By Clinical Research Malaysia

CRM bulletin

of Clinical Research and Therapy

ISSUE 14

FAMILY MEDICINE AT THE FOREFRONT

RESEARCH PERSONALITY

Dr. Sri Wahyu Taher

SPECIAL COVERAGE

MoU Signing with Hematogenix & Novotech

FEATURED SITE

Hospital Sultan Ismail, Johor Bahru

MAKING SENSE OF THE STATISTICS

2017 ISR Statistics

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This issue is the first for 2018. Significant events at CRM have kept us busy over the last few months. We have continued to form several new partnerships with various global organizations and among them are the First Affiliated Hospital of Zhejiang University School of Medicine in China; intellim Corporation in Japan; Hematogenix Laboratory Services in the United States as well as with Novotech Clinical Research in Malaysia. This year, we have also successfully conducted a clinical research training programme with our Korean counterpart, C&R Research Inc., which is one of the many trainings that CRM have in our pipeline.

In April, IQVIA presented the Global Site Recognition Award 2017 Certificate of Achievement to the CRC-CRM Network for our top-performing sites that have demonstrated excellence in clinical research performance and quality. On a separate note, several of our sites have also received recognition from sponsors for achieving excellent recruitment numbers. Hospital Miri became the second top recruiter globally for a respiratory study while Hospital Kuala Lumpur was among the top two recruiters for a cancer registry study in Asia. I am very proud of this achievement, proving we can do it!

FROM THE CEO's DESK

We are on track to obtain the ISO 9001:2015 accreditation. This ensures consistent standard quality of clinical trial conduct at all sites in Malaysia. The various departments within CRM have been working very hard towards this goal and we hope to achieve and obtain this certification by early next year.

The Phase 1 Realization Project has also made significant progress particularly in developing and exposing our investigators to early phase clinical trials. Dr. Voon Pei Jye, an oncologist from Sarawak General Hospital, was successfully accepted by the Princess Margaret Cancer Centre for the Phase I Drug Development Fellowship Programme. I am proud to say that Dr. Voon is the first Malaysian to embark on this programme in this world-renowned phase 1 facility based in Toronto. Discussions have also taken place with the National University Health System of Singapore for cross border collaborations in translational, pre-clinical, phases I-IV and trainings in clinical research.

We are optimistic that the year 2018 will see a positive growth in the development and advancement of clinical research in Malaysia. Do read more about the rest of our initiatives, news, research personality and clinical research articles in this issue of the bulletin.

Congratulations

YAB TUN DR MAHATHIR MOHAMAD

THE 7TH PRIME MINISTER OF MALAYSIA

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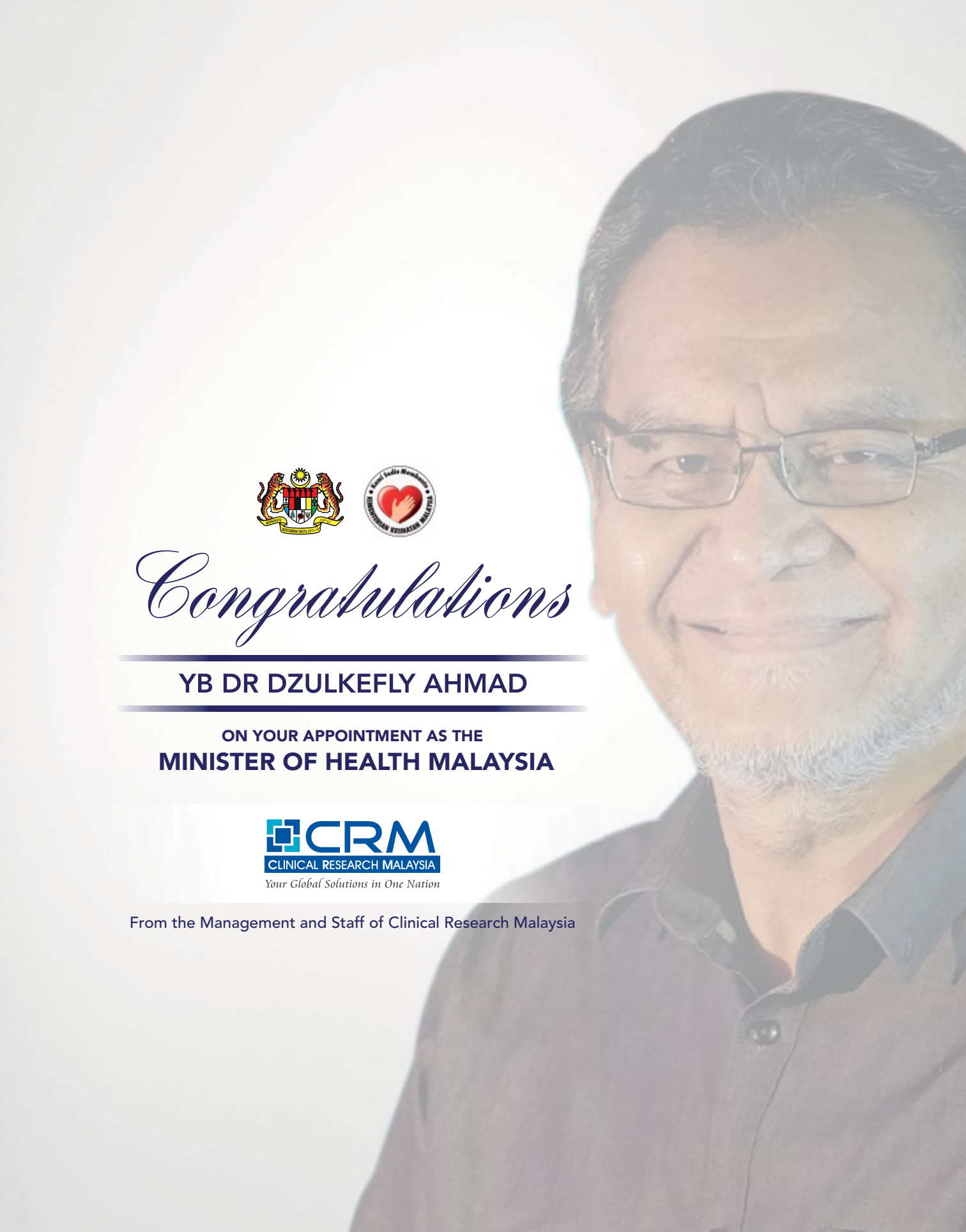

Congratulations

YB DR DZULKEFLY AHMAD

ON YOUR APPOINTMENT AS THE

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Sharing of Ideas to Improve Clinical Research in the Country

KUALA LUMPUR, 2 April 2018 – The recent CRM Industry Dialogue set a good start for the year by gathering the stakeholders and industry players under one roof. This year's Dialogue saw speakers from the National Pharmaceutical Regulatory Agency (NPRA) and the Medical Research and Ethics Committee (MREC). During the session, the industry players discuss on the challenges in the conduct of clinical trials in Malaysia and went on to suggest ways to address the challenges together.

CRC-CRM Network Received IQVIA Global Site Recognition Award, 2017 Certificate of Achievement

PETALING JAYA, 12 April 2018 – IQVIA presented the Global Site Recognition Award, 2017 Certificate of Achievement to the CRC-CRM Network. This award is only given to top-performing sites in IQVIA's Prime and Partner program that have demonstrated excellence in clinical research performance and quality.

NHAM-CRM Research Track 2018

KUALA LUMPUR, 14 April 2018 – CRM collaborated with the National Heart Association of Malaysia (NHAM) and the Malaysian Society of Pharmacology and Physiology in organizing the 2nd NHAM-CRM Research Track. The objective of the Research Track is to bridge the gap between researchers and clinicians in the field of cardiology. Local and international speakers were also invited to share the latest development in cardiology. A total of 105 participants, 40 abstracts, 25 posters and 6 speakers contributed to the success of this track. The NHAM-CRM Research Track was launched by Datuk Dr. Shahnaz Murad, the Deputy Director General of Health (Research & Technical Support).

CRM's pilot training programme together with C&R Research Inc. (Korea)

SELANGOR, 16 April – The Fundamental of Clinical Research & Practice, is a CRM pilot training programme organized together with C&R Research Inc. (South Korea's largest contract research organization). The 3-days training programme was packed with talks on all-you-need-to-know about conducting clinical trials. Twenty-three participants attended the training programme. Among the topics covered in this programme include an overview of drug development, trial phases, principles of good clinical practice and a brief discussion on the roles and responsibilities of the various players in clinical research.

