PERSATUAN TRANSPLAN MALAYSIA

25th Annual Scientific Meeting
Malaysian Society of Transplantation

TRANSPLANTATION: TRANSFORMING THE LANDSCAPE TOWARDS A NEW HORIZON

Marriot Putrajaya
27th - 29th May 2022

PROGRAMME BOOK

In collaboration with:

Kami Sedia Membantu
KEMENTERIAN KESIHATAN MALAYSIA

Ministry of Health Malaysia

Transforming

TRANSPLANTATION TOGETHER WITH YOU

NOVARTIS Sponsored Lunch Symposium

28th May 2022, 1pm - 2pm
Speaker: Dr Rosnawati Yahya
Venue: Putrajaya Ballroom 2, Level ML

29th May 2022, 1pm - 2pm
Speaker: Associate Prof Dr Lim Soo Kun
Venue: Putrajaya Ballroom 2, Level ML

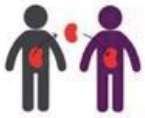
NOVARTIS

MY2205245160

KEMENTERIAN KESIHATAN MALAYSIA

PENDERMAAN ORGAN DI MALAYSIA

JENIS PENDERMAAN ORGAN



Pendermaan organ semasa hidup

- Penderma boleh mendermakan salah satu buah pinggang atau sebahagian daripada hati

Pendermaan organ selepas kematian (secara mati otak)

- Penderma boleh mendermakan semua organ dan tisu (jantung, paru-paru, hati, buah pinggang, mata, injap jantung, tulang, kulit)

Siapakah yang boleh mendermakan organ?

- **Sesiapa sahaja boleh berikrar untuk mendermakan organ selepas kematian.**
- **Mereka yang berusia kurang daripada 18 tahun perlu mendapat kebenaran ibu bapa atau penjaga terlebih dahulu.**
- **Kesesuaian untuk mendermakan organ akan ditentukan selepas kematian mengikut prosedur yang telah ditetapkan**

Sumber: Bahagian Perkembangan Perubatan

UKK MOH

TRANSPLANT MANAGEMENT WITH iComm!t

Helping patients track and manage their transplant responsibilities

Created by astellas
Inspired by YOU

The information provided is for information purposes only and not intended to take the place of the advice of a registered medical practitioner. For further information, please consult your healthcare professionals.

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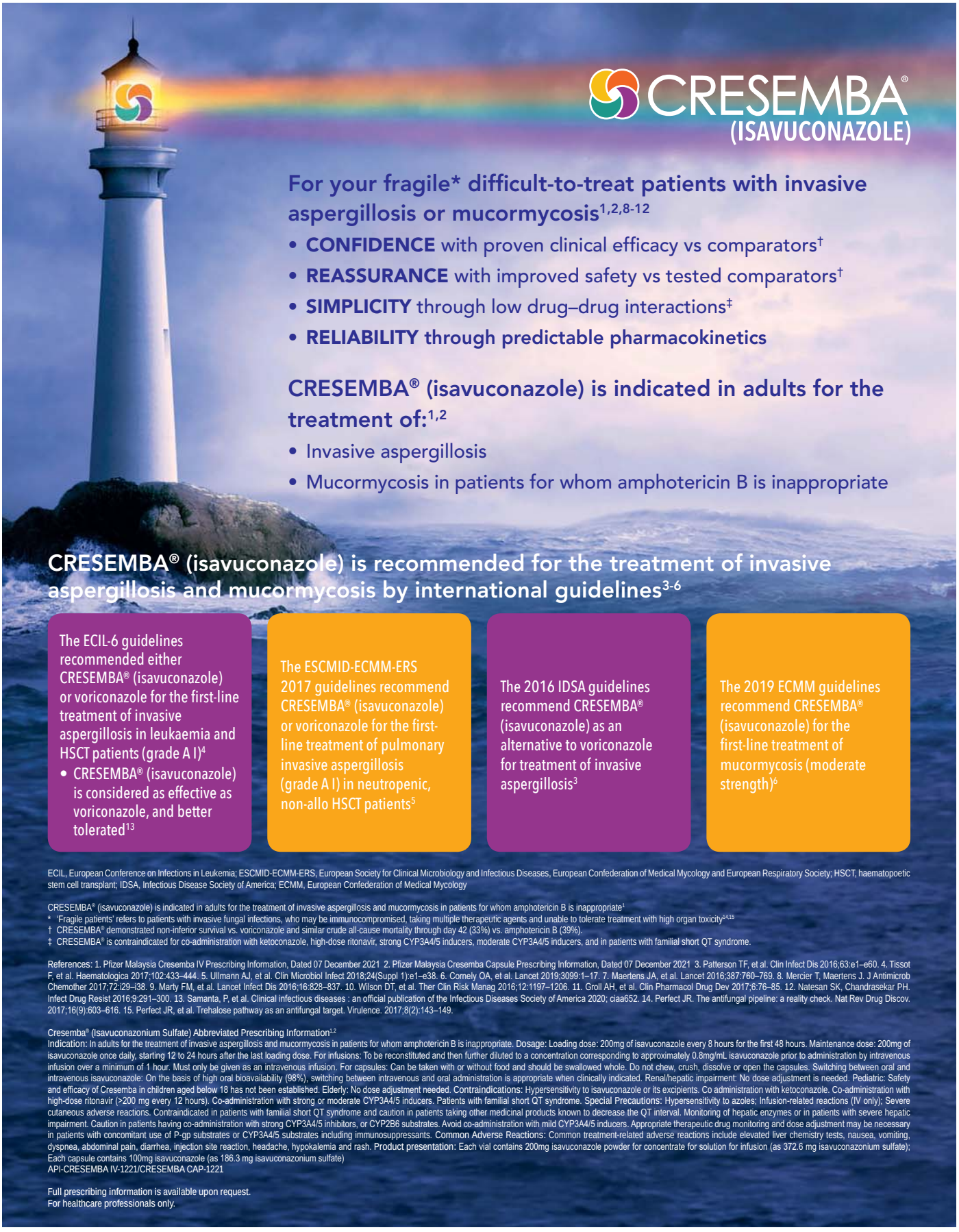

CRESEMBA® (ISAVUCONAZOLE)

For your fragile* difficult-to-treat patients with invasive aspergillosis or mucormycosis[1,2,8-12]

- **CONFIDENCE** with proven clinical efficacy vs comparators†
- **REASSURANCE** with improved safety vs tested comparators†
- **SIMPLICITY** through low drug–drug interactions‡
- **RELIABILITY** through predictable pharmacokinetics

CRESEMBA® (isavuconazole) is indicated in adults for the treatment of:[1,2]

- Invasive aspergillosis
- Mucormycosis in patients for whom amphotericin B is inappropriate

CRESEMBA® (isavuconazole) is recommended for the treatment of invasive aspergillosis and mucormycosis by international guidelines[3-6]

The ECIL-6 guidelines recommended either CRESEMBA® (isavuconazole) or voriconazole for the first-line treatment of invasive aspergillosis in leukaemia and HSCT patients (grade A I)[4]

- CRESEMBA® (isavuconazole) is considered as effective as voriconazole, and better tolerated[13]

The ESCMID-ECMM-ERS 2017 guidelines recommend CRESEMBA® (isavuconazole) or voriconazole for the first-line treatment of pulmonary invasive aspergillosis (grade A I) in neutropenic, non-allo HSCT patients[5]

The 2016 IDSA guidelines recommend CRESEMBA® (isavuconazole) as an alternative to voriconazole for treatment of invasive aspergillosis[3]

The 2019 ECMM guidelines recommend CRESEMBA® (isavuconazole) for the first-line treatment of mucormycosis (moderate strength)[6]

ECIL, European Conference on Infections in Leukemia; ESCMID-ECMM-ERS, European Society for Clinical Microbiology and Infectious Diseases, European Confederation of Medical Mycology and European Respiratory Society; HSCT, haematopoetic stem cell transplant; IDSA, Infectious Disease Society of America; ECMM, European Confederation of Medical Mycology

CRESEMBA® (isavuconazole) is indicated in adults for the treatment of invasive aspergillosis and mucormycosis in patients for whom amphotericin B is inappropriate[1]
* 'Fragile patients' refers to patients with invasive fungal infections, who may be immunocompromised, taking multiple therapeutic agents and unable to tolerate treatment with high organ toxicity[14,15]
† CRESEMBA® demonstrated non-inferior survival vs. voriconazole and similar crude all-cause mortality through day 42 (33%) vs. amphotericin B (39%).
‡ CRESEMBA® is contraindicated for co-administration with ketoconazole, high-dose ritonavir, strong CYP3A4/5 inducers, moderate CYP3A4/5 inducers, and in patients with familial short QT syndrome.

References: 1. Pfizer Malaysia Cresemba IV Prescribing Information, Dated 07 December 2021 2. Pfizer Malaysia Cresemba Capsule Prescribing Information, Dated 07 December 2021 3. Patterson TF, et al. Clin Infect Dis 2016;63:e1–e60. 4. Tissot F, et al. Haematologica 2017;102:433–444. 5. Ullmann AJ, et al. Clin Microbiol Infect 2018;24(Suppl 1):e1–e38. 6. Cornely OA, et al. Lancet 2019;3099:1–17. 7. Maertens JA, et al. Lancet 2016;387:760–769. 8. Mercier T, Maertens J. J Antimicrob Chemother 2017;72:i29–i38. 9. Marty FM, et al. Lancet Infect Dis 2016;16:828–837. 10. Wilson DT, et al. Ther Clin Risk Manag 2016;12:1197–1206. 11. Groll AH, et al. Clin Pharmacol Drug Dev 2017;6:76–85. 12. Natesan SK, Chandrasekar PH. Infect Drug Resist 2016;9:291–300. 13. Samanta, P, et al. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America 2020; ciaa652. 14. Perfect JR. The antifungal pipeline: a reality check. Nat Rev Drug Discov. 2017;16(9):603–616. 15. Perfect JR, et al. Trehalose pathway as an antifungal target. Virulence. 2017;8(2):143–149.

Cresemba® (Isavuconazonium Sulfate) Abbreviated Prescribing Information[1,2]
Indication: In adults for the treatment of invasive aspergillosis and mucormycosis in patients for whom amphotericin B is inappropriate. **Dosage:** Loading dose: 200mg of isavuconazole every 8 hours for the first 48 hours. Maintenance dose: 200mg of isavuconazole once daily, starting 12 to 24 hours after the last loading dose. For infusions: To be reconstituted and then further diluted to a concentration corresponding to approximately 0.8mg/mL isavuconazole prior to administration by intravenous infusion over a minimum of 1 hour. Must only be given as an intravenous infusion. For capsules: Can be taken with or without food and should be swallowed whole. Do not chew, crush, dissolve or open the capsules. Switching between oral and intravenous isavuconazole: On the basis of high oral bioavailability (98%), switching between intravenous and oral administration is appropriate when clinically indicated. Renal/hepatic impairment: No dose adjustment is needed. Pediatric: Safety and efficacy of Cresemba in children aged below 18 has not been established. Elderly: No dose adjustment needed. **Contraindications:** Hypersensitivity to isavuconazole or its excipients. Co administration with ketoconazole. Co-administration with high-dose ritonavir (>200 mg every 12 hours). Co-administration with strong or moderate CYP3A4/5 inducers. Patients with familial short QT syndrome. **Special Precautions:** Hypersensitivity to azoles; Infusion-related reactions (IV only); Severe cutaneous adverse reactions. Contraindicated in patients with familial short QT syndrome and caution in patients taking other medicinal products known to decrease the QT interval. Monitoring of hepatic enzymes or in patients with severe hepatic impairment. Caution in patients having co-administration with strong CYP3A4/5 inhibitors, or CYP2B6 substrates. Avoid co-administration with mild CYP3A4/5 inducers. Appropriate therapeutic drug monitoring and dose adjustment may be necessary in patients with concomitant use of P-gp substrates or CYP3A4/5 substrates including immunosuppressants. **Common Adverse Reactions:** Common treatment-related adverse reactions include elevated liver chemistry tests, nausea, vomiting, dyspnea, abdominal pain, diarrhea, injection site reaction, headache, hypokalemia and rash. **Product presentation:** Each vial contains 200mg isavuconazole powder for concentrate for solution for infusion (as 372.6 mg isavuconazonium sulfate); Each capsule contains 100mg isavuconazole (as 186.3 mg isavuconazonium sulfate)
API-CRESEMBA IV-1221/CRESEMBA CAP-1221

Full prescribing information is available upon request.
For healthcare professionals only.

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CONTENT

MESSAGE FROM PRESIDENT OF MST

On behalf of the organizing committee, it gives us great pleasure to invite you to the 25th Malaysian Society of Transplantation which will be held on 27th to 29th May 2022 at The Marriot Putrajaya.

In 2020, we conducted The Annual Scientific Meeting physically despite the COVID-19 Pandemic. In 2021, The 24th Annual Scientific was conducted in collaboration with the 17th Congress of Asian Society of Transplantation and 36th Annual Congress of Malaysian Society of Nephrology which was a virtual meeting. Despite the challenges with continuous battle against the COVID-19 pandemic, we hope we will be able to have a hybrid meeting in 2022 to enable us to engage international colleagues.

