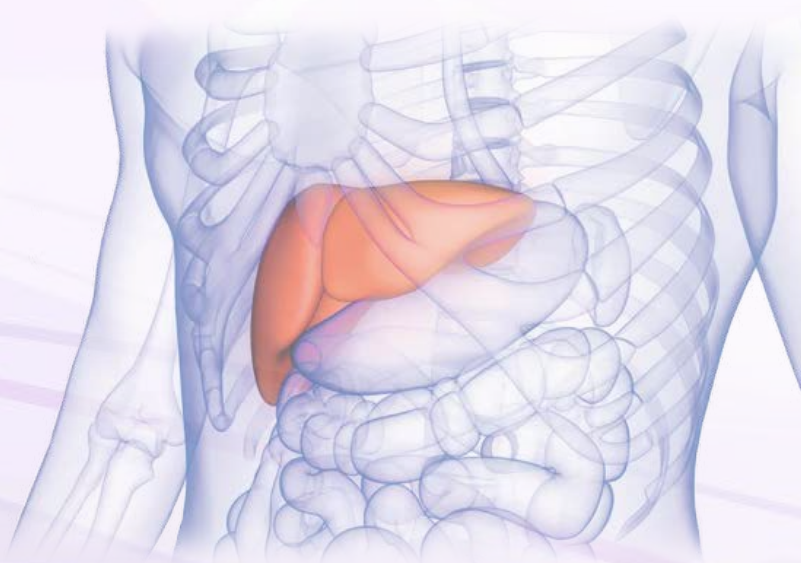
anticipation is during the Doppler scan by the radiologist. Once he/she confirms that the flow is good, everyone breathes a sigh of relief. Everyone seems to be merrier, there is an increase in chatter and there is a spring in their steps. Seventy-five percent of the surgery is over and one can hope to be able to go back home in a couple of hours.



*Native vs transplanted liver*

The number of liver transplants that we perform are far less than many other countries in the region. However, with the improved awareness on brain death and organ donation, our numbers have improved tremendously. The TOP team and their relentless efforts have to be applauded. We, the Liver Transplant Team in Hospital Selayang, are also hoping that we can cater for more living related liver transplants so that patients with chronic liver failure can lead an improved quality of life without waiting too long in the transplant waitlist.

2021 started off with a bang for us here in Hospital Selayang. We had a brain-dead-donor liver transplantation on the first day of the year. We are taking this as a good sign and feeling optimistic that we can break the 2020 record of 20 cases (fingers and toes crossed). May 2021 prove to be a better year for everyone!





# Immediate Postoperative Extubation in Paediatric Cardiac Service in Malaysia: Is it Revolutionary or Just a Dream?

by Dr Aizatul Isla

Paediatric cardiac anaesthesia service in Hospital Serdang has marked another milestone in the history of the Ministry of Health (MOH) when we introduced on-table extubation of the patient within the immediate postoperative period.

The journey of paediatric cardiac anaesthesia service in Hospital Serdang began with Dato' Dr Norly Ismail when she performed the first Patent (or Patient) Ductus Arteriosus ligation in 2010. Later, the structural paediatric complex congenital cardiac anaesthesia service was introduced in the year 2012 by Dr Mohd Ramdzan Md Jamil and Dr Hamidah Ismail, consisting of dedicated operating theatre time and team in the hospital. Even though the service is in its early stages, we have become the centre of complex paediatric anaesthesia cardiac service in the country in addition to the Institute Jantung Negara in providing the service for the whole nation.



*The first patient who was extubated immediately post TOF repair in February 2020*

In 2018, a collaboration was initiated by the Children's Heart Link (CHL) from the UK and the MOH as a series of plans for future development and training initiation in the MOH paediatric cardiac services. The first visit by the team from the Birmingham's Children Hospital (BCH) consisted of a team of a paediatric cardiac surgeon, paediatric cardiac anaesthesiologist, perfusionist, paediatric cardiologist, paediatric cardiac intensivist and supporting nurses to provide guidance and training for our local team. The second visit to Malaysia was in February 2020 and we were introduced to the concept of on-table extubation in the operating theatre for paediatric cases guided by Dr Jimmy Montgomery, the paediatric cardiac

anaesthesiologist of BCH after evaluating the feasibility of the technique in our service. Periodic continuous medical education via teleconferences has been continued between our team and the BCH team during this pandemic era.

17<sup>th</sup> February 2020 marked our first milestone of 'on-table extubation' by our local team, just two weeks after the last visit by the BCH team. A three-year-old child who underwent Tetralogy of Fallot (TOF) repair was extubated on table and sent to the Paediatric Cardiac Intensive Care Unit (PCICU) and was discharged well from the unit on the fourth postoperative day. The patient was subsequently discharged home on the seventh day postoperatively. Since then, we have performed on-table extubation for a total of five cases namely two cases of TOF repair, two cases of ventricular septal defect repair with pulmonary hypertension, and one case of atrial septal defect repair. Mean age for the cases was 3.5 years, ranging between 3 years old to 5.5 years old. There was no reported reintubation postoperatively for all cases.



*The third patient, post VSD closure, was sent to PCICU with face mask 5L/min O2 and vital signs monitoring*

From this series of cases, we found that good communication and collaboration between the cardiac anaesthesiologist, the paediatric cardiac surgeon, and the PCICU team were essential to ensure the safety and success of the 'revolution' in the service. With the full support from the service director and the whole team, we shall be able to implement immediate postoperative



extubation in paediatric cardiac patients as this advancement has been proven to minimize morbidity, ensuring functional status of the patients and we can utilise the health care resources more effectively, especially the occupancy of PCICU beds and ventilators. Immediate postoperative extubation or early extubation after many congenital cardiac surgeries has been reported decades ago at the international level. Hence, many institutions have adopted this approach. Ironically, postoperative mechanical ventilation that we thought previously as a must to maintain patient stability has been recognised to have increased risk of adverse outcomes in the postoperative period. We are proud to be the first paediatric cardiac anaesthesia service that has performed this technique in Malaysia.





# First Living Related Liver Transplant in Tunku Azizah Hospital, Kuala Lumpur

by Dr Mohd Lutfi Nijar

The last time a Ministry of Health (MoH) hospital conducted a paediatric liver transplant for a child who is less than five years old was more than 10 years ago. Somehow, these services have focused on the older age group of paediatric patients. However, there is an increasing need for paediatric liver transplant services in the country and Hospital Selayang is the epicentre from which these services are expanding from.



On 19<sup>th</sup> December 2020, we successfully conducted a living related liver transplant in a one-and-a-half-year-old child with Biliary Atresia post KASAI procedure. The indications for the liver transplant were deteriorating in liver function and failure to thrive. The donor was the patient's mother. This case was the first liver transplant conducted in Hospital Tunku Azizah, Kuala Lumpur. Because of the complexity of the procedure and perioperative care and treatment follow up, the preparation itself took a few years. The Paediatric Anaesthetic Team in HTA has been working closely with the anaesthetic liver transplant team from Selayang Hospital lead by Dr Ahmad Suhaimi Amir.



On the day of the surgery, Dr Manisekar Subramaniam, a hepatobiliary surgeon from Hospital Sultanah Bahiyah led the surgical donor team and Dato' Dr Zakaria Zahari, Head of Paediatric Surgical Team, HTA led the recipient team. For the anaesthesia teams, Dr Hamidah Ismail led the donor team while Dr Intan Zarina led the recipient team. We were pleased to have received the assistance

from liver transplant teams including surgical, anaesthetic and nursing team from Selayang Hospital throughout the surgery. This collaboration provided invaluable experience of working seamlessly together towards a successful outcome for the patient.

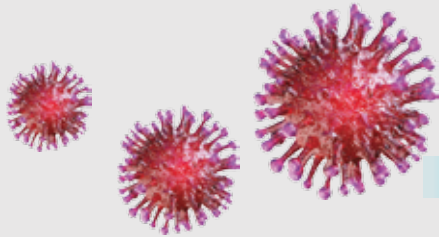


The whole surgery took about 12 hours and the patient was transferred to the Paediatric Intensive Care.

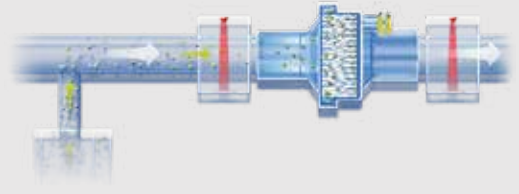
The success of this first surgery became a motivation for us to continue and to have more frequent paediatric liver transplants in this hospital. We have already planned to have a second living related liver transplant in January 2021 and probably targeting one surgery every two months in the future.