Hospital Miri 2nd Top Recruiter Globally for Respiratory Study

Hospital Miri, Sarawak became the second top recruiter globally for a respiratory study recently. The study team was lead by Principle Investigator, Dr. Desmond Samuel and supported by two of CRM's study coordinators, Salina Lisang and Wan Ainor. We hope for more great success stories from the site. Thank you for making Malaysia proud!

JAMA Neurology Publishes Study by Malaysian Investigators

Dr. Irene Looi (Hospital Seberang Jaya) and Prof Yuen Kah Hay (University Sains Malaysia) has jointly conducted a Venus study on Vitamin E and diabetic neuropathy that was successfully published in the prestigious JAMA Neurology which has an impact factor of 10.


This Issue Views 768 | Citations 0 | Altmetric 17

Original Investigation

April 2018

Efficacy of Oral Mixed Tocotrienols in Diabetic Peripheral Neuropathy

A Randomized Clinical Trial

The Vitamin E in Neuroprotection Study (VENUS) Investigators

JAMA Neurol. 2018;75(4):444-452. doi:10.1001/jamaneurol.2017.4609

More

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New! JAMA Network Open is now accepting submissions. Learn more.

You May Also Like

Opinion

Understanding Small Fiber Neuropathy: The Long and Short of It

Hospital Sibu Achieves Global Firsts in VICTOR Study

SIBU, 25 January 2018 – Hospital Sibu's research team for the VICTOR Study under the lead of Dr. Chieng Chae Hee was acknowledge by its sponsor for successfully randomizing its first subject. Malaysia was not only the first country to have activated the VICTOR Study, but was also the first country globally to have all sites up and running.

Clinical Research Malaysia Sets New Partnership in Japan

TOKYO, 23 March 2018 – Intellim Corporation and Clinical Research Malaysia (CRM) have signed a Memorandum of Understanding (MoU) to establish a new strategic partnership between both companies in clinical research. The inking of this MoU spells out support on clinical research activities in both Malaysia and Japan, as well as in business development and networking opportunities for both organizations.

The MoU is signed between CEO of CRM, Dr. Akhmal Yusof and President and CEO of intellim Corporation, Mr. Masakuni Ukita, and witnessed by the Ambassador of Malaysia to Japan, His Excellency Dato' Ahmad Izlan Idris.

MEMORANDUM OF UNDERSTANDING
SIGNING CEREMONY BETWEEN

NOVOTECH
The Asia Pacific CRO

CRM
CLINICAL RESEARCH MALAYSIA
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HematoGenix
Laboratory Services

PUTRAJAYA, 20 April 2018 – Hematogenix, a global leader in integrated laboratory services, and Novotech, Australia's largest independent contract research organization (CRO) have both signed a Memorandum of Understanding with Clinical Research Malaysia (CRM) to establish strategic partnerships in clinical research.

The inking of this MoU with Hematogenix will have the potential to set Malaysia apart from its Asia counterparts as Hematogenix intends to invest in setting up its central laboratory services (that focuses on cancer related research and clinical trials) in this country. Hematogenix is only one of a handful of providers of such services in the USA and a leader in immune-oncology testing for drug development. The establishment of their central laboratory services will be the first of such kind in the Asia region and is anticipated to be the largest globally in due time, surpassing the one in Chicago. Through its Asia operations, Malaysia can expect to attract more global clinical trials into the country, upscale the Malaysian medical talents and bring in more investments into the nation's economy.

Novotech is strongly focused on Asia-Pacific which is regarded as one of the most attractive regions for clinical trials. The government's commitment along with CRM's continuous efforts to develop the Malaysian clinical research industry contribute to increase Malaysia's attractiveness as a clinical trial destination.

Dr. Yooni Kim
Executive Director of Asia Operations, Novotech

The MoU with Novotech formally consolidates their existing working relationship with CRM. This MoU spells out support in the areas of clinical trial promotion, business development, networking opportunities, clinical trial operations, training as well as in feasibility assessments. With the current Malaysian Economic Transformation Program (ETP) that targets clinical research as one of its main drivers of economic growth, Malaysia has accelerated its efforts to reach out to foreign players in the clinical research field through CRM. Commenting on the MoU, Novotech Executive Director for Asia Operations Dr. Yooni Kim said, "Novotech is strongly focused on Asia-Pacific which is regarded as one of the most attractive regions for clinical trials. The government's commitment along with CRM's continuous efforts to develop the Malaysian clinical research industry contribute to increase Malaysia's attractiveness as a clinical trial destination."

The MoU was signed by the CEO of CRM, Dr. Akhmal Yusof, President and CEO of Hematogenix, Dr. Hytham Al-Masri and Executive Director of Asia Operations, Novotech Dr. Yooni Kim. The signing of the MoU was witnessed by the Director General of Health, Datuk Dr. Noor Hisham Abdullah. "The Ministry of Health remains committed in building a thriving clinical research ecosystem in the country to support the needs of medical professionals, industry players as well as clinical trial sites, and we look forward to a fruitful and mutually beneficial partnership that will open up new exciting areas for cooperation in clinical research." said Datuk Dr. Noor Hisham.

About Hematogenix

Hematogenix Laboratory Services is a global CAP accredited and CLIA certified GCP-compliant cancer research and biotechnology company with locations in USA, Europe and soon Malaysia. Their medical laboratories focus on research and development of cancer related assays and work very closely, collaborate and provide consultation, guidance and testing services to global Pharma companies in Clinical Trials. The company offers a comprehensive array of biomarker development and testing services designed to navigate the complexities of human subject and advance our understanding of the molecular basis of cancer. Hematogenix delivers comprehensive services from Bio-Banking to Companion Diagnostics and clinical trial services as well as provides logistic management of tissue, distributes collection kits, and contributes to standards and procedures required for initiating clinical trials. Powered by a state-of-the-art laboratory information system, Hematogenix facilities and practices comply with a rigorous chain of custody and specimen management practices. Services include Flow Cytometry, Companion Diagnostics Development, Assay Development, IHC, FISH, ISH, Next Generation Sequencing (NGS), Real-Time PCR, PCR, mRNA ISH, and Cytogenetics.

About Novotech

Established in 1996, Novotech is Australia's largest independent contract research organization (CRO). Headquartered in Australia and focused exclusively on the Asia Pacific, Novotech is internationally recognized as a leading regional full-service CRO. With the increasing pace of globalization in drug development, Novotech's expertise in the vibrant and fast growing Asian region has been instrumental in the success of hundreds of phase I-IV clinical trials from Australia to India. Novotech has its operations in Australia, New Zealand, China, HongKong, India, Malaysia, thePhilippines, Singapore, South Korea, Taiwan and Thailand.

Dr Sri Wahyu Taher

Consultant Family Medicine Specialist
Head of Klinik Kesihatan Simpang Kuala
Head of Clinical Research Centre (CRC) Unit Klinik Kesihatan Simpang Kuala
Gred Khas C

Dr Sri Wahyu Taher is currently the Consultant Family Medicine Specialist and Head of Clinic, Klinik Kesihatan (KK) Simpang Kuala Alor Setar, Kedah. She is also the Head of CRC Unit KK Simpang Kuala which is one of the research unit in primary care clinic in the state of Kedah.

Dr Sri Wahyu Taher attained her BSc Medical Science from St. Andrews University Scotland in 1988. She proceeded with MBChB from Glasgow University Scotland in 1991. She returned to Malaysia in 1993 to work in Hospital Alor Setar and obtained her Masters in Family Medicine UKM in the year 2000. She had 2 years of experience working in Scotland. She then continued with subspecialty training in Non-Communicable Disease Management Primary Care from Monash University Victoria Australia in 2006. The fellowship training was an eye opener and upon returning to Malaysia in 2007 she started to get involved with ISR in 2008.

She holds many important posts and responsibilities in the Ministry of Health Malaysia and with her long history of service she has received numerous awards for excellence of service.

She is currently the Vice President of Family Medicine Specialists Association Malaysia and Chairman for Hospice Kedah Association, with a passion in palliative care.