We hope that this Annual Scientific Meeting will continue to be align with the objectives of The Malaysian Society of Transplantation which are

1. Promote and assist in the development of organ and tissue transplantation in Malaysia
2. Disseminate and exchange information relating to the field of organ transplantation at both local and international level
3. Ensure and maintain ethical standards in the field on transplantation in Malaysia

With the above objectives in mind, we are introducing a few new tracks

Special session for dialysis paramedics

Our paramedics plays an exceptional role in communicating with patients and family members and ensuring the well-being of our ESKD patients. This session is designed to:

1. Enhance knowledge in kidney transplantation
2. Empower the dialysis paramedics in identifying patients who are suitable for kidney transplantation and provide initial counselling of patients for kidney transplantation
3. Assisting nephrologist in managing the deceased donor waiting list through hand-on training on the Malaysian Kidney Allocation System (MyKAS)

Special session: Management of End Stage Organ Disease

Solid organ transplantation saves lives in patients with end stage organ failures and improve quality of life. Access to organ transplantation requires identification of suitable recipients, evaluation for fitness to undergo the transplant surgery and equitable allocation process. However, referral for organ transplantation remains low. This session is designed to:

1. Empower junior clinicians in identifying patients that should be considered for organ transplantation
2. Enhance knowledge on indications, contraindications, and preparation for organ transplantation
3. Exposure to MyNOW (Malaysian National Organ Waiting List) to improve referral pathway for patients with End Stage Organ Disease

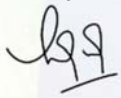
New session on bone transplantation

In line with MST objectives, this year we will be introducing a new track on bone banking and bone transplantation

In Malaysia, our organ transplantation rate remains the lowest in the world and it is our responsibility to promote the transplant agenda to the next level

We sincerely look forward to having you participating in this meeting.
In the meantime, stay safe...

Sincerely,



Dr Rosnawati Yahya
President
Malaysian Society of Transplantation

MESSAGE FROM ORGANISING CHAIRMAN

It is an honour for me to extend my warm welcome to our 25th Annual Scientific Meeting of Malaysian Society of Transplantation (MST 2022) which will take place in Putrajaya Marriot Hotel from 27- 29th May 2022.

Due to the ongoing Covid-19 pandemic, we have decided to host MST 2022 as a hybrid event this year, which will involve physical as well as virtual attendees and presentations.

On behalf of the organizing committee, I welcome and thank all eminent speakers and guests from all over the country, (Singapore, United Kingdom and Australia) across all disciplines for making time to participate and share your specialized and diverse knowledge and expertise with us.

As we know, organ transplant is one of the most successful advances in modern medicine. The history of organ transplants has evolved over a series of breakthroughs in medicine that has influenced all aspects of healthcare globally and especially in Malaysia, which was initiated over forty years ago. Today in Malaysia, there are various health centers in the government sector, public universities, as well as private hospital which undertake multi-disciplinary programs to facilitate transplantation and donation efforts involving organs such as liver, kidney, heart and lung, as well as tissues such as cornea, bones, heart valves and skin.

Our theme for this year's MST 2022 is 'Transplantation: Transforming The Landscape Towards A New Horizon'. It is our hope that this event will provide a platform for a more focused attention and discussion on pertinent issues to spur greater awareness amongst healthcare professionals and the public on transplantation issues encompassing all organ transplant initiatives and programs in Malaysia.

At the conclusion of MST 2022, we hope all participants would have gained greater knowledge and value-added insight into current topics to galvanize concerted efforts in addressing unmet needs and challenges of transplantation programs in Malaysia, moving forward in the new norm.

I wish everyone a pleasant and fruitful meeting in the next few days and stay safe.

Sincerely,

Dr Haniza Omar
Organizing Chairperson
Vice - President Malaysian Society of Transplantation
MST 2022

COVID SOP

Annual scientifi c meetings, seminars and congresses are important avenue for scientists and clinical practitioners to meet, share and get exposed to important current and latest impactful fi ndings and maintain physical networks among various professionals who serve common interests to advance the science and practice of each general or subspecialty.

In the upcoming 25th MST Annual Scientifi c Meeting in Marriott Putrajaya, all delegates will be required to declare their health status, scanning of temperature & MySejahtera QR code check-in on a daily basis at the facility entrance, use hand sanitisers where necessary, compulsory wearing of face masks in closed spaces in the lecture rooms and at the exhibition floor, and maintain recommended physical distancing in the lecture rooms and while interacting in the poster and trade exhibition fl oors. COVID-19 saliva test kits will be provided at registration desk at the congress venue and all participants are required to perform the tests. Anyone who are tested positive or had recent contact with COVID-19 positive person will not be allowed into the congress venus.

Food will be pre packed and dining will be subjected to the necessary physical distancing.

The convention facility will provide reminder signages, fl oor markers and hand sanitisers at strategic places as well as sanitizing high touch points in & out of the ballroom as well as before and after the event. Any staff which deals with F&B will have mask and gloves on.

Covid-19 Standard Operating Procedure
- Social distancing during loading and unloading
- Conduct temperature checks at loading bay
- Vendors & partners team information form
- Hand Sanitizers provided at loading bay
- Ensure vendors & partners wear mask and gloves once enter hotel area especially during set-up and teardown
- Loss & Prevention team is well trained on handling vendors and partners
- Scheduled cleanliness and safety checks by Loss & Prevention team during set-up and teardown

MST COUNCIL MEMBERS (2020 - 2022)

President	:	Dr Rosnawati Yahya
Vice President	:	Dr Haniza Omar
Honorary Secretary	:	Dr Yee Seow Yeing
Honorary Treasurer	:	Dr Mohamad Zaimi Abdul Wahab
Committee members	:	Dr Chandramalar T Santhirathelagan
		Dr Muhammad Iqbal Abdul Hafidz
		Mr Vijayan Manogran
		Ass. Prof. Dr Yoong Boon Koon
		Ass. Prof. Dr Lim Soo Kun
		Dr Suryati Yakob
		Dr Sharifah Shahnaz Syed Abdul Kadir
		Dr Teoh Chee Kiang
		Mr Mohanasundram Pillai
		Dr Hirman Ismail
Internal Auditors	:	Dr Maisarah Jalalonmuhali
		Dr Yap Yok Chin

ORGANISING COMMITTEE

Organising Chairman
Dr Haniza Omar

Secretary
Dr Yee Seow Yeing

Treasurer
Dr Mohamad Zaimi Abdul Wahab

Scientific Programme

Cornea
Dr Chandramalar T. Santhirathelagan

Heart & Lung
Dr Teoh Chee Kiang

Haematology
Dr Sharifah Shahnaz Syed Abdul Kadir
Dr Vijayan Manogran

Liver
Assoc. Professor Dr Yoong Boon Koon
Dr Haniza Tan Sri Omar

Bone
Assoc Prof Azura Mansor

Kidney
Dr Rosnawati Yahya

Organ Donation
Dr Muhammad Iqbal Abdul Hafidz
Professor Dr Lim Soo Kun

FACULTY MEMBERS

Dr Rosnawati Yahya
Head of Transplantation Unit Department of Nephrology Hospital Kuala Lumpur

Professsor Steven Chadban
Director of Renal Medicine, RPA, SLHD Director Renal Medicine and Urology Stream, SLHD Leader, Kidney Node, CPC, University of Sydney

Prof Kwong Yok Lam
Chief of the Division of Haematology, Oncology and Bone Marrow Transplantation

Prof Zhou Li
Chief Physician, Visiting Scholar

Assoc Prof Dr Glenn Bonney
Consultant, Division of Hepatobiliary & Pancreatic Surgery, Department of Surgery

Assoc Prof Helen Pilmore
Renal Physician

Dr Dave Lowe
Director of Research and Development

Dr Jasmeet Kaur
Head of Department Histocompatibility & Transplant Immunology

Dr Mark Dinesh Muthiah
Consultant specialising in Gastroenterology and Hepatology

Dr Samir G Agrawal
Consultant Haemato-Oncologist

Dr Sumana Navin
Independent Consultant - Organ Donation & Transplantation

Dr Suphamai Bunnapradist
Nephrology| Transplant Nephrology

Mr Sagayam Francis
Executive Officer - Transplantation

Mr Thamara Perera
Consultant Liver Transplant Surgeon

Mr Wenshi Jiang
Director of Scientific Committee

Dr (Mr) Vijayan Manogran
Consultant Urologist and Renal Transplant Surgeon

FACULTY MEMBERS *('cont.)*

Dr Wong Hin Seng
Consultant Nephrologist & Head of Department of Nephrology

Prof Dr Azlina Amir Abbas
Professor of Orthopaedic Surgery

Assoc Prof Dr Loh Pui San
- Senior Consultant Anaesthesiologist and Senior Lecturer.
- Head of Transplant Anaesthesia Unit for Renal and Liver Transplantation.

Associate Prof. Nor Faissal Yasin
Consultant Orthopaedic Oncology Surgeon and Head of Department

Dr. (Mr) Toh Charng Chee
Consultant Urologist

Dr Abdul Jabbar bin Ismail
Senior Medical Lecturer DU53, Fakulti Perubatan & Sains Kesihatan (FPSK) Universiti Malaysia Sabah

Dr Azizan Sharif
Consultant Haematologist

Dr Azura Mansor
Associate Professor. Consultant Orthopaedic Surgeon

Dr Bee Ping Chong
Consultant Hematologist

Dr Chandramalar T. Santhirathelagan
Consultant Ophthalmologist / Corneal Surgeon

Dr Che Mahiran binti Che Daud
Cornea Consultant

Dr Dayang Azzyati binti Awang Dahlan
General Surgeon & Hepatopancreaicobiliary Fellow Hepatopancreaicobiliary (HPB) & Liver Transplant Unit

Dr Foo Hee Wei
General paediatrician and paediatric gastroenterologist and hepatologist, Hospital Selayang, Malaysia

Dr Foo Hong Zhi
Medical Officer

Dr Helmi bin Sulaiman
Lecturer, Department of Medicine, University of Malaya

Dr Ho Kim Wah
Haematologist

FACULTY MEMBERS *('cont.)*

Dr Hoo Chai Zhen
Gastroenterology/Hepatology Trainee

Dr Lee Tiong See
Medical doctor registered with Ministry of Health (MOH)1 , Malaysia and the Malaysian Medical Council (MMC)2

Dr Leong Swee Wei
Clinical Respiratory Physician and Internal Medicine Physician

Dr Lim Soo Kun
Associate Professior & Senior Consultant Nephrologist

Dr Maisarah Binti Jalalonmuhali
Associate Professor Department of Medicine Faculty of Medicine

Dr Masita Arip
Centre Head and Consultant Pathologist (Microbiology & Immunology)

Dr Mohamad Zaimi Abdul Wahab
Nephrologist

Dr Muhammad Iqbal bin Abdul Hafidz
Consultant Physician and Nephrologist

Dr Noor Aliza Binti Abd Mutalib
Consultant Hepatologist

Dr Ong Tee Chuan
Chairperson for Blood & Marrow Transplant (Adults) chapter of National Transplant Registry

Dr Petrick Periyasamy
Head of Infectious Diseases Unit, Medical Department, UKM Medical Centre

Dr Ruveena Bhavani Rajaram
Consultant Gastroenterologist and Hepatologist & Internal Physician

Dr Sharifah Shahnaz binti Syed Abd Kadir
Consultant Haematologist

Dr Siti Nor Roha Daman Huri
Cornea Specialist and Consultant Ophthalmologist

Dr Sunita Bavanandan
Consultant Nephrologist and Head

Dr Suryati binti Yakob
Consultant Nephrologist

FACULTY MEMBERS *('cont.)*

Dr Susan Woo
Adult Urologist

Dr Syuhada Dan binti Adnan
Hepatology & Gastroenterology Unit

Dr Tan Soek Siam
Senior Consultant Hepatologist

Dr Tengku Alini Binti Tengku Lih
Chairman, Tissue and Organ Procurement (TOP) Team, Unit Perolehan Organ Hospital (UPOH)

Dr Teoh Chee Kiang
Consultant Cardiologist

Dr Teoh Ching Soon
Haematologist

Dr Yee Seow Yeing
Consultant Nephrologist & Kidney Transplant Physician

Mr Low Lieh Yong
Chief Assistant Medical Officer & Head of Transplant Coordinator, Sabah Transplant Resource Centre, Queen Elizabeth Hospital Kota Kinabalu, Sabah

Mr Muhamad Fahami Bin Ahmad
Health Education Officer

Mr Murali Sundram Mikaail Abdullah
Visiting Consultant Sunway Medical Centre, Hospital Kuala Lumpur, Queen Elizabeth

Mr Prashant Narhari
Consultant Orthopaedic Oncology Surgeon in Penang General Hospital.