# Coronavirus disease (COVID-19) Viral protection

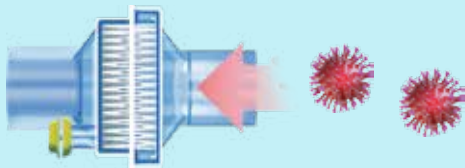
with Pall Breathing System Filters  
in Mechanical Ventilation



A novel Coronavirus outbreak is developing fast and has affected many people and claimed thousands of lives



**Pall Breathing System Filters** have been shown in laboratory testing to retain airborne viruses at >99.999% and liquid borne viruses at 100% efficiency<sup>1,2,3</sup>



Based on the size and shape of the Coronavirus and on existing data for MS2, HCV and H1N1 we expect **Pall Breathing System Filters** to provide high levels of retention for the SARS-CoV-2 from ventilated patient's exhaled breath



Clinical studies confirmed that **Pall Breathing System Filters** meet the highest performance standards in the prevention of cross contamination<sup>4,5</sup>



BB25



BB50T



BB100E

Learn more:  
[medical.pall.com/en/  
mechanical-ventilation/coronavirus](https://medical.pall.com/en/mechanical-ventilation/coronavirus)



**Pall Malaysia**  
Level 27-01, PJX-HM Shah Tower, No. 16A,  
Persiaran Barat,  
46050 Petaling Jaya, Selangor, Malaysia.

Email: [customer\\_service\\_malaysia@pall.com](mailto:customer_service_malaysia@pall.com)  
WhatsApps/Mobile: +6012 323 1220

<sup>1</sup> Heuer et al (2013); GMS HygInfect Control 8(1):Doc09

<sup>2</sup> Lloyd G et al. AnaesthesiaIntensive Care (1997) 25: 235

<sup>3</sup> Lloyd G & Howells J, CAMR (1997)

<sup>4</sup> Hübner et al.(2011); GMS Krankenhaushygiene Interdisziplinär Vol. 6(1) ISSN 18635245

<sup>5</sup> Dubler et al.(2016); Acta Anaesthesiologica Scandinavica Oct;60(9):1251-60



## From Minor Hospital to State COVID-19 Hospital: 'Hospital Enche' Besar Hajjah Khalsom Kluang

by Dr Aizzul Arief Abd Rahim, Dr Izwan Taufik Zainudin, Dr Muhamad Asif Fahmy Elvi Sazali,  
Dr Ngazraini Abdul Maei, Dr Khairil Syahmi Mokhtar & Dr Norfadhilah Mohamad Ayub

The year 2020 has truly been a defining moment for most people in our generation with the emergence of COVID-19 disease, bringing unprecedented changes in healthcare and socio-economics. Healthcare workers throughout the country were faced with heightened burden on our system with the escalating incidence of COVID-19, causing much strain on our already limited intensive care capacity.

In mitigating the spread of COVID-19, Hospital Enche' Besar Hajjah Khalsom was designated as a full COVID-19 hospital on 26<sup>th</sup> March 2020 and upon the passing of the COVID-19 second wave in Malaysia, the hospital continued to function as a COVID-19 hybrid hospital. The hospital was reactivated as a full COVID-19 hospital on 25<sup>th</sup> November 2020 as cases started to rise in the state during the third wave.



In order to effectively manage the increasing number of critically ill COVID-19 patients, our intensive care unit was expanded from the original 6 beds to 32 beds by gazetting the Cardiac Care Unit, Daycare Surgical ward and Antenatal ward as critical care areas. Additional manpower was recruited from other units and centres in Johor, allowing expansion of our roster with increase of nursing staff from 30 to 120 people, increase of anaesthetists from 3 to 15 people and increase of medical officers from 18 to 29 people. Dr Azmin Huda Abdul Rahim, Consultant Intensivist from Hospital Sultan Ismail, effectively became our in-house intensivist by staying in HEBHK to manage the ICU.

Over the last quarter of 2020, there was an increase of ICU admissions and surgical operations involving COVID-19 patients. The ICU admission during those 3 months was 7, 41 and 79 patients respectively, correlating well with the rise of cases in the state. Gender distribution was equal while 58% of the patients belong in the age group of

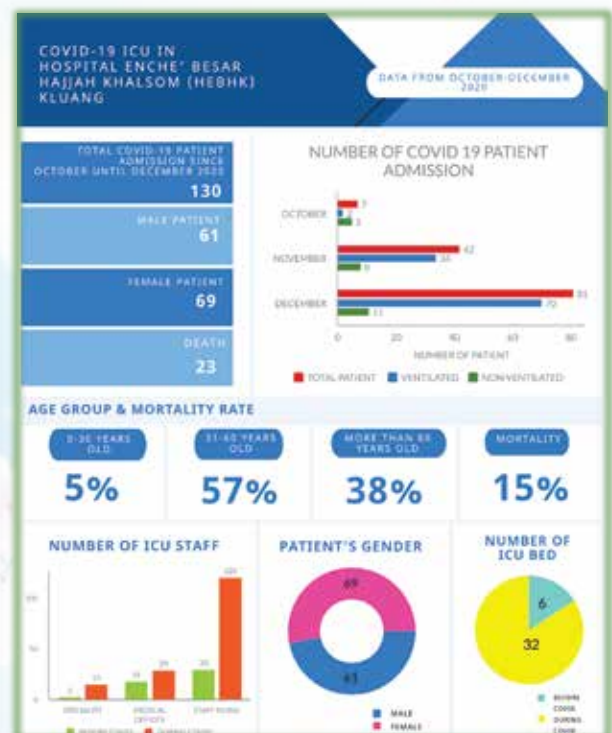
30-60 and 38% belong in the age group of >60. 82% of the patients admitted were ventilated.

During that period, the mortality rate was 15%, well below the UK ICU mortality rate from March to May 2020 of 41.6%. This can be attributed to the better preparation for surge capacity, physical presence of intensivists, higher number of healthcare workers, better understanding of pathophysiology of COVID-19 disease and greater employment of evidence-based medicine / practise.

As for the operating theatre, 2 surgical cases under regional anaesthesia were performed in November 2020 while another 15 cases were undertaken in December 2020 with 9 cases under general anaesthesia and 6 cases under regional anaesthesia. The majority of the cases involve Caesarean section and tracheostomy.

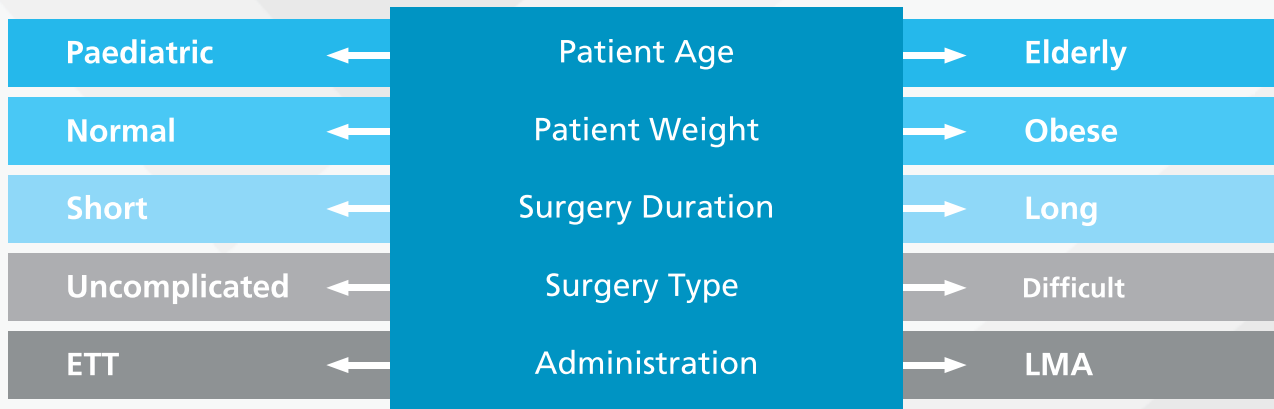


It has been a challenging period not only physically, but also mentally, emotionally, and spiritually. While some did not make it through, others recovered and that lifted our spirits to keep going. Throughout this pandemic, we believe that being the last line of defence plays a crucial role in a patient's prognosis and we hope to continue to fight and win this war soon!