Dr Sri Wahyu Taher is Principal Investigator for 11 ISRs and Co-Investigator of a few. Other than ISR she is active in Investigator Initiated Research (IIR) in collaboration with public and private universities. To date, she has had 26 publications. Many of the multi centre ISRs have been made published by sponsors and various authorities.

What first sparked your interest in clinical research?

I started taking up observational research in 2008 after I came back from my fellowship training. During the training I realized research is a very important element in order to develop the fraternity. The people whom I worked with in Monash were always doing research and it was part of their work culture. By doing research, we make known of our work and effort in specific disciplines and when it gets published, other's would learn from it to improve their outcome. This chain of knowledge transfer and continuity of care has made research a unique entity of medical advancement. The awareness on how important it is to do research has made me determined to start conductnig research in primary care clinic. I am very fortunate because family medicine has a wide scope of speciality and I can do almost any research of interest pertaining to primary care. Thus I have been involved in research on diabetes mellitus, hypertension, antenatal care and perinatal infant outcome, Ramadan fasting, bronchial asthma, vaccine and others.

When I started in 2008, there were no medical officers who were GCP trained and I started doing research from scratch. So I had to do the research all by myself. Gradually medical officers and nurses were sent for GCP training and we formed a research team. However in view of the lack in staffing, the nurse study coordinator later on was not able to help the team in conducting ISR. But we continued with whatever limited capacity accessible to us. Fortunately in 2017, CRM has decided to post a study coordinator on regular basis to help me with ISR at CRC KK Simpang Kuala.

How has a clinical trial change your practice and management of patient care?

Research has trained me to be meticulous, strong in principles, abiding to the protocols rules and regulations. It makes me a responsible person especially when it comes to patient care. I am kept abreast with new technology, treatment management and global updates. It gives me the sense of belonging and in touch with other people in different countries involved in the same trial. Clinical trials made me realized the importance of accurate and complete documentation thus I have been practicing good record keeping in patients' care. At the same time, I have trained my subordinates to practice good documentation.

Why should doctors, particularly those in Health Clinics participate in clinical trials?

It is pertinent for doctors especially in primary care to do research. Research takes us through a set of principles and protocols that is unique to the trials. It is bounded by rules and regulations that are applicable to international standard settings and GCP compliance. Thus by doing research, doctors learn how to conduct proper research on patients according to the protocol. They are given opportunity to use drugs or devices that are not yet in the market. Patients are given opportunity to use the new technology which are sometimes unaffordable and inaccessible to them. Doctors learn of a new drug or device characteristics which then make them better and informed clinicians.

Doctors in primary care clinics see hundreds of patients every day and the number is escalating each day. They see a variety of cases presenting at the community they serve. Clinical trials in primary care represent the true disease burden and based on the conclusions derived from the trials, a lot can be done to change the disease pattern and risk factors.

Involvement of primary care doctors in clinical trials will definitely help to answer some questions pertaining to primary care management and hopefully enable to halt disease progression and its complication.

In addition to the above, doctors learn study design, appropriate statistical analysis and how to interpret results. This exposure will enrich the doctors and will help them to make decisions on the best treatment for the patients and not get swayed with promotional advocacies by pharmaceutical companies.

Recruitment and retention of patients in clinical trials are known to be one of the most challenging aspects for investigators. How do you ensure successful recruitment and retention of patients in your trial?

I am privilege to be practicing in primary care clinic where rapport is an essential aspect of care. Patients have been coming to the clinic for quite a number of years and becoming very familiar with the system, surrounding and the medical staffs. It allows us to communicate with patients better and clinical trials strengthens the relationship because patients feel they are given priority and privilege. With good rapport and communication skills, patients have a sense of belonging to the clinic and relate to the clinical trial team issues pertaining to trials and others. They always know who to turn to relay their problems that can be a potential barrier to trials. At primary care clinics we treat the patients with utmost respect and priority and patients feel they are very important by all levels of health care professionals.

In your opinion, how has clinical research in Health Clinics evolved over the past decade?

Before I started in year 2004, clinical trials in primary care clinics were almost impossible. I must have been one of the first to conduct clinical trials at primary care clinics. At that time clinical research organizations and sponsors were not convinced primary care clinics can conduct trials. When I received my GCP certification in 2004, a CRA approached me and I accepted the responsibility. Although it was a simple observational study, it was a starting point for me that have set a strong foundation for future trials. Subsequently I have been invited to be involved in many other clinical trials. To date I have conducted 11 ISR and 4 IIR.

Year 2013 was the year where there was a huge paradigm shift among the family medicine specialists (FMS) in Malaysia. The interest and awareness in building up primary care clinics into clinical research sites grew rapidly among family medicine specialists. Thus many of them took up GCP training and made changes to their clinics in preparation for upcoming clinical research.

The recognition of how pertinent it is to do clinical research in primary care clinics have made the family medicine fraternity grow into a unique and diverse fraternity over the years. The development was made possible with the support of Clinical Research Centre Ministry of Health Malaysia and Clinical Research Malaysia (CRM). CRC MOH and CRM have supported family medicine specialists in terms of training and infrastructure, thus facilitating development of clinical research sites in many parts of Malaysia.

My involvement in clinical research have encouraged many other family medicine specialists to actively start conducting research and to change the mind set of others who thinks that clinical research is not feasible in primary care. I have proven to others that clinical research in primary care clinics are possible and cost effective. Now, many primary care clinics are equipped with reasonable infrastructure suitable for clinical research and many family medicine specialists are doing clinical research of various topics and scopes.

This development is in tandem with the aspiration of our Director General of Health who wants to put Malaysia at par with other developed countries in clinical research, if not the best in South East Asia.

What one word best describes your career as a clinical researcher / investigator? Why?

It is simply **empowering**.

By doing research, I learn to become a person with strong principles and I have brought these principles down to my subordinates in order to improve service. For example, in research, clear documentation is essential and thus I have instilled this principle onto my subordinates to enable them to uplift the quality in patient care.

Research has also empowered me to diagnose accurately and have set a high standard of care for myself when treating patients. I do not simply brush off a complaint by my patient in research setting for I need to report all adverse events to the sponsors and ethics committee. Thus in clinical setting, I have learnt to be meticulous in caring for my patient and I listen to them attentively.

By taking up research I learn to become a competent leader, leading my team into the correct direction, motivating them all the time, training and guiding the team members when it is needed. By doing so, I have then empowered my team members to become independent individuals working in a team with a common and focused objective.

Where do you see yourself in the next 5 years in the clinical research industry?

I will want to continue to do clinical research in the next 5 years expanding from phase 3 and 4 to phase 2 and perhaps given the opportunity phase 1 clinical trials. In addition to this, I would like to expand my scope of research to more wider scopes (eg. vaccine, adolescents, dermatology and elderly care) and for more clinical research collaboration with universities and other agencies.

Other than focusing in doing clinical research alone, I would like to expand my expertise into clinical research training thus making CRC KK Simpang Kuala a centre of research training in primary care. However this can only be achieved if I have a dedicated research team and I hope this vision can materialize in the very near future.

Of course I would like to see clinical research centre KK Simpang Kuala expand in its size and function to a more diverse unit, improved facilities and increased in staffing. I aspire CRC KK Simpang Kuala to become the centre of clinical research excellence in primary care in Malaysia if not in the northern region of Malaysia.

What changes would you like to see being made by the policy makers to create a more conducive ecosystem for the conduct of clinical trials in Malaysia?

There are many things the policy makers can do to achieve a conducive ecosystem for the conduct of clinical trials in Malaysia. For sure we need a lot of support from various policy makers and stakeholders. Firstly primary care clinics must form a clinical research centre or at least conduct trials without being halted by their superior and this should be made a directive from the higher level of authority.

Currently there is a lot of hindrance to clinical trials being conducted in primary care clinics simply because there is not enough staffing to support the trial. Thus policy makers need to allocate posts at health clinics in order to form a dedicated team to conduct clinical trials. Posts must be for all levels of health care professionals.

Financial support is essential and it has to be made adequate for infrastructure, equipment and other facilities rendered vital for clinical research. There should also be enough support from policy makers for ongoing training and upgrading of clinical trial site.

Policy makers must allow collaborative work in clinical trials between primary care clinics and other agencies example hospitals, private agencies, private hospitals, universities and others.