Ms Kong Su Shan
- *Clinical Hematology Pharmacist in Hospital Ampang*
- *Coordinator of Antimicrobial Stewardship Program in Hospital Ampang*
- *Member of Selangor State Antibiotic Working Committee and Hospital Infection and Antibiotic Control Committee (HIACC).*

Ms Teong Lee Fang
Clinical Dietitian

PROGRAMME

Pre-Congress : 27th May 2022 (Friday)

0730 - 0820		Registration	
	Deceased Donor Management & Procurement Chairperson: Hasdy Haron / Foo Hong Zhi Venue: Putrajaya Ballroom 1	Hematological Transplantation Chairperson: Sharifah Shahnaz / Ho Kim Wah Venue: Selangor Room 3	Kidney Transplantation: Role of Dialysis Paramedic Chairperson: Mohamad Zaimi Abdul Wahab / Muhammad Iqbal Abdul Hafidz Venue: Putrajaya Ballroom 2
0820 - 0830	Course Overview	Course Overview	Course Overview
0830-0855	Full time Donor Coordinators: Is it worth it? *Foo Hong Zhi*	Neutropenic sepsis in HSCT *Teoh Ching Soon*	Overview of kidney transplantation in Malaysia *Rosnawati Yahya*
0855 - 0920	Donor Detection: Making it a Practice in Melaka Hospital *Foo Hong Zhi*	Nursing role in prevention of infections in HSCT patients *Siti Fazilah Ramli*	Why Living Kidney Transplantation? *Yee Seow Yeing*
0920 - 0945	Extended Criteria Donor for Liver *Manisekar Subramaniam*	Utilizing Infections Biomarkers in HSCT Patients *Helmi Sulaiman*	Staff nurse, Can I go for kidney transplantation? *Lydia Kamaruzzaman*
0945 - 1000	Q & A	Q & A	Q & A
1000 - 1030	Coffee Break		
1030 - 1055	Organ Donation Request *Hasdy Haron*	COVID in HSCT and haemato-oncology patients *Ong Tee Chuan*	What do potential kidney transplant recipients need to know? *Suryati Yakob*
1055 - 1120	Becoming Donor Transplant Coordinator *Low Lieh Yong*	Vaccination after HSCT - When, which and why? *Ho Kim Wah*	**B***Maisarah Jalalonmuhali*
1120 - 1145	Medicolegal and Deceased Donation *Ahmad Hafizam Hasmi*	Role of clinical pharmacists in the management of infections in HSCT patients *Kong Su Shan*	How do I keep my patients fit for transplant? *Lim Soo Kun*
1145 - 1210	Assisted Flight for Organ Donation Activity in Malaysia *Roslan bin Aziz*	Management of donor and recipient with Hepatits B *Syuhada Dan Adnan*	
1210 - 1235	Stress Management for Healthcare Professional (Part 1) *Nurul Hidayah Mat Sarip*	Prevention of antimicrobial resistance – is it possible? *Petrick @ Ramesh K. Periyasamy*	Life after Kidney Transplantation: My Journey as KTR *Khairul Shazwali Taib*
1235 - 1300	Q & A	Q & A	Q & A
1300 - 1430	**MSD Lunch Symposium (MSD)** Challenges in CMV Management in HSCT Recipients: Prevention, Resistance and Safety Consideration *Bor-Sheng Ko* *(Chairperson: Sharifah Shahnaz)* Venue: Putrajaya Ballroom 1		
1430 - 1455	Stress Management for Healthcare Professional (Part 2) *Nurul Hidayah Mat Sarip*	Update on the management of difficult to treat Gram negative bacterial infection *Petrick @ Ramesh K. Periyasamy*	Malaysian Kidney Allocation System (MyKAS): What do you need to know? *Mohamad Zaimi Abd Wahab*
1455 - 1520		Management of Invasive Fungal Infection during the COVID Era **(Astella Sponsored Lecture)** *Kwong Yok Lam*	Malaysian Kidney Allocation System: (Practical Session) *Choo Cheh Loo* *Yee Seow Yeing*
1520 - 1555	Post Donation Care: Who, What, When & How *Hasdy Haron*	Invasive Mould Infections in HSCT Patients: What we know so far about the Management of IMI **(Pfizer Sponsored Lecture)** *Samir Agrawal*	
1555 - 1620		**Case Presentation** *Teoh Ching Soon*	
1620 - 1645	Q & A	Q & A	Q & A
1645	Coffee Break		

Day 1: 28th May 2022 (Saturday)

0730 - 0830	Registration			
0830 - 0900	**Plenary 1** National Transplant Program: Where are we and Where are we heading to? *Dato Dr Asmayani Khalib* *Chairperson: Hirman Ismail* Venue: Putrajaya Ballroom 2			
0900 - 0930	**Plenary 2** Legacy of Hope: Beyond Giving **(***Chairperson: Sharifah Shahnaz / Haniza Omar)* Venue: Putrajaya Ballroom 2			
0930 - 1000	**Opening Ceremony** *Dato Dr Asmayani Khalib* *Chairperson: Suryati Yakob* Venue: Putrajaya Ballroom 2			
1000-1030	Coffee Break			
	Free Paper 1 Venue: Selangor Room *Chairperson: Yoong Boon Koon*	Free Paper 2 Venue: Penang Room *Chairperson: Lydia Kamaruzaman*	**Recent Advances in Transplantation** Venue: Putrajaya Ballroom 2 *Chairperson: Suryati Yakob / Esther Tan*	**Management of End Organ Disease** Venue: :Putrajaya Ballroom 1 *Chairperson: : Hasdy Haron / Teoh Chee Kiang*
10.30 - 1055			The Clinical Utility of High Resolution HLA Tissue Typing **(Immucor Sponsored Symposium)** *Jasmeet Kaur*	Deceased Donor Detection *Hasdy Haron*
1055 - 1120			Immune Monitoring in Liver Transplantation- The Role of Quantifying Interfero **(Qiagen Sponsored Symposium)** *Tess McClure*	Deceased Donor Management *Abdul Jabbar Ismail*
1120 - 1145			Non-Invasive dd-cfDNA Assessment in Renal Transplant: Opportunity for Injury Detection and Intervention **(ScienceVision SponsoredSymposium, Speaker Supported by CareDx)** *Suphamai Bunnapradist*	Promoting Deceased Donation in Malaysia: What is the role of HCW? *Fahami Ahmad*
1145 - 1200			Q & A	Q & A
1200 - 1225			Donation After Cardiac Death: Can We Do It? *Tengku Alini Tengku Lih*	Early identification of advanced heart failure: When to refer for cardiac transplantation *Azmee Ghazi*
1225 - 1250			Protecting Transplant Patients in Fight against COVID-19 **(FC Bios Sponsored Symposium)** *Dave Lowe*	Selection criteria and evaluation for cardiac transplantation *Teoh Chee Kiang*
1250 - 1300			Q & A	Q & A

Day 1: 28th May 2022 (Saturday) *('cont.)*

1300 - 1400	**NOVARTIS Sponsored Lunch Symposium** *Speaker: Rosnawati Yahya* *Chairperson: Maisarah Jalalonmuhaili* Venue: Putrajaya Ballroom 1		**ASTELLAS Sponsored Lunch Symposium** Kidney Transplantation during the COVID 19 Pandemic *Speaker: Lee Ju Han* *Chairperson: Muhammad Iqbal Abd Hafidz* Venue: Putrajaya Ballroom 2	
	Haematology *Venue: Selangor Room* *Chairperson: Azizan Sharif*	**Liver** *Venue: Kuala Lumpur Room* *Chairperson: Yoong Boon Koon / Noor Aliza Mutalib*	**Kidney** *Venue: Putrajaya Ballroom 2* *Chairperson: Toh Charng Chee / Maisarah Jalalonmuhali*	**Management of End Organ Disease** *Venue: Putrajaya Ballroom 1* *Chairperson: Lim Soo Kun / Hirman Ismail*
1400 - 1425	Overview of Haploidentical HSCT: Local experience *Tan Sen Mui* *Bee Ping Chong* *Chang Kian Meng*	Impact of COVID-19 pandemic in liver transplantation *Mohanasundram Pillai*	How do I evaluate potential paediatric recipients with urological abnormalities? *Susan Woo*	Kidney Transplantation in Malaysia *Rosnawati Yahya*
1425 - 1450	Donor selection and Preparing for Haploidentical HSCT *Chang Kian Meng*	Machine Perfusion in Liver Transplantation *Glenn Bonney*	Kidney Donor Nephrectomy: Open, Laparoscopic & Robotic Laparoscopic: What, Why and Who? *Murali Sundram*	Kidney Transplant: Identifying and Preparing Suitable Recipients *Suryati Yakob*
1450 - 1515	Management of donor speci□c antibodies in haploidentical HSCT *Sharifah Shahnaz*	Liver Transplantation versus Palliative care in ALF : The turning point *Thamara Perera*	Post-Transplant hydronephrosis: How to approach? *Vijayan Manogran*	Preparing Living Kidney Donors *Muhammad Iqbal Abdul Ha□dz*
1515 - 1530	Q & A	Q & A	Q & A	Q & A
1530 - 1600	**Coffee Break**			
1600 - 1625	Who should get haploidentical HSCT - Indication of Haploidentical HSCT in current era *Bee Ping Chong*	Perioperative Care and Intraoprative Challenges in Liver Transplantation - The Anaesthetist Perspective *Loh Pui San*	Recurrence of Disease after Kidney Transplantation : Special Consideration in Management *Lim Soo Kun*	Identify Advanced Lung Disease and Deciding Optimized Options of Therapy *Swee Wai Leong*
1625 - 1650	Impact of COVID-19 pandemic to HSCT activity - local and internationally *Tan Sen Mui*	Case Presentation *Hoo Chai Zhen / Dayang Azzyati*	Kidney Transplantation in HIV, HBV and HCV Patients : A lost opportunity *Wong Hin Seng*	Evaluation and Selection Criteria for Lung Transplantation *Swee Wai Leong*
1650 - 1700	Q & A	Q & A	Q & A	Q & A
1730	Malaysian Society of Transplantation Biennial General Meeting			
1930	Faculty Dinner (By Invitation Only)			

FREE PAPER Day 1: 28th May 2022 (Saturday)

	Free Paper 1: Selangor Room	**Free Paper 2:** Kuala Lumpur Room
1030 - 1040	Diagnostic Components of Sarcopenia in Kidney Transplant Recipients - Prevalence and Associated Factors Study in A Single Center *Ooi Shok Hoon*	Donor-derived Cell-free DNA Among Allograft Protocol Biopsy at University Malaya Medical Centre *Maisarah Binti Jalalonmuhali*
1040 - 1050	Autologous Stem Cell Transplantation (ASCT) in Multiple Myeloma: A Retrospective Single Centre Analysis *Chong Shu May*	COVID-19 Antibody Titres Following Completion of Second Dose SARS-CoV-2 Vaccination Among The Kidney Transplant Recipients *Maisarah Binti Jalalonmuhali*
1050 - 1100	Death with Graft Function after Kidney Transplantation: A Single Centre Experience *Siti Hafizah Mohammad Ismail*	Factors Associated with Low Antibody Responses Among Kidney Transplant Recipients *Maisarah Binti Jalalonmuhali*
1100 - 1110	A Retrospective Study on The Success Rate of Chemotherapy-based Stem Cell Mobilization in Combination with G-CSF in A National Transplant Centre in Malaysia *Andy Tang Sing Ong*	Reversing Myelofibrosis with Allogenic Stem Cell Transplant: Hospital Ampang Experience *Wong Tien Gen*
1110 - 1120	SGLT2 Inhibitors Use in Kidney Transplant Patients - A Retrospective UMMC Experience *Ahmad Azhar bin Abdul Rahim*	BK Virus Infection in Kidney Transplant Recipients: A Single Centre Experience *Go Zher Lin*
1130 - 1140	Impact of Delayed Graft Function and Outcome of Cadaveric Kidney Transplant: A Single-Centre Experience *Ong Yu Chen*	Conversion to Everolimus in Kidney Transplant Recipients: Our Experience in Hospital Kuala Lumpur *Lee Sze Yin*
1140 - 1150	Utilisation of Therapeutic Plasma Exchange in Treating Transplant-Associated Thrombotic Microangiopathy: A Single Centre Retrospective Cross-Sectional Cohort Study *Wong Yih Seong*	Cinacalcet Use in Persistent Hyperparathyroidism in Post Renal Transplant Recipient- A Retrospective Observational Study in Hospital Kuala Lumpur *Heng Yik Shan*
1140 - 1200	Correlation Between 24 Hour Urine Creatinine Clearance, Estimated GFR and Measured GFR with DTPA Renal Scan in Living Kidney Donors *Devamalar Simatherai*	Clinical Outcome of Calcineurin Inhibitors-free Maintenance Immunosuppressant Regime in Kidney Transplantation - A single Center Experience. *Kar Wah Fuah*
1210 - 1220	Mycobacterium Tuberculosis in Kidney Transplant Recipients *Dr Jamuna A/P Radha Krishna*	A Retrospective Descriptive Study of ABO-incompatible Kidney Transplantation in Perspective of Cost: HKL Experience *Foo Geong Taat*
1220 - 1230	The Use of Recombinant Parathyroid Hormone Therapy in A Kidney Transplant Patient with Severe Hypocalcemia *Premila Peraba*	Incidence, Risk Factors and Outcome of Cytomegalovirus Infection in Kidney Transplant Recipients: A Single-Center Experience *Uvanesan Kathiravelu*