# SUPRANE: PREDICTABLE PERFORMANCE ACROSS THE BROAD SPECTRUM

Broad spectrum of use as a maintenance anaesthetic agent



Suprane's (desflurane) favourable pharmacokinetic profile with low blood and tissue solubilities<sup>1</sup> facilitates:

- Fastest wash-in and wash-out of all current potent inhaled anaesthetic agents<sup>2,3-5</sup>
- Rapid and predictable early recovery in a majority of patients and procedures<sup>6-12</sup>

## SUPRANE API

**PRESENTATION:** SUPRANE (desflurane, USP) is a colourless, volatile liquid for inhalation containing 100% desflurane. **INDICATIONS:** SUPRANE (desflurane) is indicated as an inhalation agent for induction and/or maintenance of anaesthesia for inpatient and outpatient in adults and maintenance of anaesthesia in infants and children. **DOSAGE AND ADMINISTRATION:** SUPRANE (desflurane) is administered by inhalation. The concentration of SUPRANE (desflurane) should be delivered from a vapouriser specifically designed and designated for use with SUPRANE (desflurane). The administration of general anaesthesia must be individualised based on the patient's response. **CONTRAINDICATIONS:** SUPRANE (desflurane) is contraindicated in patients: • in whom general anaesthesia is contraindicated. • with known sensitivity to halogenated agents. • with a known or suspected genetic susceptibility to malignant hyperthermia. • with a history of confirmed hepatitis due to halogenated inhalational anaesthetic or with a history of unexplained moderate to severe hepatic dysfunction (e.g., jaundice associated with fever and/or eosinophilia) after anaesthesia with a halogenated inhalation anaesthetic. • SUPRANE (desflurane) is contraindicated for use as an inhalation induction agent in paediatric patients because of the frequent occurrence of cough, breath holding, apnoea, laryngospasm and increased secretions. **SPECIAL WARNINGS AND PRECAUTIONS FOR USE:** Warnings: Malignant hyperthermia (MH): In susceptible individuals, potent inhalation anaesthetic agents may trigger a skeletal muscle hypermetabolic state leading to high oxygen demand and the clinical syndrome known as malignant hyperthermia. Suprane (desflurane) was shown to be a potential trigger of malignant hyperthermia. The clinical syndrome is signal led by hypercapnia, and may include muscle rigidity, tachycardia, tachypnoea, cyanosis, arrhythmias, and/or unstable blood pressure. Some of these non-specific signs may also appear under light anaesthesia: acute hypoxia, hypercapnia, and hypovolaemia. Treatment of malignant hyperthermia includes discontinuation of triggering agents, administration of intravenous dantrolene sodium and application of supportive therapy. Renal failure may appear later, and urine flow should be monitored and sustained if possible. Suprane (desflurane) should not be used in subjects known to be susceptible to MH. Fatal outcome of malignant hyperthermia has been reported with desflurane. Perioperative Hyperkalaemia: Use of inhaled anaesthetic agents, including SUPRANE (desflurane), has been associated with rare increase in serum potassium levels that have resulted in cardiac arrhythmias, some fatal, in patients during postoperative period. Patients with latent as well as overt muscular dystrophies, particularly Duchenne Muscular Dystrophy, appear to be most vulnerable. Concomitant use of succinylcholine has been associated with most, but not all, of cases. These patients also experienced significant elevations in serum creatine kinase levels and, in some cases, changes in urine consistent with myoglobinuria. Despite the similarity in presentation to malignant hyperthermia, none of these patients exhibited signs or symptoms of muscle rigidity or hypermetabolic state. Early and aggressive intervention to treat the hyperkalaemia and resistant arrhythmias is recommended, as is subsequent evaluation for latent neuromuscular disease. Paediatric Inhalation Induction: SUPRANE (desflurane) is not indicated for use as an inhalation induction agent in children and infants because of the frequent occurrence of cough, breath holding, apnoea, laryngospasm and increased secretions. Use in Children with Bronchial Hypersensitivity: SUPRANE (desflurane) should be used with caution in children with asthma or a history of recent upper airway infection due to the potential for airway narrowing and increases in airway resistance. Maintenance of Anaesthesia in Children: Due to the limited data available in non-intubated paediatric patients, SUPRANE (desflurane) is not approved for maintenance of anaesthesia in non-intubated children. Caution should be exercised should SUPRANE (desflurane) be used for maintenance anaesthesia with laryngeal mask airway (LMA) in children, in particular for children 6 years old or younger because of the increased potential for adverse respiratory reactions, e.g. coughing and laryngospasm, especially with removal of the LMA under deep anaesthesia. Obstetrics: Due to the limited number of patients studied, the safety of SUPRANE (desflurane) has not been established for use in obstetrics procedures. SUPRANE (desflurane) is a uterine relaxant and reduces the uterine-placental blood-flow. (See **PREGNANCY AND LACTATION**). QT Prolongation: QT Prolongation, very rarely associated with torsades de pointes, has been reported (see **ADVERSE REACTIONS**). Caution should be exercised when administering SUPRANE (desflurane) to susceptible patients (e.g. patients with congenital Long QT Syndrome or patients taking drugs that can prolong the QT interval). Precautions: With the use of halogenated anaesthetics, disruption of hepatic function, icterus and fatal liver necrosis have been reported; such reactions appear to indicate hypersensitivity. SUPRANE (desflurane) may cause sensitivity hepatitis in patients who have been sensitized by previous exposure to halogenated anaesthetics. Cirrhosis, viral hepatitis, or other preexisting hepatic disease may be a reason to select an anaesthetic other than a halogenated anaesthetic. SUPRANE (desflurane) may produce a dose-dependent increase CSF when administered to patients with intra-cranial space occupying lesions. SUPRANE (desflurane) should be administered at 0.8 MAC or less, and in conjunction with a barbiturate induction and hyperventilation (hypocapnia) until cerebral decompression in patients with known or suspected increase in CSF. Appropriate attention must be paid to maintain cerebral perfusion pressure. In patients with coronary artery disease, maintenance of normal haemodynamics is important for avoidance of myocardial ischaemia. Marked increases in pulse rate, mean arterial pressure and levels of epinephrine and norepinephrine are associated with a rapid increase in desflurane concentrations. SUPRANE (desflurane) should not be used as the sole agent for anaesthetic induction in patients at risk of coronary artery disease or in patients where increases in heart rate or blood pressure are undesirable. It should be used with other medications, preferably intravenous opioids and hypnotics. During maintenance of anaesthesia, increases in heart rate and blood pressure occurring after rapid incremental increases in end-tidal concentration of SUPRANE (desflurane) may not represent inadequate anaesthesia. The changes due to sympathetic activation resolve in approximately 4 minutes. Increases in heart rate and blood pressure occurring before or in the absence of a rapid increase in SUPRANE (desflurane) concentration may be interpreted as light anaesthesia. Hypotension and respiratory depression increases as anaesthesia is deepened. SUPRANE (desflurane), like some other inhalational anaesthetics can react with desiccated carbon dioxide (CO<sub>2</sub>) absorbents to produce carbon monoxide which may result in elevated levels of carboxyhaemoglobin in some patients. Case reports suggest that barium hydroxide lime and soda lime become desiccated when fresh gases are passed through the CO<sub>2</sub> canister at high flow rates over many hours or days. When a clinician suspects that CO<sub>2</sub> absorbent may be desiccated, it should be replaced before administration of SUPRANE (desflurane). As with other rapid-acting anaesthetic agents, rapid emergence with SUPRANE (desflurane) should be taken into account in cases where post-anaesthesia pain is anticipated. Care should be taken that appropriate analgesia has been administered to the patient at the end of procedure or early in the post-anaesthesia care unit stay. Emergence from anaesthesia in children may evoke a brief state of agitation that may hinder cooperation. As with all halogenated anaesthetics, repeat anaesthesia within a short period of time should be approached with caution. Facilities and equipment for maintenance of a patent airway, artificial ventilation, oxygen enrichment and circulatory resuscitation must be immediately available. **PREGNANCY AND LACTATION:** Due to the limited number of patients studied, the safety of SUPRANE (desflurane) has not been established for use in obstetric procedures. SUPRANE (desflurane) is a uterine relaxant and reduces the uterine-placental blood-flow. There are no adequate data from the use of SUPRANE (desflurane) in pregnant or lactating women. Physician should carefully consider the potential risks and benefits for each specific patient before prescribing SUPRANE (desflurane). Date of revision: September 2019

**References:** 1. Suprane Summary of Product Characteristics approved in Malaysia, July 2016. 2. Adapted from Eger EI II, Eisenkraft JB, Weiskopf RB. The Pharmacology of Inhaled Anaesthetics. Ed.: Edmond I Eger II, 2nd edition, 2003; page 45. 3. Eger EI II, Eisenkraft JB, Weiskopf RB. The Pharmacology of Inhaled Anaesthetics. Ed.: Edmond I Eger II, 2nd edition, 2003; pages 45,83-84,264,271. 4. Hargassner S, Hipp R, Breinbauer B et al. *J Clin Anesth* 1995;7:49-53. 5. Eger EI II. *Anesth Rev* 1993;20(3):87-92. 6. Moore MA et al. *Anesthesiology* 1994;81:94-98. 7. Yasuda N, Lockhart SH, Eger EI II et al. *Anesthesiology* 1991;74:489-498. 8. Yasuda N, Lockhart SH, Eger EI II et al. *Anesth Analg* 1991;72:316-324. 9. Beausseier M. *JEPU* 2002;www.jepu.net/pdf/2002/01/73.pdf. 10. Avramov MN, Griffin JD, White PF. *Anesth Analg* 1998;87:666-670. 11. Bennett JA, Mahadeviah A, Stewart J et al. *J Clin Anesth* 1995;7:288-291. 12. Dupont J, Tavernier B, Ghouse Y et al. *Br J Anaesth* 1999;82:355-359.