For early exposure to clinical trials, the university academician must start exposing the students early by incorporating clinical research into the curriculum. This can be implemented at undergraduate or postgraduate level.

CROs are given more opportunity to conduct trials in Malaysia. Policy makers must take steps to make Malaysia more attractive for clinical trials.

Finally, CRM can support clinical trials in primary care as an advocacy to enhance the collaboration with various policy makers.

2017 ISR STATISTICS

Types of Clinical Trials

Interventional trials accounted for the largest proportion of trials in Malaysia in 2017, with Phase III trials recording the highest number of trials followed by bioequivalence studies, phase II, phase IV, phase I and pre-clinical studies (Figure 1).

Out of all interventional trials, 72 trials or 49.7% involved new investigational products, 51 (35%) were bioequivalence studies and 18 (12%) were medical device trials. New investigational products are generally comprised of drugs, biologics, biosimilars or supplements (Figure 2).

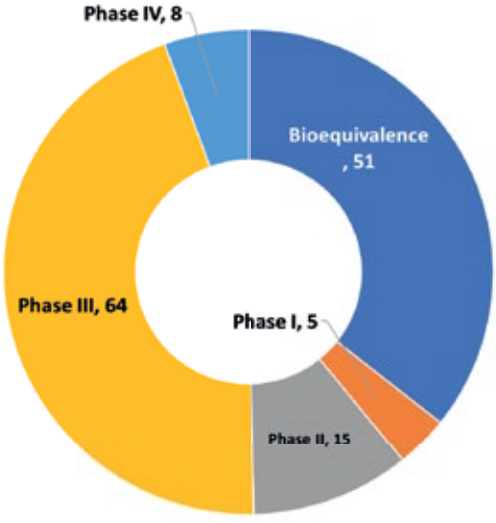


Figure 1. Breakdown of Interventional studies according to phases (n=144)

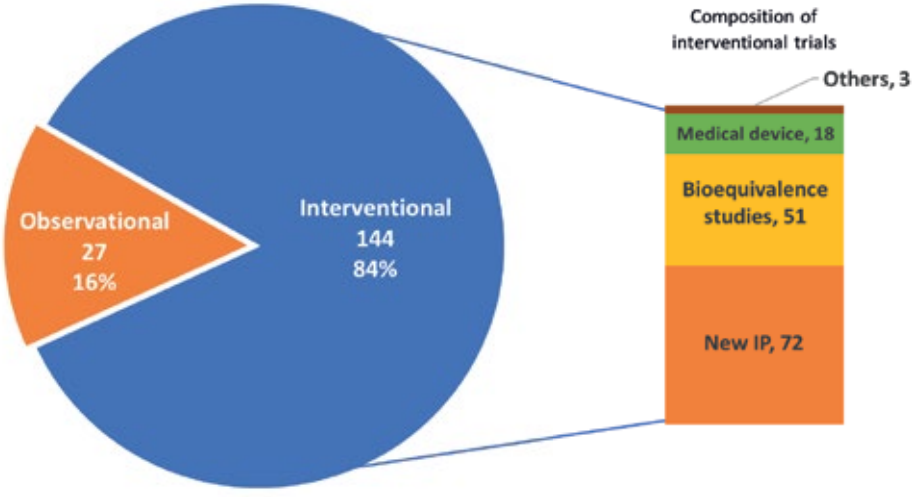


Figure 2. Classifications of clinical trials conducted in Malaysia in 2017

2017 ISR STATISTICS

Disease patterns in Malaysia are almost similar to those in developed countries. Malaysian patients have similar unmet medical needs that these countries have. Cardiovascular disease and cancer are the major cause of mortality and morbidity in Malaysia. The high incidence of these non-communicable diseases provides a large patient pool for clinical trials in these therapeutic areas.

In 2017, cardiovascular trials accounted for the highest number of trials followed by oncology trials (Figure 3), a pattern which is similarly seen in the previous years. However, endocrinology trials have taken a dip and recorded only 1 trial in 2017 as compared to 10 trials in 2016. Gastroenterology/hepatology trials which recorded the third highest number of trials in 2017 had 15 trials compared to only 6 the year before.

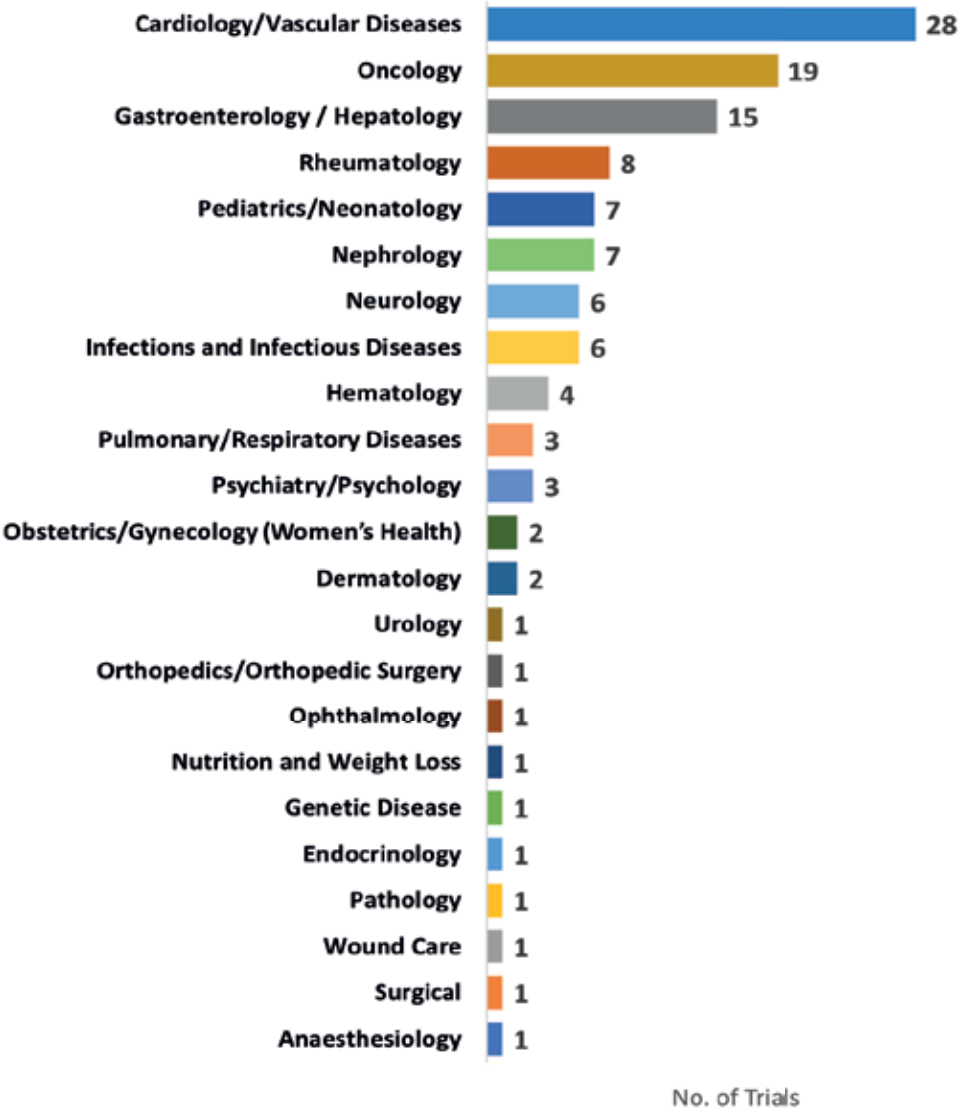


Figure 3. The therapeutic areas of clinical trials conducted in Malaysia

Hospital Sultan Ismail Johor Bahru (HSIJB) began fully operational in May 2006 and was the second hospital in Malaysia that has started using the electronic system Total Hospital Information System (THIS). It currently has 18 specialists services with 21 subspecialties. HSIJB is a tertiary specialist hospital that is the main oncology centre in the southern region of Malaysia. Besides having a paediatric palliative care centre, it also has its own Clinical Research Centre (CRC) that supports both Industry Sponsored Research (ISR) as well as Investigator Initiated Research (IIR).