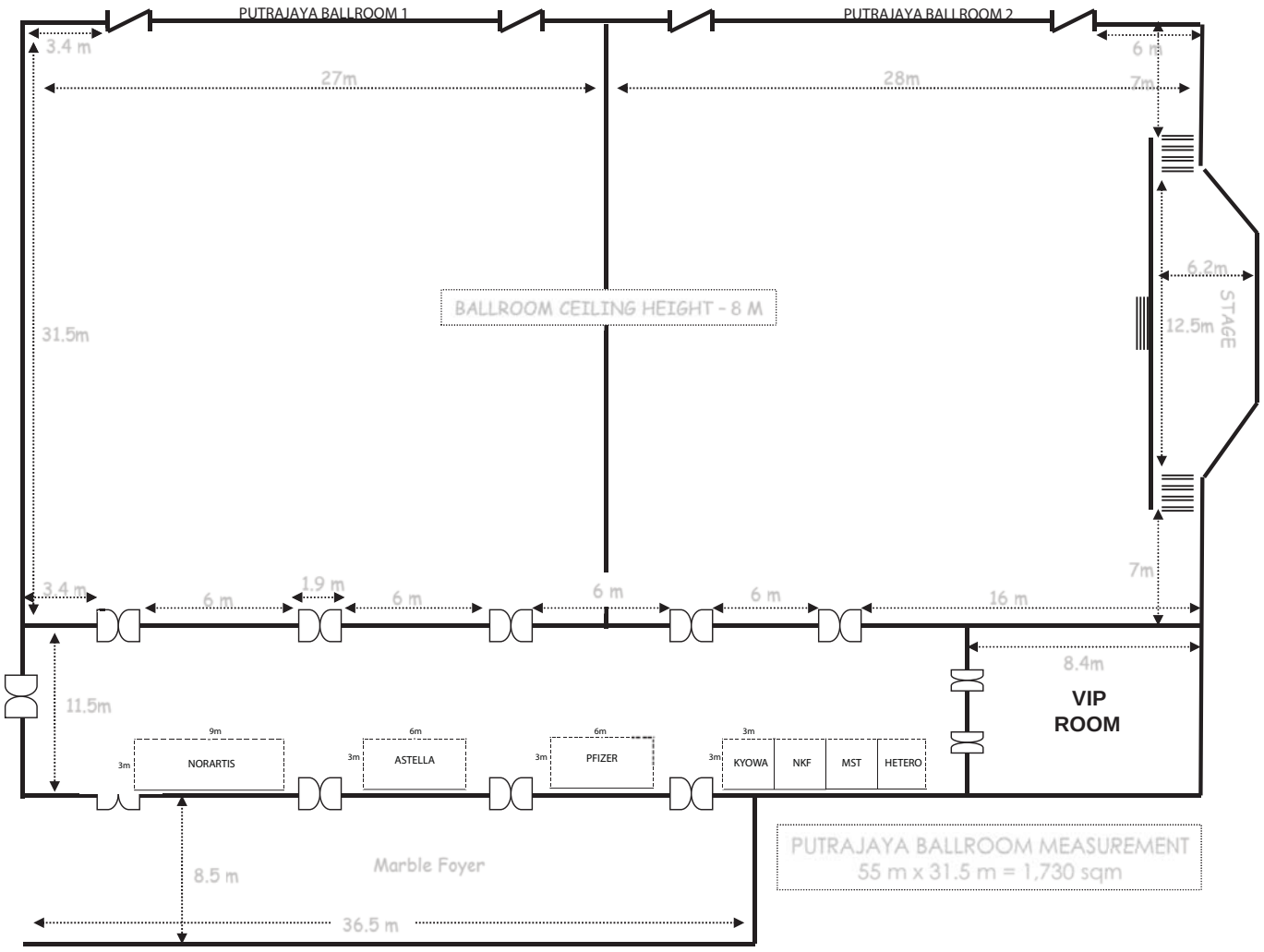
Day 2: 29th May 2022 (Sunday)

0900 - 0930	**Plenary 3** High Risk Recipient and Marginal Graft *Thamara Perera* *(Chairperson: Mohanasundram)* Venue: Putrajaya Ballroom 2			
0930 - 1000	**Plenary 4** Clinical Governance in Transplantation *Melvyn Anthony Edwards* *(Chairperson : Vijayan Manogran)* Venue: Putrajaya Ballroom 2			
1000 - 1030	**Tea Break**			
	Heart & Lung Venue: Selangor Room *Chairperson: Teoh Chee Kiang / Nazeri Nordin*	**Liver** Venue: Penang Room *Chairperson: Haniza Omar / Yoong Boon Koon*	**Kidney** Venue: Putrajaya Ballroom 2 *Chairperson: Yee Seow Yeing / Mohamad Zaimi Abdul Wahab*	**Management of End Organ Disease** Venue: Putrajaya Ballroom 1 *Chairperson: Teoh Ching Soon / Chandramalar T Santhirathelagan*
1030 - 1055	Heart Transplant : Past, Present & Future *Nazeri Nordin*	Tele-hepatology in liver transplantation *Tan Soek Siam*	COVID infection and vaccine in Kidney Transplant Recipients *Steven Chadban*	Malaysia Stem Cell Registry *Masita Arif*
1055 - 1120	Long Term Care of Heart Transplant Recipient *Teoh Chee Kiang*	Psychological Issues Post Transplant *Mark Dinesh Muthiah (NUS)*	Cardiovascular Disease and Death after Kidney Transplantation *Helen Pilmore*	Curing cancer with stem cell transplantation *Azizan Sharif*
1120 - 1145	Controversies and Challenges of Ventricular Assist Device Therapy *Teoh Chee Kiang*	Recipients with NAFLD *Ruveena Bhavani*	Healthy Eating After Kidney Transplantation: What do we mean? *Teong Lee Fang*	Long Term Follow Up After HSCT *Sharifah Shahnaz*
1145 - 1200	Q & A	Q & A	Q & A	Q & A
1200 - 1225	VA EMCO Adverse Events and How to Achieved Successful Management and Long Term Outcomes *Suneta Sulaiman*	Bile duct stricture post transplantation *Lee Tiong See*	Managing diabetes after kidney transplant: Anything new? *Sunita Bavanandan*	Corneal Donation & Transplantation In Malaysia *Chandramalar T Santhirathelagan*
1225 - 1250	Current Status of Lung Transplantation of Malaysia *Ashari Yunus*	DPMAS for bridging Liver Failure **(Ceremedic Sponsored Symposium)** *Zhou Li*	Debate: Should we transplant obese ESRD patients Maisarah Jalalonmuhali & *Toh Charng Chee*	Bone Transplantation in Malaysia: Human Bone Banking and transplantation *Azura Mansor*
1250 - 1300	Q & A	Q & A	Q & A	Q & A
13.00 - 14.00	**NOVARTIS Sponsored Lunch Symposium** Pushing The Frontiers In Kidney Transplantation *Lim Soo Kun* *Chairperson: Yee Seow Yeing* Venue: Putrajaya Ballroom 2		**ROCHE Sponsored Lunch Symposium** Dissecting the Transplant Ecosystem: Gaps, Challenges, Priorities *Ghazali Ahmad, Hirman Ismail, Surasak Kantachuvesiri* *Moderator: Maisarah Jalalonmuhali* Venue: Putrajaya Ballroom 1	

Day 2: 29th May 2022 (Sunday) *('cont.)*

	Cornea Venue: Selangor Room *Chairperson: Chandramalar T Santhirathelagan*	**Bone** Venue: Penang Room *Chairperson: Azura Mansor*	**Organ donation** Venue: Putrajaya Ballroom 2 *Chairperson: Hasdy Haron / Muhammad Saiful Asyraff bin Marzukhi*	**Management of End Organ Disease** Venue: Putrajaya Ballroom 1 *Chairperson: Noor Aliza Mutalib / Mohanasundram*
1400 - 1425	Corneal donation during COVID-19 pandemic *Chandramalar T Santhirathelagan*	Clinical Use of Femoral Head Allograft In Joint Replacement Surgery *Azlina Abas*	Development of Organ Donation Quality Management System in China *Wenshi Jiang*	Overview of liver transplantation in Malaysia *Haniza Omar*
1425 - 1450	The Journey of Corneal Transplantation & Eye Banking *Shamala Retnasabapathy*	Long Bone Allografts In Orthopaedic Surgery *Prashant Narhari*	Counselling the Donor Family Death of the Recipient Immediate Post Transplant *Sumana Navin*	Selection criteria and evaluation for liver transplantation *Noor Aliza Mutalib*
1450 - 1515	Corneal surgery and Keratoconus *Siti Nor Roha Daman Huri*	Bone allografts in orthopaedic surgery *Faissal Yassin*	Practicing Telemedicine in Organ Donation: Efficiency in Coordination *Wenshi Jiang*	Indication in Paediatric population *Foo Hee Wei*
1515 - 1530	Q & A	Q & A	Q & A	Q & A
1530 - 1600	Coffee Break			
1600 - 1625	DSAEK Hospital Sg Buloh Experience *Che Mahiran Che Daud*	Case Discussion *Azlina Abas / Prashant Nahari / Faissal Yassin*	Covid 19 and Deceased Donation: Experience in UMMC *Yap Mei Hoon*	Introduction of MyNOW *Murnilina Malek*
1625 - 1650	Corneal Transplant in Peripheral Ulcerative Keratitis *Rohanah Alias*	Forum *Azlina Abas / Prashant Nahari / Faissal Yassin*	Ethics in Tissue Donation *Hasdy Haron*	
1650 - 1700	Q & A	Q & A	Q & A	Q & A
1700	Prize Giving Ceremony Bon Voyage			

DIRECTORY OF EXHIBITION BOOTH



SPEAKERS ABSTRACTS

PRE-CONGRESS

DECEASED DONOR MANAGEMENT & PROCUREMENT

Becoming Donor Transplant Coordinator

Low Lieh Yong, Sabah Transplant Resource Centre, Queen Elizabeth Hospital, Kota Kinabalu

Donor transplant coordinator plays vital role in ensuring the success of organ donation program at hospital level. The scope of service for a hospital-based donor transplant coordinator is not limited to clinical coordination of organ or tissue procurement process, but also as a person of reference for the organ donation and transplantation services as a whole. Donor transplant coordinator is expected to drive the organisation to achieve successful organ donation, which means putting effort in all components of the program – clinical, administrative and promotion. The activities span from potential donor detection and maintenance as well as procurement and logistics, to training and awareness programs for health care workers, to promotional activities to increase organ pledger rate and stimulate public interest in organ donation. Apart from medical knowledge particularly in critical care, donor transplant coordinator must possess substantial interpersonal skills to be able to handle bereaved donor families and also networking skills with multiple disciplines to actualise a donation. Above all, being approachable, consistent and committed

HEMATOLOGICAL TRANSPLANTATION

COVID in HSCT and Haemato-oncology Patients

Ong Tee Chuan, Chairperson for Blood & Marrow Transplant (Adults) chapter of National Transplant Registry, Hospital Ampang

Covid-19 pandemic results in serious mortality and morbidity worldwide, patients with hematological malignancies are the most severely affected cohort, in addition to greatly elevated risk of severe Covid-19 and high mortality, the pandemic has affected the timely diagnosis, treatment and follow-up in hematological malignancy. There are still inadequate big randomized clinical trials to guide scientifically proven management plan for this group of patients, many recommendations are extrapolated from data and clinical trials of non-cancer population, in addition to logical inference from the understanding of immunological dysregulation and pathophysiology of Covid-19. With more experience and information coming in, Hematologists must use existing and updated data to plan and manage patients with hematological malignancies to achieve the balance between inadequate treatment of underlying disease and predispose patients to more severe Covid-19 if they are infected during treatment.

Prevention of Antimicrobial Resistance - Is It Possible?

Petrick Periyasamy, Head of Infectious Diseases Unit, Medical Department, UKM Medical Centre, PPUKM HCTM

Without much fanfare and shadowed by Covid 19 many of us did not realise that we had the 4th pandemic which was the Post Antibiotics ERA 2019. The global burden associated with drug-resistant infections assessed across 88 pathogens and drug combinations cost in 2019 was an estimated 4·95 million. A staggering 1·27 million deaths were directly attributable to drug resistance.

With that in mind, is broad spectrum antibiotics necessary all the time? Studies have shown initial antimicrobial therapy that is too broad is associated with poor outcomes. Not only that, broad-spectrum antibiotic treatment has been associated with an increased mortality risk.

Duration also matters in the treatment of infection. Risk of new resistance emergence increases for each day of additional exposure to antipseudomonal β-lactam antibiotics.

However, haematology patients and hematopoietic stem cell transplantation recipients undergoing intensive myelosuppressive/ immunosuppressive treatment are at high risk for severe, life-threatening, bacterial infections. 13 – 60% of HSCT recipients develop BSI, which are associated with 12 – 42% mortality.

What are the evidence to support stopping antibiotics when patient is stable despite still febrile/afebrile neutropenia? What factors influence empiric antibiotic choice? Most importantly are the risk factors for infection with resistant bacteria and risk factors for a complicated clinical course.

They are some challenges when implementing ECIL 4 guidelines and here we will see some solutions in the other studies for example the How long trial and antibiostop therapy to name a few in guiding us.

With this and some old fashioned antibiotic stewardship, it is my hope, antimicrobial resistance can be delayed or even prevented.

Update on The Management of Difficult to Treat Gram-Negative Bacterial Infection

The Human and Economic cost of Antimicrobial Resistance (AMR) is expected to cause 10 million deaths attributed to AMR in 2050. There could be a reduction of 2% to 3.5% in Gross Domestic Product (GDP) costing the world up to 100 trillion USD to manage this silent pandemic soon.

WHO publishes its first ever list of antibiotic-resistant "priority pathogens" – a catalogue of 12 families of bacteria that pose the greatest threat to human health. Priority 1 which is CRITICAL are carbapenem-resistant Acinetobacter baumannii (CRAB), carbapenem-resistant Pseudomonas aeruginosa, carbapenem-resistant Enterobacteriaceae (CRE).