SCAN ME

Your opinion matters: Please share with us your opinion on the progression in anesthesia management. Your feedback will allow us to better meet your expectations.



For Healthcare Professionals Only.

For full prescribing information, please contact Baxter Healthcare Sdn. Bhd.

Baxter Healthcare (Malaysia) Sdn Bhd (159204-W)

B-21-3A, Level 21, The Ascent, Paradigm, No. 1, Jalan SS 7/26A, Kelana Jaya, 47301 Petaling Jaya, Selangor Darul Ehsan.

Tel:+603 7611 6899 Fax: +603 7611 6800

**Baxter**  
**Sevoflurane**  
Inhalation Anesthetic

**Baxter**  
**Suprane**  
[DESFLURANE, USP]



# The End Game For Ventricular Fibrillation Storm After Aortic Declamping - Hospital Sultanah Aminah Johor Bahru Experiences Silencing the Rebellious...

by Dr Mohd Khairul Anwar, Dr Zoolfadhli Hashim, Dr Thivya Roopini, Dr Affendi Ali,  
Dr Mohd Firdaus Shamsuddin, Dr Liaw Yean May, Mr Simon J Vendargon & Mr Syed Rasul

## INTRODUCTION

Ventricular dysrhythmias always becomes a threat after removal of aortic cross clamp in cardiac surgeries, such as Valve Replacement and Coronary Artery Bypass Graft. This is most likely due to **Ischemic-reperfusion injury** after the release of aortic clamp, increased adrenergic tone, and insufficient protection of the myocardium.

In the majority of cases, **direct current defibrillation** is able to reinstate normal sinus rhythm, allowing the patient to be weaned off cardiopulmonary bypass smoothly. Even so, there are still a **minority of patients in which ventricular dysrhythmias persisted** despite receiving multiple defibrillations. In this situation, the usual standard management include administering Lidocaine, Magnesium and Amiodarone then proceed to

repetitive defibrillation until patient's electrocardiogram reading reverts back to sinus rhythm.

With repetitive defibrillation, there are risks of **damaging the myocardium, decrease in cardiac function and also lowers the threshold of fibrillation** which may result in greater susceptibility of recurrent fibrillation i.e **VT/VF storm**.

Once the patient **enters the stage of VT/VF storm**, it is like being trapped in a maze which is difficult to find the exit. Though rare, we came across one such case in our centre in which it was successfully reverted using a combination of **Chemical, Electrical and Mechanical methods** which will be discussed further into this report.

Table I: Risk factors of Ventricular Fibrillation Post Aortic Declamping

Risk Factors of Ventricular Fibrillation Post Aortic Declamping	
<b>Preoperative Causes</b>	
a.	Age: Common in older patients.
b.	Preoperative arrhythmias: Patients with pre-existing AF, heart block and ventricular arrhythmias.
c.	Mitral valve disease with an enlarged left atrium.
d.	Patients with dilated left ventricles (ischemic cardiomyopathy, decompensated valvular heart disease).
e.	Hypertrophic left ventricles (aortic stenosis, hypertensive cardiomyopathy).
<b>Intraoperative Causes</b>	
a.	Poor intraoperative cardioprotection <ul style="list-style-type: none"><li>- Ineffective cooling, Inadequate cardioplegia, Incomplete electromechanical arrest.</li><li>- Early unwanted return of electrical activity during intermittent cardioplegia arrest.</li></ul>
b.	Ventricular distension.
c.	Surgical procedure <ul style="list-style-type: none"><li>- Incomplete myocardial revascularization, coronary air embolism, coronary Vasospasm, conduit kinking or occlusion, hypoxia.</li><li>- Damage to the conduction pathways during decalcification and suturing of mitral or aortic valve annulus, atriectomy, or ventriculotomy.</li><li>- Incomplete de-airing of the heart.</li><li>- Failure of valve repair or replacement.</li><li>- Pulmonary artery catheter (particularly if misplaced in RV).</li></ul>

## CASE REPORT

A 21 years old male patient with severe mitral valve regurgitation underwent mitral valve repair surgery. Transthoracic Echocardiography indicates severe mitral valve regurgitation with Ejection Fraction of 57%. Pre-operative blood investigations were found within normal ranges. Patient was put under general anaesthesia

using intravenous Midazolam, Propofol, Rocuronium and Fentanyl. Airway was secured. Anaesthesia was maintained by inhalational Sevoflurane and intravenous infusion of Remifentanyl and Precedex.

After median sternotomy, full heparinization and optimal activated clotting time, cardiopulmonary bypass was

instituted at a body temperature of 28°C, with the arterial cannula placed in the ascending aorta and venous cannula in superior and inferior vena cavae. An aortic root vent was inserted. No left ventricle vent was inserted. The flow rate of cardiopulmonary bypass was 2.8L/min/body surface area. Blood cardioplegia was given through modified microplegia technique with St Thomas PLEGIOCARD Solution.

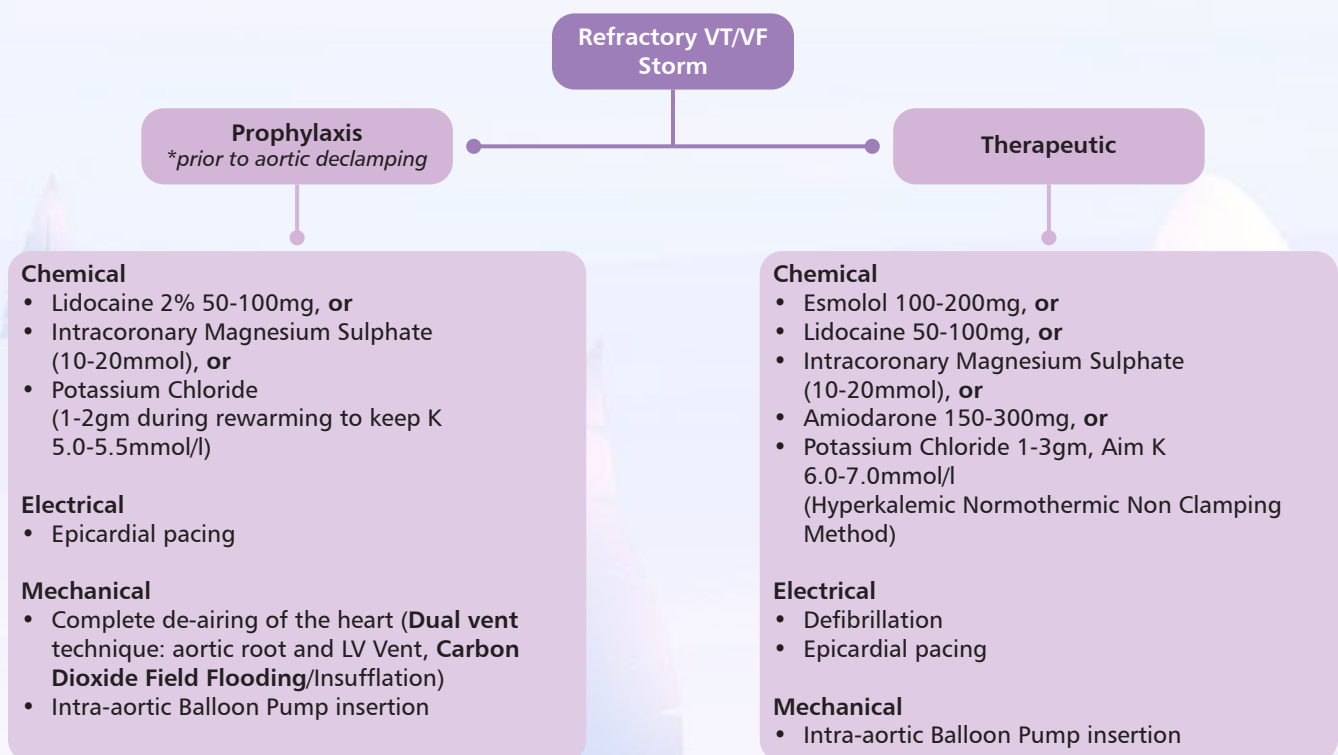
Conventionally, terminal warm blood cardioplegia (warm shot) was infused before aortic declamping and prophylactic **magnesium sulphate (10-20mmol) or Lignocaine 100mg or plus Amiodarone 150mg** (if presence of heart chamber dilatation) are routinely given just before aortic declamping. Using this technique, normal sinus rhythm can be restored without the need for defibrillation after aortic declamping.