POPULATION SERVED IN 2017

12,718
BIRTH

240,685
Visits to Specialist Clinic

110,349
Cases in Emergency Department

HOSPITAL FACILITY

704
BEDS

22
Admission Wards

18
Operating Theatres

SPECIALTY

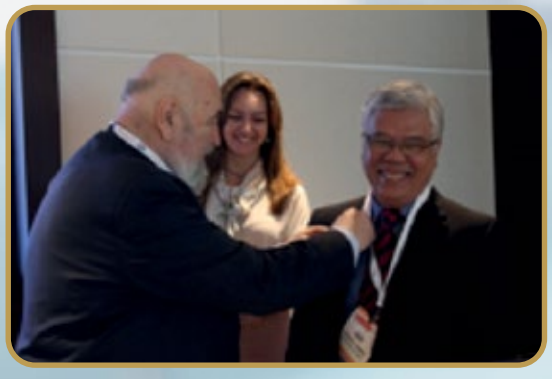
MAIN SPECIALTY

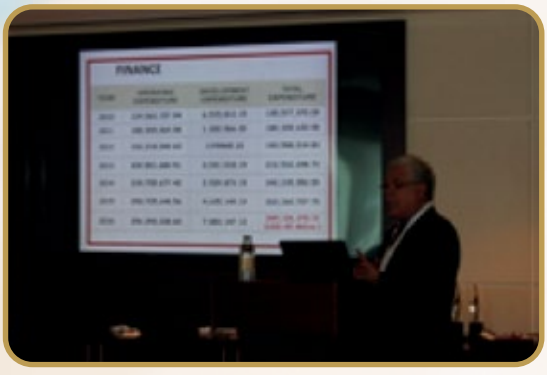
- Internal Medicine
- Dermatology
- Psychiatric
- Nephrology (Visiting)
- General Surgery
- Orthopaedic
- Otorhinolaringology
- Ophtalmology
- Anaestesiology
- Radiotherapy & Oncology
- Emergency and Trauma
- Obstetric & Gynaecology
- Paediatric
- Rehabilitation
- Forensic Medicine
- Diagnostic Imaging
- Pathology
- Dental

SUB-SPECIALTY

- Rheumatology
- Geriatric Medicine
- Psycho Geriatric
- Breast & Endocrine
- Burn
- Orthopaedic Oncology
- Atroplasty
- Orthopaedic Spine
- Orthopaedic Sports
- Otoneurology
- Acute Pain Service
- Intensivist
- Gynae-Oncology
- Paediatric Hemato - Oncology
- Paediatric Renal
- Pediatric Neurology
- Neonatology
- Children Developmental
- Radioneurology

Best Medical Practice Award 2017





Clinical Research Centre (CRC) / Clinical Research Malaysia (CRM)

- Established in October 2012
- It currently has 2 Medical Officers (MO), 5 Research Officers (RO), 1 Medical Assistant (MA) and 2 Study Coordinators (SC)
- The Head of Unit, Dato Dr Ghazali bin Ismail who is a Gynaecologist actively conducts both IIR and ISR. He also motivates his specialist and MOs in conducting research.
- Every year, more than 5 trainings and courses are conducted, and this include Good Clinical Practice (GCP), Introductory Course to Clinical Research (ICCR), Basic Statistics Course, Basic Research Methodology, Introduction and Awareness of NMRR and GCP Refresher Course
- CRM began placing 2 Study Coordinators in November 2015 to facilitate the increasing amount of ISR conducted at HSIJB
- In 2017, CRM provided funds for the construction of a new CRC office in view of the existing CRC that has been fully occupied.
- CRM's study coordinators work closely with the Pharmacy Department for drug reconstitution, IP storage and IP temperature monitoring
- CRC HSIJB conducts Good Clinical Practice Workshop (GCP) in almost every year since 2014. From this course, new potential investigators have been identified every year from different disciplines.

Clinical Trial Facilities

- Freezer -80°C and -20°C, refrigerator 2-8°C, temperature monitoring device, refrigerated centrifuge, ECG, calibrated BP machine, infusion pump, calibrated weighing scale.
- Assessment bed, consultation room, monitoring room and document storage area.




CRM in Photos

George Clinical visit the Ampang Hospital Phase I Unit, 15 January

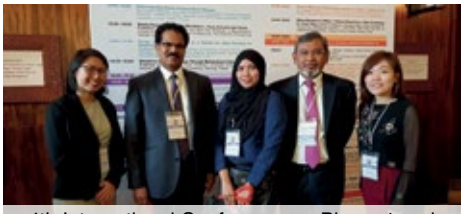
CRM National Conference 2018, 20-23 January

intellim Corporation Visit to Site in Malaysia, 25 January

MoU Signing between The First Affiliated Hospital of Zhejiang University and CRM, 30 January

ACOS 2018, 24 February

CRM Annual Board of Director's Meeting, 26 February



4th International Conference on Phase 1 and Early Phase Clinical Trials (ICPOEP), 1 March

National Hepatitis Symposium III 2018, 1-2 March

CRM-AstraZeneca Masterclass in Oncology 2018, 5 March

Telemedicine Development Group Discussion, 15 March

Working visit to The Christie, 21 March

Courtesy Call with the Ambassador of Malaysia to Japan, 22 March

Evolution Asia Summit 2018, 22 March

Meeting with Japan's Pharmaceuticals and Medical Devices Agency (PMDA), 23 March

Meeting with Taisho Pharmaceutical Co. Ltd, 23 March

MoU between CRM & intellim Corporation, 23 March

I AM AWARE Roadshow in KK Kuala Lumpur, 26 March

I AM AWARE Roadshow in KK Seksyen 7 Shah Alam, 27 March

Bayer's (South East Asia) visit to CRM, 2 April

CRM Industry Dialogue 2018/1, 2 April

I AM AWARE Roadshow in KK Kangar, 9 April

I AM AWARE Roadshow in Hospital Tuanku Fauziah, 10 April

I AM AWARE Roadshow in KK Simpang Kuala, 11 April

Pharmacist Role in Industry Sponsored Research Workshop, 11 April

IQVIA Prime Site JSC Meeting 2018, 12 April

NHAM-CRM Research Track 2018, 14 April

The Fundamental of Clinical Research & Practice Training Programme, 16 April

Facilitation meeting by Disease Control Division of MOH for Hematogenix, 17 April

MoU between CRM - Hematogenix - Novotech, 20 April

Patient Recruitment & Retention Training in HRPB, Ipoh, 25 April

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MALAYSIA SPEARHEADS STEM CELL RESEARCH

Dr Chin Sze Piaw is a clinical and research advisor for Cytopeutics and co-investigator in the Cyto-MSC acute GVHD study

The Ministry of Health (MOH) Ampang Hospital is embarking on a pioneering stem cell research exploring the use of mesenchymal stem cells (MSCs) in acute graft-versus-host-disease (aGVHD). While this innovative treatment has already been approved in several countries, it has so far only been used as salvage therapy after failing steroids and other immunosuppresants, and rarely employed as a front-line therapy. Steroid refractory aGVHD has a dismal prognosis with mortality in excess of 90% and no viable second-line options.1 Working in collaboration with Cytopeutics®, a local company with an impressive track record of basic and clinical trials in stem cell, this Phase I-II double blind randomized clinical trial has been approved by the Medical Research Ethics Committee (MREC) and the National Stem Cell Ethics and Research Sub-committee (NSCERT). More centres are expected to participate in the trial locally and abroad including Singapore and Australia. The success of the treatment will provide a real chance of the patient surviving against the odds as well as put Malaysia on the map in the field of stem cell advances.

Graft-Versus-Host-Disease (GVHD)

Graft-versus-host-disease (GVHD) is said to occur when the cells from the donor, particularly the T-lymphoctyes, attack the host organs following allogeneic hematopoietic stem cell transplantation (HSCT) despite efforts to match the donor and recipient. In GVHD the host tissue is damaged by the myeloablative chemotherapy and release pro-inflammatory cytokines and antigen-presenting cells (APCs) which then trigger donor T-cell activation and proliferation leading to GVHD.[2] [Figure 1]

Acute GVHD normally occurs within 100 days of HSCT and affect mainly the skin, liver and gastrointestinal (GI) tract. Approximately 50% of patients respond to front-line therapy using steroids along with continued calcineurin inhibitors. For those who failed to respond to steroids, there is no viable second-line therapy. Treatments such as azathioprine, mycophenolate mofetil (MMF), sirolimus, extracorporeal photopheresis (ECP), imatinib, methotrexate (MTX), and TNF-alpha inhibitors have all yielded low efficacy.[1,2] Intense immunosuppression may also result in higher risk of cancer relapse.