We will look at the common multi drug resistant organisms around this region and see how the new drugs cater to our own country needs. Some of the drugs that are already available in our shores are Zerbaxa (Ceftolozane/Tazobactam) and Zavicefta (ceftazidime and avibactam) . We will see how best we can use them. However there still seems to be a big hole left in terms of treatment which is the treatment of metallo beta lactamase (MBL) CRE and CRAB in our country. For this, we will explore some potential new antibiotics like cefiderocol and ervacycline in terms of treatment of this difficult organism.

KIDNEY TRANSPLANTATION: ROLE OF DIALYSIS PARAMEDIC

Overview of Kidney Transplantation in Malaysia

Dr Rosnawati Yahya, Head of Transplantation Unit, Department of Nephrology, Hospital Kuala Lumpur

Introduction

In Malaysia, more than 44,000 people live with end-stage kidney disease (ESKD) (1). The development of chronic kidney disease (CKD) and its progression to this terminal disease remains a significant source of reduced quality of life and significant premature mortality. Chronic kidney disease (CKD) is a debilitating disease, and standards of medical care involve monitoring and managing risk factors of disease progression. Early referral to nephrologists for planning of kidney replacement therapy is important. Options of kidney replacement therapy include kidney transplantation, haemodialysis and peritoneal dialysis. In some patients a conservative approach may be considered if dialysis is not suitable or in patients with limited life expectancy due to other co-morbidities.

Burden of CKD & status of kidney transplantation

The prevalence of CKD in Malaysia had increased from 9.1% in 2011 to 15.5% in 2018(2). Similarly, the number of treated ESKD had increased from 26,442 in 2011 to 44.136 in 2018(1). Bujang and his co-worker predicted that the prevalence of ESKD will continue to rise from 46 thousands patients in 2018 to 100 thousand patients by 2040 (3). The rise in the prevalence of ESKD has a significant impact the economy of Malaysia. Based on Hirman et al, The ESKD expenditure in public sectors had increased by 94% from USD 405 million in 2010 to USD 785 million in 2016 (4). Unfortunately, the number of kidney transplantation performed in Malaysia is extremely low. In 2020, Malaysia observe incidence rate of living kidney transplant rate of 3.46 pmp and deceased kidney transplant rate of 1.27 pmp with a total kidney transplant rate of 4.83 pmp (5).

Benefit of kidney transplantation

Kidney transplantation provides better long term survival provides better quality of life and cheaper in comparison to continuing on dialysis,

Types of kidney transplantation

There are two sources of kidney donors, deceased donors and living donors. In Malaysia, we are practising and opt-in system where the consent of the family member is obtained prior to organ donation.

Deceased Donors

There have been several efforts to improve donation rate. Awareness on importance of organ donation among the general public, medical professionals, policy makers and fund providers. There is a need of continuous awareness program. The National Transplant Resource Centre (NTRC) had actively played this role in the past. However, this has slowed down due to COVID 19 pandemic and other reasons.

Many other initiatives had been planned and introduced at the Ministry of Health (MOH) level to strengthen the transplant program with the aim to increase deceased donor organ donation rate but due to lack of follow up actions , those initiatives failed to achieve the objectives . The MOH introduced "Unit Perolehan Organ Hospital (UPOH)" team in 2019 to focus on Intensive Care Units in large public hospitals to identify potential brain-dead donors, engaging and training intensivist and anaesthetists to perform brain stem function tests and to refer potential donors to the Transplant Organ Procurement (TOP) teams.

Deceased donor kidneys allocation criteria

Given the small number of kidneys from deceased donor, the eligibility criteria to be on the waiting list is strict. Previous allocation system known as Malaysian Organ Sharing System (MOSS) was introduced in 1998 (6,7). MOSS allocation system was based on a point system adopted by other countries and summarized in table 1. Due to logistics, human resource & financial reasons, it is impossible to have HLA & panel reactive antibody (PRA) tested for all patients in the waiting list especially when the transplant rate is extremely low. It is also difficult to test for HLA of the deceased donor prior to transplant. Therefore, HLA matching and PRA score has not been used for kidney allocation in Malaysia. For these reasons , the only criteria feasible in Malaysia then in determining kidney allocation is based solely on duration of dialysis. Kidney allocation systems that emphasized on waiting time place minimal attention to optimizing the use of extremely limited organs.

Table 1: MOSS Criteria and Scoring System

Criteria	Scoring System
HLA matching	12 points 2 points for every HLA match
PRA	10 points 1 point for every 10%
Waiting time	20 points 1st get 20 points, last have 0 points
Logistic scores	6 points - when applicable (prolonged cold ischaemic time)
Age of patient	Organs from DD < 18 years allocated to recipient < 18 years

DD, deceased donor; HLA, human leucocyte antigen; MOSS; Malaysian Organ Sharing System; PRA, panel reactive antigen

In 2019, a new allocation system was introduced, named as Malaysian Kidney Allocation System (MyKAS) (8). MyKAS utilizes a mathematical scoring system which estimated the chances of survival after kidney transplantation, Estimated Post.

Transplant Survival (EPTS). EPTS is utilized by the United Organ Sharing System (UNOS) in the United States. During 2020 to 2021 period, EPTS scoring of 0-20% were considered eligible. Data suggested the optimal cut-off EPTS scoring was 38%. However, this is recently revised and EPTS scoring of 0-40% is now considered eligible and this will be adopted in 2022 allocation system.

Living Donors

Majority of kidney transplantation performed in Malaysia are from living donors. Based on the Unrelated Living Organ Donation Policy and Procedures 2011, first and secondary relatives are allowed to donate, whereas third degree relatives need to be evaluated and obtain approval from The Unrelated Transplant Approval Committee(UTAC), MOH(9). There is a need to expand potential living donors to include friend as well as altruistic donors

Degree of Consanguinity	Example	
First degree relative	Mother Daughter Full sister (including heterozygous twin/multiple twins)	Father Son Full brother (including heterozygous twin/multiple twins)
Second degree relative	Grandmother Granddaughter Aunt Niece Half sister	Grandfather Grandson Uncle Nephew Half brother
Third degree relative	Great grandmother Great granddaughter Great aunt First female cousin Grand niece	Great grandfather Great grandson Great uncle First male cousin Grand nephew

High immunological risk transplant

In Malaysia, we have embarked on high immunological risk transplants. These include ABO-incompatible(ABOi) transplant as well as HLA incompatible transplant (transplant in the presence of Donor Specific Antibody (DSA). Both types of transplant requires desensitization procedure to remove antibodies that can cause early antibody mediated rejection (AMR); anti-hemagglutinins antibody (ABOi) and DSA in HLA incompatible transplant. Desensitization procedures achieved by plasmapheresis and B cell therapies and accompanied by higher state of immunosuppression. This added to cost and increased risk of infection immediate post transplantation

ABO incompatible transplant

Malaysia had performed the first ABOi transplant since 2021. ABOi transplant carries increased risk of early rejection. There is a concern of increased risk of infection such as BK virus as well as urinary tract infection. However, the long term allograft outcome is comparable to ABO compatible transplant

High immunological risk transplant

High immunological risk transplant (due to the presence of DSA is associated with increased risk of allograft rejection as well as increased risk of long term allograft failure. However, HLA-incompatible transplant is associated with better survival than continuing on dialysis.

Paired Kidney Exchange Program (PKE)

PKE aims to increase the number of living donor kidney transplants in Malaysia by exchanging organs between incompatible donor/recipient pairs. Once enrolled in this program, a recipient and their willing, but incompatible live donor agree to exchange kidneys with another incompatible pair so that both recipients receive compatible organs from strangers. As such, donors must be willing to donate their kidney to someone they do not know, while their intended recipient receives a kidney from an unknown donor who is also part of an incompatible donor/recipient pair. For some patients, PKE may provide their only opportunity of kidney transplantation. PKE occurs when a live donor (Donor A) is willing to donate to a spouse or relative (Recipient A), but cannot do so because they have an incompatible blood type or tissue type. PKE, through its database of registered pairs, helps to find another pair in the same situation (Donor and Recipient B) who might be a match with Donor and Recipient A. By exchanging donors, two compatible matches are created.

References

1) *Malaysian Dialysis and Transplant Registry Reports 2018. https://www.msn.org.my/nrr/mdtr2018.jsp*
2) *Saminathan et al. Prevalence of chronic kidney disease and its associated factors in Malaysia; findings from a nationwide population-based cross-sectional study. BMC Nephrology 2020. 21;344*
3) *Adam Bujang et al. International Journal of Nephrology 2017*
4) *Hirman et al. Economic Burden of ESRD to the Malaysian Health Care System. Kidney Int Reports 2019 May 29;4(9):1261-1270.doi: 10.1016/j.ekir.2019.05.016.*
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9) *Unrelated Living Organ Donation Policy & Procedure. https://www.moh.gov.my/moh/resources/auto%20download%20images/589d78c926165.pdf*

Why Living Kidney Transplantation?

Yee Seow Yeing, Consultant Nephrologist & Kidney Transplant Physician, Hospital Kuala Lumpur

Kidney transplantation is the preferred renal replacement therapy as it offers better quality of life, longer survival and most cost effective modality. However, the kidney transplantation rate In Malaysia is poor due to multifactorial barriers including funding limitation, poor transplant literacy amongst ESKD patients, cultural beliefs and lack of awareness on organ donation and transplant.

Living donor kidney transplantation is predominant due to poor deceased donation rates. There are some advantages of living donor kidney transplants over deceased donor kidney transplants such as reduced delayed graft function and acute graft rejection as well as less HLA mismatches as the donors are usually blood-relatives.

Malaysian Kidney Allocation System (MyKAS): What you need to know?

Mohamad Zaimi Abdul Wahab, Nephrologist, HKL

Deceased donors has been a potential source of kidneys for our end stage kidney disease patients since 1976 but their numbers had remained low until today.The exponential growth of kidney failure in the country and the low donation rate called for an allocation system that will have to balance the principle of utility and justice as the available kidneys are very scarce and the patients need to wait an average of 15 years to get a kidney.

In 1998, the Malaysian Organ Sharing System (MOSS) was established by the Malaysian Society of Nephrology (MSN) to serve as a standardised list of patients waiting for a deceased donor kidney transplant. On 1st September 2006, an electronic version of MOSS, called eMOSS was officially launched . The patients are listed according to their blood group and states and enables all registered users nationwide to access the list of patients under their care and update their health status from time to time. The rank and position of each patient in the list is auto generated, based on the calculated duration of dialysis treatment entered into the national dialysis database (National Renal Registry) at the time of the initial notification to the Registry. Due to a few technical issues, the only criteria applicable in this system was the waiting time which means the longer a patient on dialysis, they are given priority to receive the kidney.

The current selection process is solely based on the ethical principle of justice (being fair), but not on utility (quality of being fair). Thus, the Malaysia Kidney Allocation System (MyKAS), was introduced to overcome this problem. This approach seeks to achieve the best use of donated organs, avoid futile transplant, promote patient access and promote efficient management of deceased donor kidney transplantation.

SPEAKERS ABSTRACTS

CONGRESS DAY 1

RECENT ADVANCES IN TRANSPLANTATION

Donation After Cardiac Death: Can We Do It?

Tengku Alini Binti Tengku Lih, Chairman, Tissue and Organ Procurement (TOP) Team, Unit Perolehan Organ Hospital (UPOH), Hospital Tuanku Jaa'far Seremban

Donation after cardiac death (DCD) is an increasingly common practice that can contribute to reducing the gap between the organ supply and organ demand for transplantation. There is a diversity among DCD programs practice internationally. If Malaysia plan to start the program there is an essential need to address multiple issues especially the ethical aspect of DCD in institutional DCD protocol and clinical practice.

MANAGEMENT OF END ORGAN DISEASE

Deceased Donor Management

Abdul Jabbar bin Ismail, Senior Medical Lecturer DU53, Fakulti Perubatan & Sains Kesihatan (FPSK) Universiti Malaysia Sabah

Donation after Brain Death present a unique condition in which, the ability of maintaining and optimizing organ function prior to surgery for organ procurement. However, it presents with its own challenges that may impede or disrupt the ability to optimize the organ function. Among major challenges includes the potential complex nature of presentation of the patient to the hospital such as polytrauma & massive hemorrhage, complicates further the initial management of maintaining organ function. In addition, uncertainty in direction of patient care prior to Brain Death Testing & Family counselling adds to dilemma on the intensity of treatment in patient with severe brain injury who is deem having poor prognosis at the onset. This lecture will discuss the challenges of optimizing the organ function prior to brain death testing, as well as explaining regarding pathological changes to normal physiology specifically induced by brain death, and evidence-based approach on Organ Donor Maintenance prior to surgical procurement.

HAEMATOLOGY

Who Should Get haploidentical HSCT - Indication of Haploidentical HSCT in Current Era

Bee Ping Chong, Consultant Hematologist, University Malaya Medical centre

Allogeneic Haematopoietic Stem Cell Transplantation (HCT) is still one of the best options to cure certain haematological diseases such as acute leukaemia, aplastic anaemia and myelodysplastic syndrome. A suitable donor is determined by human leucocyte antigen (HLA) compatibility and physical fitness. HLA Matched donor-recipient confers the lowest risk of GVHD and graft rejection. HLA matched sibling donor is probably the best choice, but only 25-30% of patients have such siblings. Many patients have to look for alternative donors which consist of matched unrelated donors, cord blood units or haploidentical family donors. Each alternative donor has its own advantages and disadvantages. This topic is focusing on the evidences on haploidentical transplantation. Selecting a most appropriate haploidentical donor for eligible patients who do not have a matched sibling donor will be briefly discussed at the later part of this talk. Finally, a conclusion will be made on which patient should get haploidentical HCT based on the evidences presented.