However in this patient, **refractory Ventricular Fibrillation** developed after removal of the aortic cross clamp even though patient was infused with terminal warm blood cardioplegia, prophylaxis magnesium sulphate 20mmol and lignocaine 100mg. Defibrillation at 10 J, 20 J initiated but failed to resolve the Ventricular Fibrillation. Another 5 to 10 defibrillations at 50 joules each were given, yet unsuccessful. **A total of 22 defibrillations** were attempted but to no avail. During

this span of time, all possible anti-arrythmic agents i.e **Amiodarone (300mg), Magnesium (additional 10mmol), Propanolol (2mg) and Diltiazem (100mg)** were administered but futile.

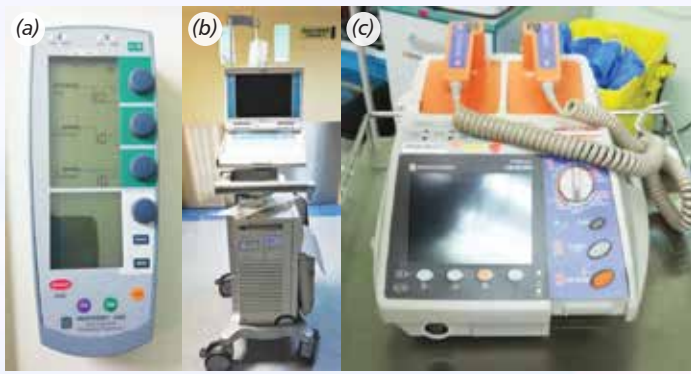
Thus, we applied **secondary aortic clamping** with immediate administration of **second cycle of cardioplegia** and **cooled down to 32°C**. Trial of weaning off cardiopulmonary bypass after resting the heart for about 30 minutes and warming up to 36.5°C still resulted in refractory ventricular fibrillation storm and **tertiary aortic clamping** and **third cycle of cardioplegia** was attempted.

In the meantime, our team decided to put **epicardial pacing at atrial and ventricle with AV sequential mode**, insertion of **Intra-Aortic Ballon Pump via the femoral artery** and administration of **Esmolol 100mg** before embarking again from cardiopulmonary bypass. Only after Esmolol 100mg (**Chemical**) along with the forementioned measures namely epicardial pacing (**Electrical**) and IABP (**Mechanical**), the **three hours duration of refractory Ventricular Fibrillation** was successfully reverted after aortic declamping. Paced sinus rhythm ensured **no more recurrent episodes** of Ventricular Fibrillation storm and IABP helped to **decompress left ventricular distension effectively**.



**Figure 1:** Chemical, Electrical and Mechanical Components as prophylaxis and treatment of VF Storm





**Figure 2:** Pacer (a) and Defibrillator (c) are electrical methods of treating and preventing Ventricular Fibrillation. Intra-Aortic Balloon Pump (b) is the mechanical method of treatment in the incidence of Ventricular Fibrillation

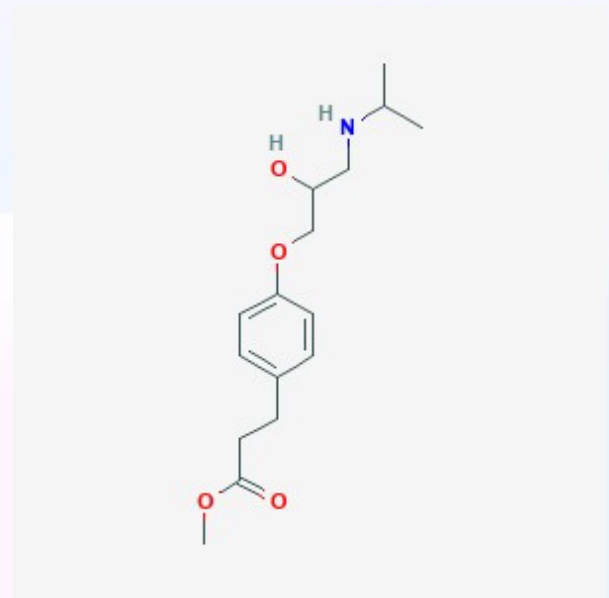
### ***The Role of Esmolol in Resetting the Heart from Refractory Ventricular Fibrillation***

Beta blockers have many beneficial effects on myocardial cells. They **reduce the risk of sudden cardiac death associated with myocardial infarction by 30%.**<sup>1</sup> In refractory ventricular fibrillation, there is a large increment in sympathetic tone, likely partially due to epinephrine given, which results in increased myocardial oxygen demand, exacerbation of myocardial ischemia and lowers the ventricular fibrillation threshold. Esmolol is the perfect sympatholytic and **it increases defibrillation threshold.** Esmolol is preferred over Propranolol due to its faster onset of action and shorter half-life of any other Beta-blocker.<sup>2</sup>

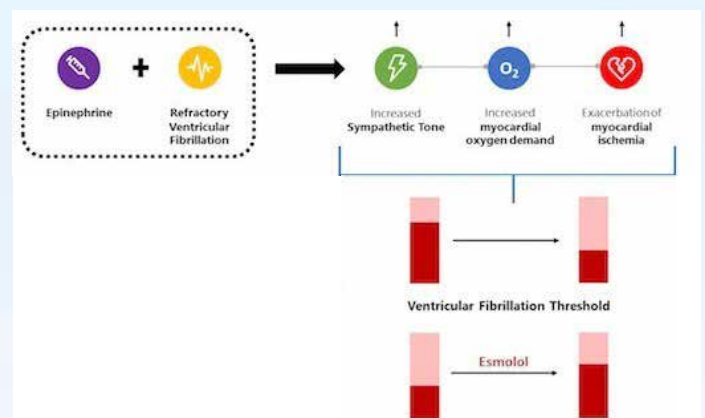
There are few studies which described their experience using Esmolol, and ultra-short acting Beta Adrenergic antagonist as a feasible adjuvant therapy for the treatment of refractory ventricular fibrillation. **Esmolol helps in increasing the left ventricular function when administered during cardiopulmonary bypass (CPB) or within 10 min after releasing the aortic clamp.**<sup>3</sup> The increase in left ventricular function works as a preventive measure in reducing the incidence of Ventricular Fibrillation. However there is currently insufficient evidence to support the widespread implementation of this therapy.

Beta blockers have proven to be beneficial on the heart in both ischemic and non-ischemic conditions by **reducing the oxygen consumption** of the myocardium and hence reducing the **incidence of myocardial infarction and Ventricular Fibrillation** all at once.

This study suggests that **sympathetic blockade by Esmolol** may be useful during the treatment of refractory VF/VT storm.<sup>4</sup>



**Figure 3:** Chemical structure depiction of Esmolol



**Figure 4:** Consequences of Refractory VF. Consider Esmolol to increase the VF threshold hence reducing incidence of VF

### **Potassium Chloride Administration via the Pump, a Chemical Conversion of Ventricular Fibrillation After Aortic Declamping**

The role of Potassium in reversing ventricular fibrillation has been well recognised from few clinical reports.<sup>5</sup> In a normothermic, non clamped heart, slow infusion of 10-20mmol Potassium chloride through the aortic root cannula during incidence of refractory Ventricular Fibrillation delivers a high concentration of potassium at the aortic root, leading to a transient asystole that lasts for approximately 1 minute.

Consequently, the heart may be restarted gradually but at an **idioventricular rhythm (absence of P waves and widening of QRS complex)**. As time goes by, the wide QRS complex will eventually normalize and increase of heart rate takes place as the blood potassium level decreased slowly from renal ultrafiltration. The patients were then smoothly weaned from cardiopulmonary

bypass and the postoperative course was uneventful with no more ventricular dysrhythmias.

We have encountered a case of Coronary Artery Bypass Graft (CABG) in our centre in which went into cardiac arrest during left internal artery harvesting prior to Cardiopulmonary Bypass (CPB). Internal cardiac massage was commenced while the surgeon and perfusionists prepare for cannulation. A total of 4mg Epinephrine given intravenously. Subsequently patient developed **pulseless VT/VF. Direct current defibrillation at 10 and 20 Joules was delivered with a total of 5 attempts** and IV Amiodarone 300mg along with IV Esmolol 100mg given and Ventricular Fibrillation resolved. Patient was immediately put on bypass after the onset of cardiac event. The surgery went smoothly, however after Aortic Declamping, patient went into **another VF storm**. A total of **11 direct current defibrillation given, ranging from 10-30 Joules**. In this period of time, drugs given were as follows; Amiodarone 300mg, Lidocaine 100mg, Intracoronary Magnesium Sulphate 20mmol/L, esmolol 100mg. Then 1gm of potassium chloride given **with total of 3g** eventually managed to stop VF storm. Potassium level was 6.5mmol/l after 3gm. This escape was achieved **without the need of second cycle of cardioplegia with secondary aortic clamping** and body cooling. Hence it is known as **"Hyperkalemic Normothermic NonClamping Method"**. When the potassium level dropped less than 5.5mmol/l, we managed to successfully weaned off the cardiopulmonary bypass.