Mesenchymal Stem Cells (MSCs)

Mesenchymal stem cells (MSCs) have emerged as a therapeutic potential in regenerative medicine, because of their unique properties of tissue repair. MSCs lack major histocompatibility complex (MHC-II) expression which renders them immune-privileged without risk of rejection or reaction in unrelated and unmatched recipients.[3] Hence, MSCs may be obtained from an unrelated donor, cultured, stored and injected into a patient with minimal delay. Because MSCs also possess potent immunoregulatory functions and ability to home in to the sites of injury, there has been increasing interest in the role of MSCs in autoimmune diseases, and inflammatory diseases, and more specifically in allogeneic HSCT, especially in the treatment of GVHD. [4-6]

Mesenchymal stem cells were originally discovered in the bone marrow stroma but have since been demonstrated in many other tissues in the body. Probably the best source of MSC is located in the mucoid connective tissue known as Wharton's jelly in the umbilical cord of the newborn child in whom the MSCs have the longest telomere lengths and share certain embryonic cell-like qualities.[7] Compared to bone marrow-derived and adipose-derived MSCs, UC-MSCs express most of the stem cells/ pluripotent markers at higher level which indicates a higher degree of stemness and self-renewal capacity. UC-MSCs also have short population doubling time during culturing, minimal senescence and no chromosomal abnormalities or expression of tumour oncogenes while still maintaining the differential potential until the late passages. Studies showed that UC-MSCs derived from Wharton's jelly do not transform into tumor-associated fibroblasts in the presence of breast and ovarian cancer cells could inhibit cancer cell growth in vivo and in vitro.[8]

At Cytopeutics, we go further to determine the medical history of three generations including the donor's siblings, donor's parents and grandparents and exclude potential donors with a personal or family pedigree of cancer, infections, genetic and chromosomal disorders, cardiovascular and other familial diseases. The MSCs are also screened for possible genetic mutations and genetic alterations before and after culture.

Immunomodulatory Properties of MSCs

One of the most remarkable and unforeseen aspects of MSCs pertains to their immunomodulatory activity.[4,5] MSCs inhibit T-cell activation and proliferation, including activated CD4+ (helper) and CD8+ (cytotoxic) T-cells which are crucial in in the actication of GVHD and autoimmune diseases. MSCs also inhibit dendritic cell (DC) differentiation, B cell proliferation, natural killer (NK) cell activity and switch the cytokine secretion profiles of these cells, from a pro-inflammatory Th1 profile to an anti-inflammatory Th2 cytokine profile. In addition, MSCs directly secrete a vast array of anti-inflammatory immunomodulatory soluble mediators such as interleukin-10 and prostaglandin E2. [Figure 2].

MSCs for aGVHD

Allogeneic MSCs were first administered by Le Blanc et al. in 2004 to a child with steroid refractory acute GVHD who then showed complete resolution of GVHD.9 Numerous clinical trials have been carried out since then using allogenic MSCs from various sources as a salvage therapy among steroid refractory acute GVHD patients.[6-13] The outcomes of these studies generally demonstrated that MSCs therapy has good tolerability and not associated with long-term risk. More than 50% of the GVHD patients had complete response with no adverse events from the MSC treatment with high 50 to 80% survival rate. In one clinical study comparing UC-MSCs with bone marrow-derived-MSCs, UC-MSCs had superior proliferative potential and more suppressive effects on T-cell proliferation when infused at a mean cell dosage between 4.1 x 106 and 6.17 x 106 cells/kg body weight of patient. Indeed the study showed the manifestations of aGVHD improved dramatically without additional second-line immunosuppressive therapies.[10]

Allogeneic MSC therapy has been approved in Canada and New Zealand as a treatment for steroid-resistant refractory aGVHD in children, for both adults and children in Japan.[14]

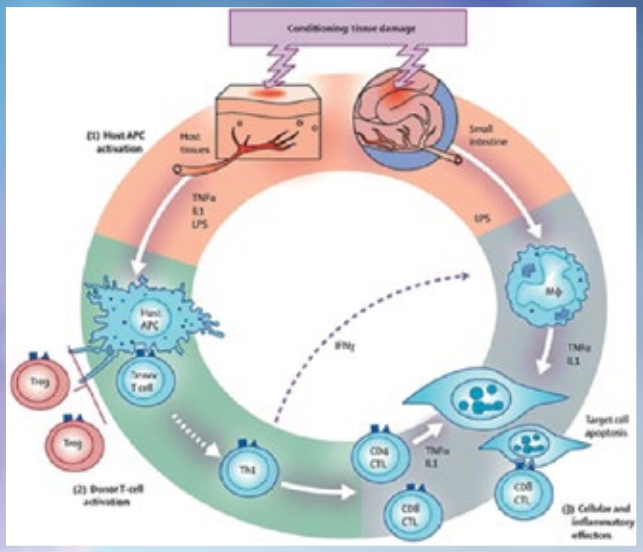

Fig 1

Objectives and Design of the present Cyto-MSC study

So far MSCs have been investigated mostly as salvage treatment for steroid refractory aGVHD after exhausting other immunosuppressive options. Use of UC-MSCs concurrently with steroids as front-line therapy for aGVHD have not been explored. We hypothesise that this strategy will further improve survival and reduce mortality and morbidity, given that treatment response to steroids is slow and far from satisfactory and comes with other complications such as sepsis, including viral reactivation and fungal infection.

This is an investigator-initiated study headed by Dr Tan Sen Mui, senior consultant haematologist at Ampang Hospital. Cytopeutics is a pioneer in stem cell research and treatment. Operating out of Cyberjaya with its contracted GMP-certified laboratory in a purpose-built facility. Cytopeutics is honored to be collaborating with senior doctors, hospitals and universities, both private and public, locally on basic, translational and clinical research in numerous conditions.

To determine the efficacy and safety of allogeneic infusion of Cytopeutics umbilical cord-derived mesenchymal stem cells (Cyto-MSC) in combination of standard corticosteroid therapy as front-line approach for treatment of grade II-IV acute GVHD patients, we designed a randomized-controlled double-blind phase I/II clinical trial involving grade II-IV acute GVHD patients. The subjects are patients who had developed grade II-IV aGVHD following allogeneic HSCT (MRD/ MUD/ Unrelated Cord/ Haploidentical) for malignant or non-malignant haematological disorders. 40 consecutive eligible patients will be recruited in this study. An independent Data Safety Monitoring Board (DSMB) will be appointed among medical experts to monitor and evaluate the patient's safety and progress throughout the study in what is expected to be a Malaysia-led initiative to treat a critical and common condition.

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By Kalpana Devi a/p Balagangatharan,
Associate Regional Manager (Northern B)

HAVE I DONE ENOUGH?

The success or failure of a trial strongly lies in the recruitment achievements. Although clinical trials has been conducted in more than few decades, the recruitment continues to be an immerse challenge for most trials. Investigators enthusiasm for ambitious recruitment targets is often misguided. This is called as "Lasagna Law" where by, investigators overestimate the pool of available patients and at the end of the study fails to deliver the promised target.

Failure in achieving recruitment targets will affect the below:-

Sponsor

a. Jeopardize the quality of a study.
b. Causing study delays and data analysis which eventually delays in marketing the investigational product.
c. Skewed statistical results
d. Decline confidence in investigators
e. Increase in resources use and costs

Investigator

a. Potential loss of revenue
b. Lost in patient confidence
c. Risk of future trial participation with sponsor

We need to understand that each trial is unique and depending on who is being recruited, each trial faces unique challenges and opportunities. Similarly, individual sites for the same study are very different in patient recruitment and retention approaches. Strategies that are used to recruit for the same population may or may not be successful at another site. Thus it is very important that site team especially investigators invest time in planning and executing the strategies.

Investigators are crucial leaders in recruitment. Those sites with successful recruitment rates normally consist of investigators who are active in recruitment and they are the influential people in building the relationship and confidence in patients. When yo u ask most of the patient, they value the time spend with the doctor as they get increased attention and care.