LIVER

Perioperative Care and Intraoperative Challenges in Liver Transplantation - The Anaesthetist Perspective

Loh Pui San, Senior Consultant Anaesthesiologist and Senior Lecturer., Head of Transplant Anaesthesia Unit for Renal and Liver Transplantation, Dept of Anaesthesiology & Intensive Care, University Malaya, Malaysia

Liver transplantation is a challenging surgery performed as a treatment of choice for end-stage liver disease or acute liver failure. The anaesthetic management can be complicated and challenging. A successful procedure requires strong teamwork and excellent understanding of the complex pathophysiology of liver failure and the effects on multi-systems. This lecture outlines the principles and aims in the perioperative period from preparatory stages to intraoperative care and postoperative management mainly for adult recipients. At the end, there will be an outline of potentially selecting suitable patients for fast-track transplant surgery.

KIDNEY

How do I Evaluate Potential Paediatric Recipients with Urological Anomalies

Susan Woo, Adult Urologist, Hospital Kuala Lumpur

Renal transplantation remains the best form of renal replacement in children with end-stage renal disease. Differences, however, exist between adults and children. Congenital urological diseases are the main cause of end stage renal failure in children. Urological evaluation is individualized to each patient depending on the type of primary disease. It is aimed at identifying structural and functional problems in the urinary tract that may require optimization prior to renal transplantation. Optimization is by medical and surgical treatment. Lower urinary tract dysfunction and the native kidneys are investigated extensively. The main modalities of investigation are radiological imaging and urodynamics studies.

Kidney Donor Nephrectomy: Open, Lap, Robotic. What, Why and Who?

Murali Sundram Mikaail Abdullah, Visiting Consultant Sunway Medical Centre, Hospital Kuala Lumpur, Queen Elizabeth

Open donor nephrectomy (ODN) was the standard technique for the first 40 yrs. of renal transplantation. It was performed via an extraperitoneal loin incision often times combined with resection of the 12th rib, which was the standard technique at that time for any type of kidney surgery. The kidneys lie posteriorly in the extraperitoneal space and this approach does not violate the intraabdominal cavity and so there is no danger of damage to intraabdominal organs. It was however associated with a longer hospital stay, prolonged convalescence period and time off from work, cosmetic issues and potential for development of hernias all of which were disincentives for live donation.

Laparoscopic donor nephrectomy (LDN) was introduced in 1995. This is an intraperitoneal approach which requires a pneumoperitoneal pressure of 12 mm Hg. There is a potential for injury to intraabdominal organs and the pneumoperitoneum has the potential to decrease renal blood flow. LDN requires special training and equipment with increased hospital costs.

LDN was superior to ODN in terms reduced morbidity, reduced analgesic requirement, shorter convalescence and time off work and this generated a lot of consumer enthusiasm. There was also an element of commercial promotion of individual transplant programmes that offered this new technique despite unresolved concerns of donor safety, technical complications and graft outcomes. So, although surgeons were very enthusiastic about LDN the nephrologist were understandably less so.

A 2007 review of 5 RCTs comparing LDN with ODN demonstrated level 1 evidence of superiority of LDN in reducing morbidity. LDN was associated with reduced analgesic requirements, increased warm ischaemia times (although without impact on graft function) and longer operative times. There was no difference in major complications and no difference in vascular thrombosis or ureteric complications seen in the early series of LDN. However, the majority of these trials involved young healthy donors with normal weight and left kidney donation with a single renal artery so these results cannot be extrapolated to all comers. The other issue was that because death and major complications occur so infrequently, safety had never been studied as an endpoint in these trials as the sample size would be too large.

Another review that looked at all studies from 1995 till 2006 reported 8 deaths and 15 graft losses from LDN. Deaths with LDN are largely due to catastrophic events related to securing of the vascular pedicle. The review concluded that live organ registries are needed to determine combined experiences of complications and conversion to ODN rather than reports from single institutions.

In response to the popularity of LDN, the open surgeons have modified their technique to develop a mini-incision donor nephrectomy (MIDN). This technique has greatly reduced the morbidity of the previous loin incision and is now widely offered in many centres as an alternative to LDN.

Different centres have different preferences as to the particular technique of donor nephrectomy based on the individual surgeon's or institution's preference. In the literature there is sufficient level I evidence to show that LDN is preferred over ODN for left donor nephrectomies. The open approach is still used for right sided donors, multiple renal arteries, abnormal renal anatomy and patients with previous abdominal surgeries.

Recurrence of Disease after Kidney Transplantation - Special Consideration in Management

Lim Soo Kun, Associate Professior & Senior Consultant Nephrologist, UMMC

Recurrent disease in a kidney transplant is defined as recurrence of the original cause of renal disease (primary or secondary) leading to ESKD. This is one of the common causes of kidney graft loss, in addition to acute or chronic rejections, infections and death with functioning grafts. Different kidney diseases have different rate of recurrence, and this comprises a heterogeneous group of predominantly glomerular and some tubulointerstitial and vascular lesions. Common glomerular diseases that have high risk of recurrence are focal segmental glomerulosclerosis (FSGS), membranous glomerulonephritis, IgA nephropathy, membranoproliferative glomerulonephritis (MPGN), C3 nephropathy. Conditions related to vascular disease include thrombotic microangiopathy (TMA), atypical haemolytic uremic syndrome (aHUS), ANCA-associated crescentic glomerulonephritis and antiphospholipid syndrome.

The role of nephrologists or transplant physicians in the management of recurrence disease starts from donor selection and risk assessment, effective immunosuppressive therapies, early diagnosis and proper treatment strategies. The manifestations of recurrence disease range from subclinical to clinically overt, acute, subacute, or chronic clinical presentations. A systematic examination of the renal graft biopsy with routine special stains for light microscopy (LM), a complete panel of immunofluorescence (IF) staining, and Electron Microscopy in some difficult cases, are essential in the definitive diagnosis of recurrence disease.

The speaker will discuss the practical aspects of management of recurrence disease in kidney transplantation by using few common case scenarios.

MANAGEMENT OF END ORGAN DISEASE

Who Should Get haploidentical HSCT - Indication of Haploidentical HSCT in Current Era

Bee Ping Chong, Consultant Hematologist, University Malaya Medical Centre

Allogeneic Haematopoietic Stem Cell Transplantation (HCT) is still one of the best options to cure certain haematological diseases such as acute leukaemia, aplastic anaemia and myelodysplastic syndrome. A suitable donor is determined by human leucocyte antigen (HLA) compatibility and physical fitness. HLA Matched donor-recipient confers the lowest risk of GVHD and graft rejection. HLA matched sibling donor is probably the best choice, but only 25-30% of patients have such siblings. Many patients have to look for alternative donors which consist of matched unrelated donors, cord blood units or haploidentical family donors. Each alternative donor has its own advantages and disadvantages. This topic is focusing on the evidences on haploidentical transplantation. Selecting a most appropriate haploidentical donor for eligible patients who do not have a matched sibling donor will be briefly discussed at the later part of this talk. Finally, a conclusion will be made on which patient should get haploidentical HCT based on the evidences presented.

SPEAKERS ABSTRACTS

CONGRESS DAY 2

LIVER

Tele-hepatology in Liver Transplantation

Tan Soek Siam, Senior Consultant Hepatologist, Selayang Hospital

Tele-medicine coined in 1970s , stands for : 'healing at a distance'. According to the WHO, there are 4 elements namely to provide clinical support, to overcome geographic barriers to connect individuals that are not in the same physical location, it involves various communication technologies, and to improve health outcome. The driving force for tele-medicine are the advancement and availability of mobile communication technologies with the expansion of wireless broadband technology, the escalating health epidemics and the shortage of physician and nursing. There are various types of tele-medicine. The use of telemedicine in Hepatology is well known starting with successful implementations in hepatitis C treatment in the era of interferon, virtual multi-disciplinary tumour boards for hepatocellular carcinoma and the management of patients with cirrhosis and the accompanying complications of cirrhosis. Tele-medicine has also been used in the field of liver transplantation as tele-evaluation, tele-monitoring post liver transplantation. Patients reported better satisfaction with tele-medicine. The recent COVID-19 pandemic has also increased its use and acceptance when physical clinics were rapidly converted or adapted to virtual clinics and telecommunications become routine daily personal or work related activities for most people. Leveraging telecommunication technology to adopt tele-hepatology could potentially benefit in terms of access, efficiency and equity in the field of liver transplantation.

KIDNEY

Tele-hepatology in Liver Transplantation

Tan Soek Siam, Senior Consultant Hepatologist, Selayang Hospital

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MANAGEMENT OF END ORGAN DISEASE

Curing Cancer with Stem Cell Transplantation

Azizan Sharif, Consultant Haematologist, Hospital Sultanah Aminah, Johor Bahru

Stem cell transplantation(SCT) is one of the many modalities available to treat cancer which include surgery, radiotherapy, chemotherapy and targeted therapy. Stem cell are unique cells that have the potential to differentiate into various cell types or divide indefinitely to produce other stem cells ie pluripotent. There are various types of stem cell present which include embryonic stem cells, adult stem cells, perinatal stem cells and mesenchymal stem cells. This lecture is focused on hematopoietic stem cell (HSCT) is a type of adult stem cell able to differentiate into all types of blood cells & immune cells. HSCT is a procedure in which a patient receives healthy stem cells to replace damaged stem cells. HSCT involves various steps including harvesting/stem cell mobilisation, conditioning chemotherapy, stem cell infusion and finally engraftment. There are 2 types of SCT namely autologous SCT (AutoSCT) whereby the patient's own stem cells are utilised and allogeneic SCT whereby a healthy donor stem cells are utilised. HSCT effect cure via 2 different mechanism namely myeloablation chemotherapy and immune reconstitution ie graft vs leukaemia (GvL) effect. Indications for AutoSCT include upfront AutoSCT with curative intent eg Mantle Cell Lymphoma is 1st compete remission CR1), consolidation therapy eg Myeloma and as salvage therapy eg Hodgkin Lymphoma in 2nd complete remission. AutoSCT is well tolerated with low Treatment Relative Mortality (<5%) and its main disadvantage is disease relapse/ recurrence. There are various types of AlloSCT depending on the degree of HLA type matching with the recipient namely Matched Related Donor (MRD), Matched Unrelated Donor (MUD), Mismatch Donor and Haplo SCT. HLA matching is closely related to the success of AlloSCT. MRD is also associated with the lowest risk of Graft Versus Host Disease (GvHD) which is a unique complication of AlloSCT. AlloSCT is curative in Very Severe Aplastic Anaemia (VSAA) and High risk Myelodysplastic Syndrome (MDS) and markedly improve the overall survival in most Acute Leukaemia. However, AlloSCT is associated with much higher TRM (10 – 30%) and risk of GvHD (10 – 50%).

Corneal Donation and Transplantation in Malaysia

Chandramalar T. Santhirathelagan, Consultant Ophthalmologist / Corneal Surgeon, Hospital Sungai Buloh

Successful corneal transplantation requires the impeccable art of facilitating corneal donation amongst cadaveric donors. Each stage is meticulously planned from identification of the potential donor to the act of tissue procurement and processing including the evaluation of its quality before determining its distribution and usage. The topic of corneal donation is difficult to broach to a grieving family and the ethical issues must be considered at every stage. It is also imperative to be aware of the potential risks before accepting a potential tissue donor and determining the feasibility of procuring the said tissue in order to preclude a situation where the tissue cannot be transplanted. The steps for effective enucleation to preserve the quality of donor corneal tissue will also be enumerated and the evaluation protocol to grade the tissue quality. This lecture will delineate the Malaysian experience in dealing with corneal donation and will include the various challenges we meet prior to acquiring corneal tissue.

CORNEA

Corneal Donation During The COVID-19 Pandemic

Chandramalar T. Santhirathelagan, Consultant Ophthalmologist / Corneal Surgeon, Hospital Sungai Buloh

Stem cell transplantation(SCT) is one of the many modalities available to treat cancer which include surgery, radiotherapy, chemotherapy and targeted therapy. Stem cell are unique cells that have the potential to differentiate into various cell types or divide indefinitely to produce other stem cells ie pluripotent. There are various types of stem cell present which include embryonic stem cells, adult stem cells, perinatal stem cells and mesenchymal stem cells. This lecture is focused on hematopoietic stem cell (HSCT) is a type of adult stem cell able to differentiate into all types of blood cells & immune cells. HSCT is a procedure in which a patient receives healthy stem cells to replace damaged stem cells. HSCT involves various steps including harvesting/stem cell mobilisation, conditioning chemotherapy, stem cell infusion and finally engraftment. There are 2 types of SCT namely autologous SCT (AutoSCT) whereby the patient's own stem cells are utilised and allogeneic SCT whereby a healthy donor stem cells are utilised. HSCT effect cure via 2 different mechanism namely myeloablation chemotherapy and immune reconstitution ie graft vs leukaemia (GvL) effect. Indications for AutoSCT include upfront AutoSCT with curative intent eg Mantle Cell Lymphoma is 1st compete remission CR1), consolidation therapy eg Myeloma and as salvage therapy eg Hodgkin Lymphoma in 2nd complete remission. AutoSCT is well tolerated with low Treatment Relative Mortality (<5%) and its main disadvantage is disease relapse/ recurrence. There are various types of AlloSCT depending on the degree of HLA type matching with the recipient namely Matched Related Donor (MRD), Matched Unrelated Donor (MUD), Mismatch Donor and Haplo SCT. HLA matching is closely related to the success of AlloSCT. MRD is also associated with the lowest risk of Graft Versus Host Disease (GvHD) which is a unique complication of AlloSCT. AlloSCT is curative in Very Severe Aplastic Anaemia (VSAA) and High risk Myelodysplastic Syndrome (MDS) and markedly improve the overall survival in most Acute Leukaemia. However, AlloSCT is associated with much higher TRM (10 – 30%) and risk of GvHD (10 – 50%).