**PERFUSION DATA REPORT**

Patient Name: [Redacted] Date: [Redacted] Ref No: [Redacted] Surgeon: [Redacted] Perfusionist: [Redacted]

**Drugs Administered:**

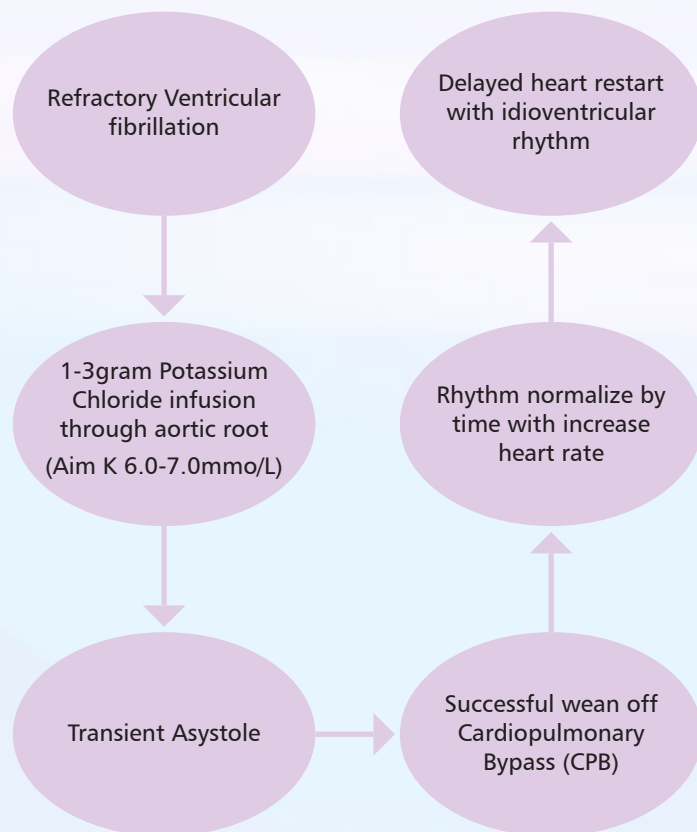
Drug	Dose	Time	Remarks
Amiodarone	300mg	[Redacted]	For VF storm
Lidocaine	100mg	[Redacted]	For VF storm
Esmolol	100mg	[Redacted]	For VF storm
Potassium Chloride	3g	[Redacted]	For VF storm
Intracoronary Magnesium Sulphate	20mmol/L	[Redacted]	For VF storm

**Vital Signs:**

Time	HR	BP	SpO2	Temp	FiO2	PEEP	Flow	Pressure
12:00	120	120/80	98%	36.5	21%	5	2.5	120/80
12:10	110	110/70	98%	36.5	21%	5	2.5	110/70
12:20	100	100/60	98%	36.5	21%	5	2.5	100/60
12:30	90	90/50	98%	36.5	21%	5	2.5	90/50
12:40	80	80/40	98%	36.5	21%	5	2.5	80/40
12:50	70	70/30	98%	36.5	21%	5	2.5	70/30
13:00	60	60/20	98%	36.5	21%	5	2.5	60/20
13:10	50	50/10	98%	36.5	21%	5	2.5	50/10
13:20	40	40/0	98%	36.5	21%	5	2.5	40/0
13:30	30	30/0	98%	36.5	21%	5	2.5	30/0
13:40	20	20/0	98%	36.5	21%	5	2.5	20/0
13:50	10	10/0	98%	36.5	21%	5	2.5	10/0
14:00	0	0/0	98%	36.5	21%	5	2.5	0/0

Signature: [Redacted]

**Figure 5:** Perfusion Data Sheet illustrating the usage of Potassium Chloride and Intracoronary Magnesium Sulphate to stop Refractory Ventricular Fibrillation in Coronary Artery Bypass Graft (CABG) surgery



**Figure 6:** Mechanism of Hyperkalemic Normothermic Non-Clamping method in treatment of Refractory Ventricular Fibrillation Post Aortic Declamping



**Figure 7:** Potassium Chloride, a chemical conversion agent that is vital in treating Refractory Ventricular Fibrillation

## Intracoronary Magnesium Sulphate Therapy for Refractory Ventricular Fibrillation

Magnesium sulphate is a physiological calcium channel blocker that helps to stabilize membrane potential threshold. During aortic unclamping, there tends to be **calcium overloading** over the coronary circulation as part of reperfusion Injury cascade. Physiological property of magnesium may have protective effect on patient both therapeutic and prophylactic. Hypomagnesaemia which is not uncommon in cardiac surgery, may **trigger cardiac arrhythmias** and aggravates the condition if not treated promptly. Thus, addition of magnesium can stabilize the myocardial cell membrane and protects the heart from ventricular arrhythmias.



There are a few mechanism postulated that explain magnesium role in preventing ventricular fibrillation other than **reduction of calcium overload** in myocardial mitochondria. Firstly, it helps the **conservation of intracellular ATP** by forming ATP-magnesium complex. It was also thought have **antioxidant effects** towards free radicals generated during aortic- clamping induced ischaemia which eventually reduces the oxidative stress on the myocardium. Lastly, magnesium was observed to **reduce sympathetic tone** by reducing catecholamine release.

According to a case study conducted by R Gopinath et al, they are convinced that with the addition of magnesium sulphate before or during cardiopulmonary bypass was found to be effective in lowering the number of defibrillations. In their case, their patient has developed refractory ventricular fibrillations which was reverted immediately to sinus rhythm right after **intra-aortic administration of magnesium sulphate during cardiopulmonary bypass**.<sup>6</sup>

In our centre, we utilized cardioplegia line integrated with aortic root vent for infusion of **magnesium sulphate 10mmol in 20ml syringe of Normal Saline**. Magnesium is given with infusion pump running at **500ml per hour concurrently with warm shot delivery** prior to aortic cross declamping.

The case aforementioned in this article is one of many cases that we have employed these techniques and prove to be a reliable solution especially involving refractory ventricular fibrillation post aortic declamping.



**Figure 8:** Intracoronary Magnesium Sulphate given via the cardioplegia line through the Aortic root which plays an important role in correction of Refractory Ventricular Fibrillation

### Air Embolism in Cardiac Surgery: An Undesired Consequence

Gaseous microemboli is usually the undetected culprit causing Refractory Ventricular Fibrillation in patients undergoing cardiac surgery. It may emerge from a few potential places including the surgical field, where the left

heart i.e the left atrium and ventricle or aortic root were exposed to surrounding air, the venous line, the pump reservoir and oxygenator. Remnant air which has not been removed, is likely to penetrate the systemic system as air emboli and occlude small vessels causing undesirable complications such as ventricular fibrillation, stroke and delirium.

De-airing of the heart is the deliberate actions taken by multidisciplinary teamwork in order to remove trapped air from inside of the heart chambers and the aortic root, at the same time able to prevent the formation of air emboli.

One of the conventional methods of de-airing includes the filtration of blood in the extracorporeal circulation circuit. The cardiopulmonary bypass machine is well equipped with integrated system of filters, acting as the barrier preventing both solid and air microemboli from escaping into the circulation system during cardiopulmonary bypass in cardiac surgery. Simply put, every component of the extracorporeal circulation circuit has their own safety mechanisms to prevent the occurrence air embolism such as a bubble detector surrounding the tubing of arterial line and a low level sensor over the venous reservoir. The venous reservoir also contains a specialised filter which entraps air bubbles and debris in the blood from the venous returns. Furthermore, the hollow fiber membrane oxygenator plays an important role in removing a large amount of gaseous microemboli.

Another critical condition that need to be fulfilled to reduced the incident of VF is absence of air embolus in patient circulatory system. Most of these air micro emboli originated from the CPB circuit or from the cardiac chambers and the pulmonary veins as a consequence of cannulation of heart chamber. It is vital to prevent the air emboli to travel into coronary ostia and thus promoting incidence of ventricular fibrillation.

One of the surgical approach to ensure optimal de-airing in the heart chamber is by **applying dual venting technique on both aortic root vent and left ventricle vent**.<sup>7</sup> Apart from regularly placed aortic root vent, the left ventricular vent (via the right superior pulmonary vein) is really helpful to effectively result in complete and rapid deairing. Most of the air in the left ventricle will be **vent out before they are able to cross the aortic valve** and potentially get into the **coronary ostia** causing refractory ventricular fibrillation.