<u>Example of recruitment strategies:</u>

1. Investigators own patient database
   - Need to choose patients who are likely to comply with study visits and medications.
2. Referral from nearby clinics, hospitals and network of colleagues in a society (Ex:)
3. Pamphlets and poster distribution within the hospital, nearby health clinics and private hospitals
4. Media Advertisement – Radio, TV, newspaper or through social media
5. Have promotional campaign/booth to promote on clinical trial and studies
6. Present the study at local/regional/national related therapeutic meetings, CME courses, department meetings
7. Engaging departments such as pharmacy, counselling or dietician depending on trial nature on distributing pamphlets or identifying potential patients from their database

It is important to layout the strategies and discuss with team on the execution of the strategies and the needed resources. Preferably this discussion should be initiated once the site is selected and alert the monitor and sponsor on the required resources. Many meetings/ discussion will only enhance the quality of recruitment strategy. At the end of the day, this will help in site preparation, minimal wasting of time in obtaining the appropriate regulatory approval and it reflects well on the site in terms of commitment and planning. Some of the tools might be a bit resource intensive and some costly. That being said, these are the most effective strategies for most of the trials.

Even though the recruitment layout might look promising in achieving the targets, it is good to anticipate problems and quickly recognize when a recruitment strategy fails or target goals are behind the schedule. Discussion within the team and monitor or sponsor will help in ensuring site-specific enrolment barriers are overcome.

Study coordinators plays significant role in patient recruitment and retention as well. They are the key connectors between the subjects and trial. The communication and relationship between the study coordinators and patients is a vital role as well in retaining the patients in the trial. They need to make every attempts in contacting or identifying potential patients and discuss with investigators if need to revise the recruitment strategies.

Let's look at some of the tips that might be useful for both Investigators and Study Coordinators during recruitment and retention:

1. Always explain the pros and cons of their participation in the study. Make them sense the big picture and they are part of it even when the study does not have any intervention approach, convey your beliefs in the potential.
2. Be excited about the study.
3. Highlight the scientific rationale of the study and impact of their participation could have – Convey in a lay friendly language where patient can relate to.
4. Prepare power point slides to present the study to potential patients.
5. Always available if patients want to contact you due to any concern or questions.
6. Have more in person communication – help to build relationship and address any immediate concerns.
7. Create a database of patients who express interest in research participation.
8. Once patient participates in the trial, make compliance and visit reminders.
9. Always keep the patient updated on the progress of the study, their personal health and discussion of their test results taken for the trial – Feedback provided sensitively and quickly.
10. Payment for trial participation "Travel Reimbursement" is given swiftly.
11. Discuss the trials visits – To ensure patients compliance and what to be prepared for during the next visit.
12. Provide educational support that might be helpful for patients or any disease related brochure that might enhance their knowledge on their disease.
13. Be flexible, be timely, and appreciate their time commitment.

The complexity of trial and expectations are constantly challenged at site. We all should take the responsibility of contributing to recruitment strategies, barriers and in achieving the targets. Sharing experience or lessons from a successful recruitment site will inspire and guide other sites and also factoring learning lessons from others' failure might be useful in planning effective tools. Always brainstorm new approaches with the team and revisit these ideas regularly. It is recommended to intercept potential dropout rate when recruiting a population.

PLAN in advance, **ADOPTION** of innovative methods, **COMMITMENT** of team members, **EXECUTION** and **SUSTAIN** quality.

Unraveling the Methodology of Risk Based Monitoring

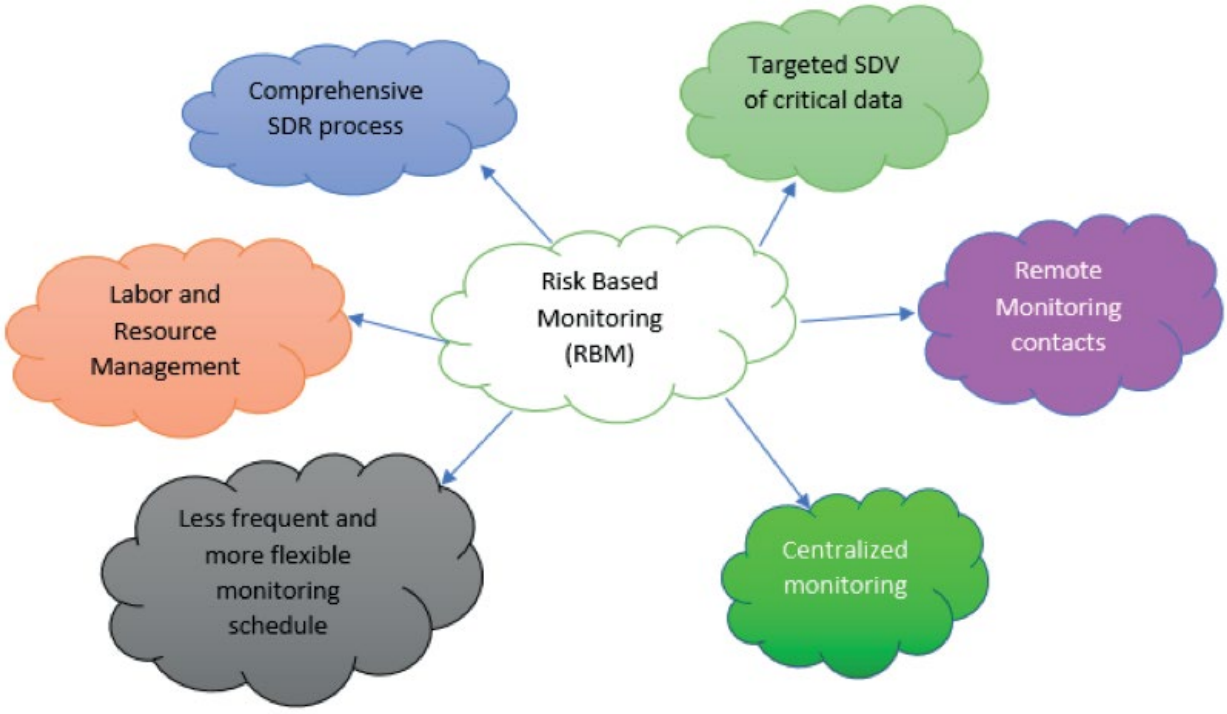
By Jeremy-Marc Morais, Clinical Research Associate 1, PRAHS Strategic Solutions, PRA Health Sciences, Performing Services as Site Manager on behalf of Janssen-Cilag Pty Ltd, Global Clinical Operations

The growth of clinical research is extraordinary and the number of clinical trials being approved to run is increasing rapidly in the world. Therefore, there is an increase in the complexity of newer trials as well as the cost of monitoring them. This increasing complexity leads to clinical sites generating more errors during data collection, thus causing delays in the data-cleaning process. Furthermore, there is a higher chance for deviations to occur and be unnoticed at a clinical site. These deviations may directly affect patient safety and data integrity, and is in violation of Good Clinical Practice (GCP). Considering this development, most pharmaceutical companies (or sponsors) are moving towards a new monitoring approach called the Risk-Based Monitoring (RBM) model. For RBM to be defined, a comparative analysis needs to be made between RBM and the traditional monitoring model.

One of the benefits of RBM is better resource management. This includes both costs and labor. Traditional monitoring involves 100% source document verification (SDV) whereby case report forms are compared directly with source documents on site. A clinical research associate (CRA) acting on behalf of the sponsor is required to carry out the SDV. Despite 100% SDV being the oldest way of verifying data collected during a clinical trial at a site, the scope of this activity gives very little insight into a clinical site's daily processes and day-to-day tasks. Clinical sites tend to prioritize case report form completion (paper or electronic entry) rather than maintaining source documents that fulfill Good Documentation Practices (GDP). This approach has proven to be more time-intensive and resource-dependent. On the other hand, RBM allocates time and resources to each clinical site, based on a calculated individual site risk assessment, whereby sites given a higher risk assessment will require larger resources. RBM is structured in such a way that different risk management approaches are employed to tackle the varying complexities of different trials. One fundamental basis of RBM is that during the progress of a study, as more data is collected and analyzed during the life of a trial, the monitoring strategy for the trial may change to focus on more pivotal elements of that study. Not all data-points are SDV-ed during an RBM visit. This allows a CRA to focus only on study-specific critical data that may affect safety evaluations and endpoints. However, this does not mean data that is not required to be SDV is unimportant or does not need to be collected. This just means that based on the RBM model, a higher emphasis is given to the critical data, hence the need to SDV these data points.