Corneal Surgery in Keratoconus

Siti Nor Roha Daman Huri, Cornea Specialist and Consultant Ophthalmologist, Hospital Sungai Buloh

Keratoconus is a disease characterized by progressive thinning, bulging and distortion of cornea. Advanced cases usually present with loss of vision due to high irregular astigmatism. It has significant adverse effects not only on vision but also on quality of life. A majority of these cases require surgical intervention.

The main goal of treatment for keratoconus has changed over the last few years from that aiming to improve visual acuity with keratoplasty to a number of relatively new procedures focused on the prevention of disease progression or to restore/support contact lens tolerance.

This review provides an update on the current treatment modalities of cornea surgery available for the management of keratoconus.

Descemet's Stripping Automated Endothelial Keratoplasty (DSAEK)

Che Mahiran binti Che Daud, Cornea Consultant, Hospital Sungai Buloh

Descemet's stripping automated endothelial keratoplasty (DSAEK) is now the choice of surgery in corneal endothelial dysfunctions. In DSAEK, the diseased endothelium and Descemet's membrane (DM) are replaced with donor posterior lamella, such as endothelium, DM, and thin portion of posterior corneal stroma. Indications for DSAEK are Fuch's Endothelial Dystrophy (FED), Pseudophakic or Aphakic Bullous Keratopathy, Endothelial graft failure, Iridocorneal Endothelial Syndrome (ICE), Congenital Hereditary Endothelial Dystrophy (CHED). DSAEK has some obvious advantages, such as small incision surgery, sutureless attachment of the donor graft to the recipient cornea, minimizing induced astigmatism and accelerated visual recovery.

The most common complications include donor graft dislocation, pupillary block glaucoma, Primary Graft Failure, graft rejection, secondary glaucoma, and Infectious keratitis. However, most of these complications can be managed by medical or appropriate surgical means.

In conclusion, DSAEK is safe and effective treatment for endothelial disease of the cornea.

BONE

Long Bone Allografts in Orthopaedic Surgery

Prashant Narhari, Consultant Orthopaedic Oncology Surgeon in Penang General Hospital, KKM Hospital Pulau Pinang

Long bone allograft are an excellent armamantarium in orthopaedic oncology practice. After resection of long bones namely, humerus, tibia or femur, allograft from decesed donor can be used to reconstruct the bony defect.

Being biological, allograft is a very good option especially in paediatric cases whereby bone incooperation and union occurs quiet readily. Despite several potential complications such as non union, allograft fracture and infection, allograft gives promising outcome in properly selected cases. It does have several benefit compared to its alternative implants in being cost effective and having very good long term outcome.

Hospital Pulau Pinang, being one of the major Orthopaedic Oncology center in our country has 16 cases of long bone allograft done in the past 5 years.The lecture shares our experience and challenges in using long bone allograft in orthopaedic surgery especially orthopaedic oncology practice.

ORGAN DONATION

Development of Organ Donation Quality Management in China

Wenshi Jiang [1,2]
[1] *Shanxi Provincial Organ Procurement And Allocation Center, Taiyuan, China*
[2] *Intelligent Sharing for Life Science Institute, Shenzhen, China*

Background
The total number of deased organ donation (OD) exceed 5,000 in 2020 in China, accounting for 14.5% of the global deceased OD. Recently, the natiaonal health commission of P.R.C. has developed national strategies in ehancing the quality of organ procurment service & transplant patients safety. In this study, we attempt to construct a quality management system & the coresponding working network, of which combining the critical pathway of organ donation with the daily practice in China.

Methods
A voluntary study was launched at 7 OPOs in China with a total donation service area of 159.2 million in population.Questionnaires drafted based on the national quality criteria were used for diagnosis analysis at the first step. Key persons from the participating OPOs and donor hospitals (DH) were interviewed to identify and correct the areas for improvment. Secondly, a informatic platform was developed and implemented locally at 4 OPOs for organ donation performance monitoring continuously. The OPO quality reports have been generated every year based on the data collected by the quality system.

Results
The overall compliance rate to the quality standards was 69% for OPOs and 55% for ICUs being interviewed. The local quality system was established separately for OPO and DH. In total, 115 criteria (97 for OPO & 73 for DH). 26 quality indicators (26 for OPO and 18 DH) were developed to enable continuous improvement. As an example, by analyzing the data of Shanxi OPO, the number of OD of Shanxi OPO increased from 35 cases (PMP: 0.9) in 2015 to 126 donors (PMP: 3.6) in 2021, with an increase of 260%. The incresing trend remains in shanxi even under the COVID-19 pandanic, whlie the annual numuber of the country deceased in 2020.

Conclusions
At present, the development of organ donation & transplantation in China is undergoing a transition from fast growth in quantity and scale to promoting improvement in quality. Regonal/national guideline is essential for quality management in organ donation, while its implementation should be embeded by the use of imformatic system and AI technologies.

Counselling The Donor Family After Death of The Recipient Immediate Post Transplant

Sumana Navin, Independent Consultant - Organ Donation & Transplantation, MOHAN (Multi Organ Harvesting Aid Network) Foundation

Communicating the news of a loved one's demise and approaching families for organ donation is a critical aspect of deceased organ donation and transplantation. A team approach with the involvement of the donor coordinator is recommended. Sensitive and skilled communication is a must when breaking bad news, counselling families in different stages of grief, and offering the option of organ donation. Addressing family concerns with regard to organ donation and assisting them in balancing expectations with regard to recipients, post-transplant outcomes, and 'secondary loss' is paramount. Post donation care of families and support services need to be provided, especially in the light of media stories that compromise anonymity of donor families and recipients.

Practicing Telemedicine in Organ Donation: Efficiency in Coordination

To create the Era of Artificial Intelligence for organ donation and transplantation management

Wenshi Jiang [1,2]
[1] *Shanxi Provincial Organ Procurement And Allocation Center, Taiyuan, China*
[2] *Intelligent Sharing for Life Science Institute, Shenzhen, China*

Background

The power of Artificial Intelligence (AI) has been proved, especially in the COVID-19 pandemic. This study aims at building an AI solution to help enhance the efficiency and quality in organ donation and transplantation.

Methods

An intelligence platform was created to meet the needs from the daily practice of organ donation. This platform is functioning for procedures monitoring, staff tracking, data reporting , statistical analysis, education & information dissemination, professional network building and data storage for scientific research.

Results

Since launched in 4 OPOs, the number of potential donors reported has increased by 115%, and the utilization rate of organs has been increased from lower than 70% to 74%. Meanwhile, personal time consumption time and risks of exposed to COVID-19 were reduced while the number of organ donation has been remained. AI technologies have been applied to reduce the burden of manual input and to better improve the efficiency of the workflow, including:

1) GPS combined with 5G technology enable to collect the location in real tim so as to assign and track the current progresse.
2) Speech recognition is used to obtain the donor diagnosis and treatment information by speech processing.
3) OCR technology is used to read and input the patient's laboratory test reports.
4) Visualization technology is used to dynamically present the results of organ traceability and allocation.
5) Media communication tools were embedded where patient & organ assessment data can be shared safely.
6) E-Training tools & BLOG modules have been embedded into the platform.

Conclusions

The use of AI technologies to improve efficacy and safety during the organ donation procedures has been demonstrated by the positive results shown in the study.

MANAGEMENT OF END ORGAN DISEASE

Selection Criteria and Evaluation for Liver Transplantation

Noor Aliza Binti Abd Mutalib, Consultant Hepatologist, Hospital Kuala Lumpur

Liver transplantation (LT) is a life-saving surgery for persons with acute and chronic liver diseases. In Malaysia, the major disorders that may result in indication for liver transplantation include acute, acute on chronic liver failure, chronic liver disease with advanced cirrhosis, hepatocellular carcinoma (HCC), and liver-based metabolic defects. In recent years, an extension of indications has been observed, this include MELD-exception criteria liver related diseases and HCC beyond Milan Criteria.

Patients who should undergo for LT need to be assessed based on 3 principles. First it is iirreversible liver disease that is expected to be fatal without transplantation. This disease may be acute or chronic in nature. Secondly, they should have sufficient reserve to survive the operative and perioperative period. Thirdly, they should be expected to have significant survival and quality of life benefit from LT.

LT entails the physical and hemodynamic demands of a major surgery, a potentially protracted recovery period, the risks of chronic immunosuppression, and increased psychosocial stress. Thus, the evaluation process is designed to screen for patients who (1) are healthy enough to survive the operative and perioperative periods, (2) adherent with medical recommendations to ensure compliance with postoperative care including medications, (3) have a secure psychosocial support system and, (4) absence of absolute contraindications to LT. The transplant evaluation involves multidisciplinary expertise such as expert consultations from various specialities, extensive laboratory analysis, cardiopulmonary testing, malignancy screening, and a psychosocial assessment. There are few major practice guidelines (CPG) has been developed to assist physicians and other healthcare providers during the evaluation process of candidates for LT.

FREE PAPERS

Diagnostic Components of Sarcopenia in Kidney Transplant Recipients-prevalence and Associated Factors Study in a Single Center

Sh Ooi, Kp Ng, Sk Lim, Maisarah Binti Jalalonmuhali, Yw Lee
University Malaya Medical Center

Background
Chronic kidney disease (CKD) contributes to secondary sarcopenia which may be associated with adverse outcomes. Kidney transplantation restores the kidney function but its impact on sarcopenia remains uncertain. As sarcopenia is a potentially reversible condition, understanding contributing factors for the development of sarcopenia is important to allow proper intervention.

Objective
This study aimed to assess the prevalence and the predictors/associated factors of sarcopenia in kidney transplant recipients (KTRs).

Method
This is a cross-sectional study of stable KTRS at transplant clinic of University of Malaya. Consented patients will be subjected to the laboratory, questionnaire, and bio-impedance analysis evaluation. Sarcopenia was assessed based on the European Working Group on Sarcopenia in Older people (EWGSOP2) which include evaluation for presence of low appendicular skeletal muscle mass, low muscle strength, and/or low muscle performance.

Results
113 patients were recruited with male to female ratio of 62.8% (n=71) and 37.2% (n=42). 17 participants (15%) had probable sarcopenia but none had confirmed/ severe sarcopenia. 15 of KTRs were found to have low muscle strength and 13% (n=15) deemed to have low physical performance. KTRs with probable sarcopenia had longer kidney transplantation vintage, and significantly lower serum albumin, body mass index (BMI), skeletal muscle mass (SMM), phase angle of body compared to no sarcopenia. Univariate analysis revealed factors like old age (age ≥60 years old), skeletal muscle mass (SMM), arm circumferences, and phase angle of the body are predictors of probable sarcopenic state. In our study serum albumin level negatively correlate with sarcopenia and is found to be an independent predictor after adjusting to age. This indicates that nutrition markers eg, albumin may be useful in predicting outcome.

Conclusion
Sarcopenia is an established pathological entity in KTRs and its etiology may be multifactorial. Serum albumin level can be useful as a predictor for this aforementioned condition and potentially amenable for intervention.

Autologous Stem Cell Transplantation (ASCT) in Multiple Myeloma: A Retrospective Single Centre Analysis

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Hospital Pulau Pinang

Background
Multiple Myeloma (MM) is the 3rd commonest hematological malignancy. Induction with a triplet regimen followed by autologous stem cell transplantation (ASCT) has been the standard therapy for young patients (< 65 years).

Objective
We aim to evaluate long term outcome and survival for MM patients who underwent ASCT in Hospital Pulau Pinang.

Materials and Methods
We included a 13 years cohort of patients transplanted from 1st August 2008 to 31st July 2020. The data were analyzed using SPSS version 23.0. The variables assessed include demographics, MM subtypes, remission status pre-transplant and maintenance therapy post-transplant.

Result
A total of 50 patients (22 males, 28 females) were evaluated. The median age at transplant was 54.5 years (range 31.4 - 64.9 years). There were 23 Malay (46 %), 19 Chinese (38 %) and 8 Indian (16 %). 74% had IgG kappa subtype. 46% presented with ISS III, 36% ISS II and 10% ISS I. 58% of patients were transplanted with at least a very good partial response (VGPR) compared with 42% with partial response (PR). 62% of patients received maintenance post-ASCT. The median follow up was 55.3 months (range: 8.6 – 147.8 months). The 5 years and 10 years overall survival (OS) were 65.4% and 37.6 % respectively, whilst the 5 years and 10 years progression free survival (PFS) were 37.2% and 12.4% respectively. There was no transplant related mortality. Adjusted for gender, subtypes and remission status, International Staging System (ISS) III (aHR 5.71; 95% CI 1.69 -19.25) and older age during transplant (aHR 1.09; 95% CI 1.01-1.18) were independent risk factors for increased mortality. Similarly, both ISS III (aHR 2.54; 95% CI 1.04-6.22) and older age during transplant (aHR 1.09; 95% CI 1.01-1.17) were also significant predictors for post-ASCT relapse.