**Table II:** Summary of Prophylactic and Therapeutic Measures for Ventricular Fibrillation Storm Post Aortic Declamping in Cardiac Surgery

Primary Steps
<b>Prophylaxis (Before Aortic Declamping)</b>
<ul style="list-style-type: none"> <li>a. Lignocaine 50-100mg</li> <li>b. Intracoronary Magnesium Sulphate 10mmol during Warm Shot delivery</li> <li>c. Keep Potassium 5.0-5.5mmol/L</li> <li>d. Amiodarone 150mg (Esp. Enlarged LA, Dilated LV, Hypertrophied LV)</li> </ul>
<b>Treatment (VF after Aortic Declamping)</b>
<ul style="list-style-type: none"> <li>a. Defibrillation 10,20,50 J</li> <li>b. Esmolol 100-200mg</li> <li>c. Intracoronary/Pump Reservoir magnesium sulphate (10-20mmol/l)</li> <li>d. Intracoronary/Pump Reservoir Potassium Chloride 1-3g, aim K 6.0-7.0mmol/l (Hyperkalemic Normothermic Non Clamping Method)</li> <li>e. Amiodarone 150-300mg</li> </ul>
<b>Supportive Treatment</b>
<ul style="list-style-type: none"> <li>a. Atrial and Ventricle Epicardial Pacing</li> <li>b. Intraortic Balloon Pulsation (to decompress any LV dilatation and increase the coronary perfusion pressure)</li> <li>c. Effective and complete De-Airing (Dual Vent Technique, CO2 field flooding, application of low level CPAP during bypass that may causes reduction of air trapping in the pulmonary vein, TEE guidance to detect any residual air)</li> </ul>
<b>Secondary Steps</b>
<ul style="list-style-type: none"> <li>- 3C <ul style="list-style-type: none"> <li>• Cooling the body temperature to 32-34</li> <li>• Secondary Aortic Clamping</li> <li>• Immediate delivery of 2<sup>nd</sup> cycle of Cardioplegia</li> </ul> </li> </ul>
<b>Additional Steps</b>
<ul style="list-style-type: none"> <li>• Check graft patency</li> <li>• Check function of the valve prosthesis</li> <li>• Change to new pacer box, pacer lead or defibrillator machine</li> </ul>

Reperfusion VF aggravates the myocardial damage and electrical defibrillation may cause additional injury for **already ischemic myocardium**. Therefore, prevention and treatment for both reperfusio

n VF aggravates the myocardial damage and electrical defibrillation may cause additional injury for **already ischemic myocardium**. Therefore, prevention and treatment for both reperfusio

## REFERENCES

1. Lee YH, Lee KJ, Min YH, Ahn HC, Sohn YD, Lee WW, Oh YT, Cho GC, Seo JY, Shin DH, Park SO, Park SM. Refractory ventricular fibrillation treated with esmolol. *Resuscitation* 2016 Oct;**107**:1505
2. Driver BE, Debaty G, Plummer DW, Smith SW. Use of esmolol after failure of standard cardiopulmonary resuscitation to treat patients with refractory ventricular fibrillation. *Resuscitation* 2014 Oct;**85**(10):1337-41
3. Sun J, Ding Z, Qian Y. Effect of short-acting beta blocker on the cardiac recovery after cardiopulmonary bypass. *J Cardiothoracic Surg* 2011;**6**:99
4. Nademanee K, Taylor R, Bailey W, Rieders D, Kosar E. Treating electrical storm: sympathetic blockade versus advanced cardiac life support-guided therapy. *Circulation* 2000 Aug 15;**102**(7):742-7
5. Page R, Sharoe D, Bellamy C, Rashid A, Fabri B. Normothermic arrest with continuous hyperkalaemic blood: initial experience. *Eur J Cardiothorac Surg* 1992;**6**(9):461-7
6. Gopinath R, Prabhakar R, Rajagopal P, Intractable Ventricular Fibrillation After Cross-Clamp Removal: Intra-Aortic Magnesium a Savior. *J Cardiothorac Vasc Anesth* 1999 Dec;**13**(6):801-2
7. Milsom F, Mitchell S. A dual-vent left heart deairing technique markedly reduces carotid artery microemboli. *Ann Thorac Surg* 1998 Sep;**66**(3):785-91



# WELCOMING THE ANAESTHESIOLOGISTS MMED ANAESTHESIOLOGY 2020

## INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

Dr Arul Sakthi A/P Aruminathan	Dr Lee Soh Nam
Dr Dinakren A/L Balashanmugam	Dr Keren Lim Seok Luan
Dr Farah Nadia Binti Mohd Hanafiah	Dr Mohd Ariffudin Bin Abdul Hamid
Dr Iqbalmunauwir Bin Ab Rashid	Dr Mohd Fakhri Hilmi Bin Danial

## UNIVERSITI SAINS MALAYSIA

Dr Ahmad Tajuddin Mat Yusoff	Dr Nor Hidayah Zainool Abidin
Dr Azhar Bin Abdul Orani	Dr Nur Dyana Md Nizar
Dr Fazrena Abdullah	Dr Nur Najmi Abdul Halim
Dr Khuzaimah Binti Khairuddin	Dr Nur Samihah Abdullah @ Sudin
Dr Koh Kian Fui @ Vincent Koh	Dr Puteri Nadia Kamaruzaman
Dr Isma Syarina Ismail	Dr Siti Sarah Othman
Dr Lydia Anak Yet	Dr Sunna Saadan
Dr Mohd Ramzi Abdul Alam	Dr Tan Chee Wei
Dr Muhammad Zohdy Musa	Dr Tengku Abdul Kadir Tengku Zainal Abidin
Dr Prakash Seelan A/L Mutthusamy	Dr Tengku Nordiana Binti Tengku Hamzah
Dr Naeemah Abd Aziz	Dr Ting Mei Sze
Dr Ng Shin Ann	Dr Wan Mohd Hafidz Wan Hisham
Dr Nik Nurfazleen Mohamed Zalami	
Dr Noorul Syakirin Abdul Manap	

## UNIVERSITI KEBANGSAAN MALAYSIA

Dr Afifah Binti Samsudin	Dr Nor Syafawati Osnamila Binti Abdullah
Dr Ahmad Shafie Bin Jameran	Dr Noraishah Binti Masabbirali
Dr Asmah Binti Azizah	Dr Nornafiza Mian
Dr Hetty Ayuni Binti Sulaiman	Dr Nur Fazlina Binti Harun
Dr Chan Weng Ken	Dr Nurul Akasya Binti Adnan
Dr Terrence Cheng Yen Wee	Dr Nurul Erida Binti Ismail
Dr Chiew Yee Soon	Dr Nurul Izza Binti Mawardi
Dr Ujdora Goh	Dr Shafiq Ali Bin Jamaledin Surani
Dr Lee Yew Ching	Dr Siti Hajar Haryati Binti Fauzi
Dr Hayatul Akma Binti Bolhan	Dr Siti Zubaidah Binti Mohd Zahari
Dr Lily Hii	Dr Vimal Varma A/L Spor Madiman
Dr Hion Yuen Teng	Dr Soo Sean Li
Dr Hoong Hua Sheng	Dr Tan Hui Yee
Dr Hor Chin Kok	Dr Tan Kok Wang
Dr Khoo Boo Hooi	Dr Tang Ying Qian
Dr Angelina Lim Chia Chia	Dr Vincent Teo Shih Loong
Dr Lim Zhau Hong	Dr Tham Sook Mun
Dr Ling Heng Wei	Dr Wong Li Mei
Dr Matthew Kurien	
Dr Mohd Arif Bin Md Bakri	
Dr Mohd Hafiz Bin Abdullah	
Dr Mustaza Bin Jamaluddin	
Dr Ng Chin Yang	
Dr Nor Farhana Binti Hamzah	

## UNIVERSITY OF MALAYA

Dr Aaron Wilson	Dr Noor Iftitah Ab Rahman
Dr Ahmad Shafwan Bin Abdullah	Dr Nor Izzati Binti Wahab
Dr Ai Sin Ling	Dr Nuraeiniza Binti Ismail
Dr Josephine Chan Chiu Lin	Dr Nurul Najmi Bin Mohammad Nyisak
Dr Cheng Kean Sim	Dr Ong Su Ping
Dr Chin Guan Yeu	Dr Ong Ting Bin
Dr Choo Mei Ann	Dr Ooi Dar Vin
Dr Daniel Chow Ren Kiat	Dr Ooi Kent Yong
Dr Gan Pek Li	Dr Sebastian A/L Sundaraj
Dr Shahmini A/P Ganesh	Dr Sharon Tai Suet Yee
Dr Khaironisa Binti Abu Bakar	Dr Tan Jenq Uei
Dr Imelda Kong Wei	Dr Tan Mei Xuan
Dr Johnny Kiu Toh Sing	Dr Tan Swan Ling
Dr Alvis Lee Tian Yee	Dr Samuel Tsan Ern Hung
Dr Leong Ai Leng	Dr Soo Suet Ker
Dr Lim Li Cheow	Dr Wong Yeow Ken
Dr Lim Xiao Fen	Dr Wong Yieng Ling
Dr Lim Yee Woon	Dr Edwin Yii Sze Sian
Dr Lui Ken-Yi	Dr Yim Shao En
Dr Ng Boon Keat	