Most sites are familiar with the term SDV but are unaccustomed to the term Source Document Review (SDR). Via SDR, source documents are reviewed thoroughly to assess its quality while ensuring adequacy and adoption of appropriate critical processes. For example, the documentation of a complete informed consent process. The RBM model emphasizes an integrated combination of SDR and targeted SDV to reveal a bigger picture of what happens at a site. Even though SDV is targeted in RBM (<100%), all source data should still be reviewed. If documentation appears to be inadequate, this prompts a CRA to verify it against what is recorded in CRF (even if it is not a targeted SDV-able data point). A discrepancy would question whether a finding is a recurring issue at that site. The risk of potential fraud cannot be ignored (for example, identical vital signs across different patients or across different visits of the same patient). Therefore, RBM allows more focus on protocol-specific processes and significant data points while identifying potential risks effectively as compared to the traditional monitoring model.

Aside from targeted SDV, RBM employs a less frequent monitoring schedule by a CRA (visit frequencies can range from 12-16 weeks) as opposed to the traditional model (average frequency ranges from 4-10 weeks). This would be dependent on the therapeutic area and risk profile of the site. Interestingly, the frequency and duration of a visit are also affected by the number of enrolled patients at the site. Some RBM trials may even require more frequent CRA monitoring visits, triggered by significant events that affect study end-points (adverse events or trial milestones such as the recruitment phase). The traditional model's visit frequency is more labor-intensive and requires a higher cost. Contrariwise, RBM results in a higher benefit-cost ratio, while allowing more flexibility and better time management when monitoring sites.



Since its inception, investigators have raised many concerns with RBM. One of these is the less frequent on-site visits by CRAs. Investigators feel more comfortable with the presence and guidance of a sponsor CRA and the RBM's visit frequency may not be suitable to their needs. However, RBM also implements an activity called remote monitoring, allowing a CRA to remain in contact with their sites regularly, in between scheduled on-site visits. Previous on-site visit activities and follow-ups can now be discussed during remote monitoring contacts (for example, CRF data discrepancies and queries, and providing documents for signing or filing via email or fax). These remote visits are official and conducting them would require adherence to relevant SOPs (for example, writing reports following such visits or providing visit follow-up letters to the site). Another concern from site is the increased labor from site staff in complying with remote monitoring contacts, such as scanning and filing of documents and more administrative tasks to cover the absence of a CRA. Through years of implementing the RBM approach in phases, it was discovered that the workload of site staff has remained roughly the same.

The RBM methodology encourages CRAs to employ subtle ways of investigating a site's clinical process. This is particularly useful when the CRA has no access to hard-copy source documents, such as during a remote monitoring visit. For example, instead of asking the site, "Was the informed consent process carried out for this patient?", which is a simple yes or no question, a CRA may ask, "How was the informed consent carried out and documented for this patient?", allowing insight into the site's understanding of the informed consent process. From asking open-ended questions, CRAs can identify any deficiencies in the site's process in obtaining informed consent.

Part of the RBM model, Sponsors may also implement a centralized monitoring approach. Like remote monitoring, centralized monitoring evaluates study data and trends remotely at a location other than the site. Usually carried out centrally by a team of medical monitors, data managers and statisticians, they detect data trends across CRF pages as well as issues and findings identified at a site level (for example, repeated late re-consenting of a subject using amended ICFs). They also assess the quality and consistency of data collected, and identify missing data and outliers. Lastly, they monitor key performance indicators of a site (for example, the screen failure rate or number of deviations noted), which eventually contribute to its risk assessment profile. Centralized monitoring is integral in driving the success of RBM trials as it complements local monitoring done by CRAs.

RBM is an ever-changing method of managing clinical trials. By leveraging on a wide array of tools and techniques, the quality of clinical trial data and subject safety can be secured for the better. As trial data becomes progressively more electronic, more and more trials are routinely managed via RBM to alleviate high costs and mitigate risk. The favorable cost-effectiveness ratio of an RBM trial eventually contributes to the market and retail price of the approved drug in the future. Therefore, it is in the best interest of sponsors to adopt RBM in their trial management strategies.

Site Selection – What a Sponsor Looks For?

By Soon Wen Xian

Soon Wen Xian, a medical graduate of Volgograd State Medical University, is currently a Clinical Research Associate at an international pharmaceutical organization based in Malaysia.

Clinical research is a process that studies a new treatment effectiveness. While it is a very good opportunity for doctors to study the disease development and treatment, the conduct of clinical research by doctors themselves requires a huge budget. Industry Sponsored Research (ISR) provides a good opportunity for doctors to be involved in new and ground-breaking research that may potentially change the course of treatment globally. The number of clinical research has been increasing over the past 10 years. Almost 50% of all trials registered in clinicaltrial.gov showed that it is conducted in Asia. However, less than 1% of the registered clinical research came to Malaysia. To increase the number of ISR in Malaysia, feasibility process plays an important role.

Feasibility is a process where the pharmaceutical company sends requests for information to analyse which country is a suitable site to conduct a specific trial. With the information, project managers will need to come up with a strategy to ensure that the trial can be completed within the allocated timeline. Information given by the site is very important as it will affect the decision outcome. Below are a few general information that a sponsor usually requests before they decide to carry out a trial in the country:

Patient population for a specific disease

This is the most important factor that is taken into consideration when deciding if a trial should be conducted in a country. A high number of patient population will always be an advantage to the country to be selected but a low number of patient population does not mean the country will not be selected. For some trial, sponsors may need to gather subjects from a few regions that covers several countries. It is important for each site to provide to the sponsors the best estimation in the number of patients that can be recruited. If a country is consistent in providing the committed number of patients, sponsors will be willing to conduct more trials in that country. It is the role of the investigators to provide an accurate estimation of the number of subjects that he/she sees in a week/month, and of this, how many may be recruited.

Investigators must also consider the availability of the site's resources such as manpower and facility as well as holidays/festival which will affect the recruitment process. It is also encouraged for investigators to share their recruitment strategies. With a reasonable number of subject commitment and a good recruitment strategy, sponsors may consider bringing in the trial into the country.

Standard of care for a specific disease

Once a sponsor has information on the patient population, the next thing that they will enquire is the standard of care practiced in the country. A protocol design should not deviate much from the local standard of care as this may affect the study result data or may cause ethical issues. At the very least, the comparator arm drug should be registered in the country for the same indication. Sometimes, sponsors may also invite the investigator to develop and contribute in the protocol design. Sponsors will usually choose a country where the investigator is interested in the protocol design and have the same direction in achieving the protocol objective.

Site Facility

Sponsors will need to know the type of facility available at the site and this may include laboratory service, radiology department service, sample tissue processing machine, courier services, manpower (eg. sub-investigators and study coordinators), investigational product storage place or equipment in the ward. The facility requirements at the site differ according to the different protocols. Thus, the investigator and sponsor must discuss in detail during the feasibility process. Although most of the services can be outsource to a nearby center, the site will need to share with the sponsor their standard operating procedures in outsourcing the procedure to the other center. Besides the availability of facility, manpower resource is also very important. An investigator should always have a team who is experienced in conducting clinical research. The principal investigator and sub-investigator must be familiar with documenting medical notes after reviewing a subject. Study coordinators also play an important role in making sure that the study is conduct as per protocol. At the end of the day, an experienced clinical trial site may influence a sponsor's decision in choosing that particular site.

Short Startup Timeline

The startup timeline always depends on health authority and ethic committee submission timeline. After a site receives the study document, its investigator must review the document before submitting to the ethics committee. The investigator may be required to attend a meeting held by the ethics committee to defend/present the protocol and explain the objectives of the trial. Both investigator and sponsor must work very closely to provide a good timeline estimation whereby the investigator can commit to the submission process. Both parties should also share their schedule plans on the study to ensure that it will not cause any delays.

Competitive Trial

Having a competitive trial is not a disadvantage because it goes to show that a site has the ability to conduct a similar trial. The risk taken by the sponsor will be that the site may not comply to the protocol design or may not commit to the recruitment target. However, if the site is able to share their recruitment strategies, the sponsor will be happy to work with them.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