## UNIVERSITI PUTRA MALAYSIA

Dr Collins Chong Chi Hun	Dr Nor Hanani Binti Mohd Noah
Dr Lee Jing Xien	Dr Siti Khadijah Binti Keliwon
Dr Muhammad Arif Bin Sudin	



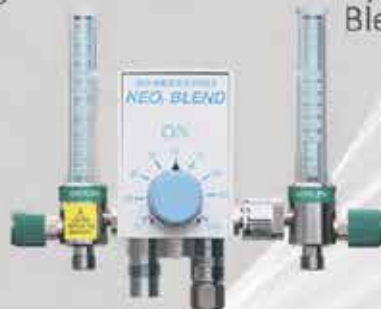
# **Daya Cergas** (M) SDN BHD (183861-K)

HOSPITAL EQUIPMENT, SUPPLIES & SERVICES

We specialise in medical devices for adult and neonate/infant like Respiratory Humidifiers, Breathing Circuits & Connectors, Neopuff (T-Piece) Resuscitator, Bubble CPAP System, Nasal High Flow System, Humidification Chambers, Mask & Interfaces, Infant Ventilators (Conventional & High Frequency), Air/Oxygen Blenders and Flowmeters, Oxygen Therapy Set, and Nebulizers.



Neonate/Infant Ventilators



Air/Oxygen Blenders



Bubble CPAP System



Nasal High Flow (AIRVO2)



Nebulizer System

Authorised distributor of:

**Fisher & Paykel**  
HEALTHCARE

**SLE**

**Aerogen**

**BIO-MED**  
DEVICES

[www.dayacergas.com.my](http://www.dayacergas.com.my)

**Johor Bahru (HQ):**

No. 35, Jalan Setia Tropika 1/8,  
Taman Setia Tropika,  
81200 Johor Bahru, Johor.

Tel: 07-239 6307, 239 6308 Fax: 07-239 6309

**Kuala Lumpur:**

E-8-6, Block E, Megan Avenue 1,  
No. 189, Jalan Tun Razak,  
50400 Kuala Lumpur.

Tel: 03-2333 8980 Fax: 03-2333 8899



*continued from back page*

7. In Support of Private-Public Partnership - 20<sup>th</sup> January 2021
8. HCP Welfare is Our Welfare - 23<sup>rd</sup> January 2021
9. Prepare for Vaccine Rollout - 28<sup>th</sup> January 2021
10. Continuously Improve the System, Not Find Fault - 4<sup>th</sup> February 2021
11. World Cancer Day 2021: Empower Communities for Cancer Prevention - 4<sup>th</sup> February 2021
12. Ensure Health and Safety in Celebration - 8<sup>th</sup> February 2021
13. Ground SOPs in Science - 10<sup>th</sup> February 2021
14. No Double Standards for SOPs - 9<sup>th</sup> February 2021
15. Vaccines for All - 15<sup>th</sup> February 2021
16. Support an Inclusive COVID-19 Immunisation Plan (AMM) - 3<sup>rd</sup> March 2021
17. The Vaccination Plan Needs Everyone - 11<sup>th</sup> March 2021

What's in the horizon? You may ask. We look forward to present our first virtual Annual Scientific Congress (ASC) on 6<sup>th</sup> to 8<sup>th</sup> August 2021. Behind the scenes, we work tirelessly to ensure that we have, before you, a showcase of the best scientific content, speakers and latest of medical equipment. For now I passionately implore your support by marking this date on your calendar and ensuring your presence for the ASC to make it a resounding success.

Our SIGs have an array of webinars lined up in the coming weeks and months. The Neuroanaesthesia SIG has promised

a busy schedule ahead with educational webinars in collaboration with world renowned speakers. Kudos to all SIG convenors for they have enriched many with a flurry of activities till date.

The long awaited vaccine is at our shores, and the inoculation process is already en route. A hearty congratulation is in order to the Ministry of Health for the effort and the stalwartness as they undertake the largest vaccination drive this country witnesses.

I end on a positive note. The CoA is as bustling as ever, always seeking ways to reach out in relevance to our profession and fraternity. The past year has showcased our worth, may the years ahead continue to shine light on us all. Stay safe in the interim and I am hopeful that all our members are recipients of the COVID-19 vaccine. May we start our journey back to near normalcy.

I wish to take this opportunity to thank all of you for your continuous support and to the rest of the dedicated CoA council members. A special mention to Datin Dr Vanitha Sivanaser and the secretariat led by the forever vibrant Miss Y M Kong.

Best wishes, stay safe.

Thank you.



## Malaysian Society of Anaesthesiologists & College of Anaesthesiologists, AMM

ANNUAL SCIENTIFIC CONGRESS 2021 (VIRTUAL)

***MyAnaesthesia 2021: Dawn of a New Era***

6<sup>th</sup> - 8<sup>th</sup> August 2021

[www.msa.asm.org.my](http://www.msa.asm.org.my)



# Message from the President of the College of Anaesthesiologists, AMM

## *Dato Dr Hj Zahidah Hj Hassan*



Dear Colleagues and Friends,

The fatigue and impression of this long and arduous pandemic will be etched for a lifetime in our memories as frontliners. It has been a tough long year since our fraternity was thrust forward at the forefront in the battle of

the COVID-19 pandemic, to care for the most severely infected patients.

The formidable adversary is far from vanquished. The past year has progressed with uncertainty. What remains constant is our quest to try and keep trying, our adaptability to manoeuvre uncertain terrains and our ability to take stock of a situation and formulate contingency strategies with steadfast pace.

A year ago, alongside with you, loyal members of the College of Anaesthesiologists (CoA), we began this journey with uncertainty. However, today, I am filled with renewed confidence. As we reflect in contemplation, the CoA has risen to heights of epic proportions as we navigated the many challenges faced by our fraternity and members. It is beyond the scope of this report to summarise all that have been undertaken in completion thus far. I therefore urge members to view our web page to gauge the barometer to our contribution and its successful implementation.

We, as a team, moved swiftly and comfortably to incorporate usage of the nouveau communicative tools by mastering the web cast platform. In no time, we managed to accomplish a sizable number of webinars to acquaint our members with the latest in guidelines, developmental protocols and special interest topics.

The following are the activities organised by the CoA since the month of November 2020

### **Webinars**

- 1) Webinar co-organised with MSA
  - Session 3: Pain Special Interest Group (28<sup>th</sup> November 2020)
  - Obstetric Anaesthesia (10<sup>th</sup> December 2020)
  - Ultrasound Special Interest Group Webinar Series (23<sup>rd</sup> January 2021)
  - Paediatric Anaesthesia Update (20<sup>th</sup> March 2021)

- 2) Involvement in a Webinar debate also via Facebook, with MSA (7<sup>th</sup> February 2021)
  - To COVID or Not to COVID - That is the Question
- 3) Future Webinars under Neuroanaesthesia SIG
  - Neurovascular Anaesthesia (24<sup>th</sup> April 2021)
  - Paediatric Neuroanaesthesia (June 2021)
  - Perioperative Neuroprotection (October 2021)

### **Anaesthesiology Updates Under Neuroanaesthesia SIG**

In collaboration with the University of Washington, Seattle, USA). The first in the series will be held on 28<sup>th</sup> March 2021 and another four will be held in May, July, September and November 2021.

### **Peri-Operative Airway Management Workshop under Airway SIG (19<sup>th</sup> to 20<sup>th</sup> February 2021)**

One hundred and fifty participants registered for the workshop and most of them were glued to the sessions. There were two international speakers, Professor Dr Orlando Hung, Dalhousie University II Science Centre, Halifax, Canada and Dr Deborah Khoo Xian Li, National University Hospital, Singapore, and seven local speakers and one moderator. The workshop has been accredited with 16 CPD points.

As a College of the Academy of Medicine of Malaysia, the CoA has the privilege to continue to endorse the many press statements released by the astute Academy as well as joint statements with the Malaysian Health Coalition. Up to the last Berita, we had endorsed up to 10 press statements released by the Academy as well as 26 joint statements with the Malaysian Health Coalition (MHC). Since then, we have endorsed an additional 12 joint statements with MHC and 5 press statements with the Academy, as follows:

1. Budget 2021: Time to Over-Invest in Health - 2<sup>nd</sup> November 2020
2. The Health Budget 2021 is Not Enough - 9<sup>th</sup> November 2020
3. Choose a Transparent Middle Path Over CMCO - 10<sup>th</sup> November 2020
4. Four Pandemic Lessons for 2021 - 30<sup>th</sup> December 2021
5. Deploy Sustainable, Long-term COVID-19 Strategy - 8<sup>th</sup> January 2021
6. With Great Power Comes Great Responsibility - 13<sup>th</sup> January 2021

*continued on page 55*