Conclusion
ASCT improves survival in patients with multiple myeloma and is safe in patients below 65 years. ISS III and older age at transplant are independent risk factor of OS and PFS.

Keywords
Multiple Myeloma(MM), Autologous Stem Cell Transplantation(ASCT), International Staging System (ISS)

Death with Graft Function after Kidney Transplantation: A Single Centre Experience

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[2] *Clinical Research Centre, Hospital Selayang*

Introduction

Death with graft function (DWGF) remains an important cause of graft loss among kidney transplant recipients (KTR). The survival of transplant recipients is significantly lower than age-matched control in the general population. This study aims to analyse the clinical characteristics and causes of DWGF in KTR at our centre.

Method

This is a retrospective study involving KTR followed up at our centre between January 2000 and December 2021. Patients were considered to have DWGF if death was not preceded by a return to dialysis or transplant nephrectomy. Patients who had DWGF during this period were recruited. Their clinical characteristics, presentation and cause of death were retrieved from the hospital information system and analyzed.

Results

Within the study period, 41 KTR died with a functioning graft. The majority were male (78%, n=32) with a mean age of 61.3 ± 12.8 years old. Primary diseases were diabetic kidney disease (41.4%, n=18), hypertension (17.1%, n=7), chronic glomerulonephritis (14.6%, n=6), autosomal dominant polycystic kidney disease (4.9%, n=2) and others (19.5%, n= 8). The median (IQR) time to death post-transplant was 144 (107- 174) months. Causes of death were sepsis/infection (39%), coronary artery disease (17%), malignancies (15%), liver disease (5%), others (7%) and rest unknown (17%). The frequency of death before one-year post-transplant was 4.8% (N=2) due to sepsis. Death due to malignancy was lowest within the first five years but increased thereafter. Overall patient survival at 1,5,10 and 15 years were 95.1%, 86.8%, 76.0% and 59.1% respectively.

Conclusion

Infection and cardiovascular disease were the main causes of DWGF during the overall post-transplantation period. Close monitoring for infection and cardiovascular disease is important to improve long-term outcomes.

A Retrospective Study on the Success Rate of Chemotherapy-based Stem Cell Mobilization in Combination with G-CSF in a National Transplant Centre in Malaysia

Tang ASO, Sharifah Shahnaz SAK, Selvaratnam V, Ho KW, Ong TC, Lau NS, Tan JTC, Tan SM
[2] *Hospital Ampang*

Introduction
High-dose chemotherapy combined with autologous stem cell transplantation(ASCT) has been widely adopted in the treatment of haematologic malignancies. Successful acquisition of peripheral blood stem cells(PBSC) is the premise of successful ASCT.

Objective
To study the baseline characteristics of patients and the outcome of stem cell mobilization and to identify the factors influencing haematopoietic stem cell mobilization.

Methods
The clinical data of 147 patients between January 2019 and December 2021 in Ampang Hospital were retrospectively analyzed. Autologous PBSC were mobilized using G-CSF during chemotherapy, and collected using a continuous flow cell separation instrument. Statistical analysis was conducted using SPSS (version 23.0; SPSS Inc.), and $p<0.05$ was considered to indicate a statistically significant difference.

Results
73 males and 74 females were included, with the median age of 42.0 years. The median CD34+ cell count collected from all patients was 3.36×106/kg. >2.0×106/kg CD34+ cells were obtained in 112 patients(76.2%), and >5.0×106/kg cells were successfully collected from 46 patients(31.3%). In 32 patients(21.8%), including 2 multiple myeloma(MM), 26lymphoma and 4leukaemia cases, mobilization failed. The success rates of CD34+ cell collection were 86.7% and 79.0%, and the ideal rates were 6.7% and 34.7% in MM and lymphoma, respectively. Out of 26(17.7%) who had failed prior G-CSF stem cell mobilization, 11 had successful chemo-mobilization. Almost all myeloma cases(87.5%) had successful mobilization using cyclophosphamide after prior G-CSF failure. DHAP was found to be the most successful salvage regimen in stem cell mobilization when compared to ICE and GDP ($p=0.016$, Kruskal-Wallis test). Multivariate analysis revealed that negative factors for PBSC mobilization were older age, multiple chemotherapies, being beyond the second-line of chemotherapy, prolonged administration of G-CSF and prior use of high dose methotrexate/cytarabine.

Conclusion
A prospective study with a larger cohort is warranted for further verification of the factors associated with successful stem cell mobilization for a more efficient and cost-effective ideal protocol.

SGLT2 Inhibitors Use in Kidney Transplant Patients - A Retrospective UMMC Experience

Abdul Rahim AA, Rozi NR, Jalalonmuhali M.
University Malaya Medical Center

Background
Kidney transplant (KT) patients have high CV risk factors, from the history of renal failure and its vascular complications to associated metabolic complications from the immunosuppressants. Emerging data suggests SGLT2 inhibitor (SGLT2-i) improves CV outcome, reduces Hba1c and preserves renal function.

Objective
To describe the demographic of patients receiving SGLT2-i among KT cohort in University Malaya Medical Centre (UMMC) and to evaluate its safety profile

Methods
This is a retrospective observational study conducted in UMMC. All KT patients under UMMC until December of 2021 were enrolled. Relevant information was retrieved from medical records and analysed using the SPSS.

Results
A total of 234 KT patients were identified and 27 patients (11.5%) were on SGLT2-i. Within SGLT2-i cohort, male predominates with 88.9%. By racial distribution, Chinese was predominant (57.7%), Malays (25.9%) then Indians (15.4%). The median age at start was 50 (youngest was 31; oldest was 68). The indication for SGLT2-i were mostly suboptimal diabetic control (70.4%) with associated proteinuria (14.8%) but 14.8% patients were only due to proteinuria. Medical history of DM was 92.6%, while prevalence of hypertension was 92% with concomitant RAS bloackade in 51.9%.
Mean baseline creatinine was 109.2umol/L while at 6 and 12 months respectively were 105 and 116umol/L. Mean baseline Hba1c was 8.2% (range; 6.1–12.9%), 6-month at 8% and 12-month at 7.7%, with strong statistical correlation. Mean baseline uPCR was 192mg/mmol, while at 6 and 12 months were 170 and 226mg/mmol respectively.
In term of safety profile, only one patient developed UTI (3.7%), while no occurrence of DKA. 4.8% patients developed allograft rejection.

Conclusion
SGLT2-i is used widely among KT patients in UMMC with relatively good safety profile. SGLT2-i was started at low level creatinine, and majority has either poorly controlled diabetes or in combination with proteinuria.

Impact of Delayed Graft Function and Outcome of Cadaveric Kidney Transplant: A Single-Centre Experience

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Introduction
Delayed graft function (DGF) is a predictor of poor long-term graft survival, but whether its effects are independent of rejection or higher serum creatinine (Scr) is controversial.

Method
Data from patients who underwent deceased donor kidney transplant (DDKT) in Hospital Selayang from 1st January 2019 till 31st December 2021 were evaluated retrospectively.

Results
In total, 42 patients of DDKT identified. Donors' profile showed mean age and creatinine was 32.9±9 years and 131.1±91.6umol/l respectively, with male 66.7% (n = 28) and 52.4% (n = 22) having AKI on procurement. Recipients' profiles showed females (54.8%, n = 23) with mean age and dialysis vintage was 38.3±8.7 years and 13.9±3.6 years, respectively. Median cold ischaemic time (CIT) was 12.3±3 hours and 38.1% (n = 16) had DGF. Mean time post KT to dialysis was 5.1±9.1 days. One recipient had acute graft loss. Biopsies performed reported 66.7% (n = 8) Acute tubular necrosis (ATN), 16.7% (n = 2) mix of ATN with acute rejection (AR) and AR alone respectively. Mean Scr 3 months post KT was 120.8±47.9umol/l. Incidence of DGF was higher when CIT >16 hours (8-12 hours: 33.3%; 12.1-16 hours: 37.5%; 16.1-20 hours : 60%) although statistically not significant (p = 0.44). AKI in donors on procurement also correlates with higher DGF (p = 0.029) DGF >14 days was significantly associated with inferior graft function with eGFR <60ml/min/1.73 m2 at 3rd month post KT (p = 0.011) and higher risk of ATN (p = 0.017) but not to AR (p = 0.257)

Conclusions
In this cohort, CIT and AKI in donor upon procurement associated with DGF. DGF showed significant short term inferior graft function from ATN. Longer study duration is suggested to provide evidence effect of DGF on long term graft function. Measures to reduce CIT and careful selection of donors would benefit in avoiding DGF.

Utilisation of Therapeutic Plasma Exchange in Treating Transplant-Associated Thrombotic Microangiopathy: A Single Centre Retrospective Cross-Sectional Cohort Study

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Objective
Transplant-associated thrombotic microangiopathy (TA-TMA) is an established complication of allogeneic haematopoietic stem cell transplantation (HSCT) that results in significant morbidity and mortality. Despite it being a recognised post-transplant sequelae, there are no well defined treatment algorithms to guide the management of this condition. The objectives of this study are to identify the clinical outcomes of allogeneic HSCT patients who have undergone therapeutic plasma exchange (TPE) for the treatment of TA-TMA, and to determine certain therapy related factors such as the median duration of treatment with TPE.

Method
The electronic medical records of all patients with TA-TMA in Ampang Hospital diagnosed over a 5 year period (January 2017 to December 2021) were reviewed. Collected data consisted of patients' demographics, clinical characteristics, therapeutic interventions and clinical outcomes.

Results
In this cohort, a total of 25 patients with TA-TMA were identified within the determined time frame. All patients diagnosed with TA-TMA were treated with TPE, alongside more well established management strategies such as the withdrawal of calcineurin inhibitors (CNIs). The median number of cycles of TPE administered is 6 cycles (range, 1 to 56 cycles). 19 of the 25 patients in this cohort eventually died, with TA-TMA being the direct cause of death for 13 of those cases.

Conclusion
There is a paucity of data regarding the use of TPE in the treatment of patients with TA-TMA, particularly amongst adult patients. This study sheds some light on the value of early initiation of TPE in this population of patients, and provides optimism that TPE represents a viable and useful treatment option in resource-limited settings with restricted access to novel therapeutic agents.

Correlation Between 24 Hour Urine Creatinine Clearance, Estimated GFR and Measured GFR with DTPA Renal Scan in Living Kidney Donors

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Objective
Accurate determination of GFR is crucial in living kidney donors to enable a safe selection of a kidney donor. Current guidelines do not recommend a donor with an estimated GFR less than 80 ml/min/1.73mÂ². There is however no clear consensus on the best mode of GFR measurement besides inulin clearance, which is considered the gold standard of measuring GFR. The aim of this study was to examine the correlation between estimated GFR, measured GFR and 24-hour urine creatinine clearance (24-hr CrCl) in living kidney donors.

Methods
This retrospective cohort study examined 50 potential living kidney donors whereby their estimated GFR was calculated using the CKD-Epi equation, measured GFR via Tc99 DTPA renal scan and creatinine clearance derived from 24-hour urine collection. GFR measured from the renal DTPA scan was used as reference for comparison of other calculated GFR.

Results
The mean age of these donors was 43.9Â±12.2 years and 65.3% were females. Mean measured GFR using renal DTPA scan was 106.6Â±16.3 ml/min/1.73mÂ² while the mean estimated GFR calculated from the CKD-Epi equation was 104.9Â±13.5 ml/min/1.73mÂ². Mean 24-hr CrCl was 108.6Â±20.7 ml/min/1.73mÂ². Although there is concordance between the modalities with renal DTPA (CKD-EPI eGFR : r=0.325, p=0.023, 24-hr CrCl: r=0.327, p=0.022), the correlation was moderate in strength.

Conclusion
Our study demonstrated significant correlation between estimated, measured GFR and 24-hr CrCl, albeit moderate in association. In situations where 24-hr CrCl is not available, CKD-EPI eGFR could be applied to estimate renal function among these patients. This finding could be utilised to then possibly rely on estimated GFR and renal DTPA measured GFR and obliviate the need for 24-hr CrCl in all potential donors as it is rather cumbersome with a wide room for error. However, 24-hr CrCl could be used as an adjunct in situations with discordance between estimated and renal DTPA measured GFR.

Mycobacterium Tuberculosis in Kidney Transplant Recipients

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Introduction

The incidence of Tuberculosis (TB) in kidney transplant recipients(KTR) is 0.5 to 6.5% in developed countries and up to 15.4% in endemic areas. This study is to describe the prevalence and clinical manifestations of TB in KTR.

Method

This is a retrospective analysis of KTR who were diagnosed with TB between 2000 to 2022 in Hospital Selayang from Transplant Database.

Results

Of the total 210 adult KTR under follow up, 7.1%(n=15) were diagnosed with TB during the study period. Eleven (73.3%) were males with mean age of 43.3±7.46 years. Majority at 53.3%(n=8) were from deceased donors.

Induction agents were Intravenous thymoglobulin (27%), IL2 inhibitors(27%) and unknown (46.7%). Maintenance immunosuppression were tacrolimus and mycophenolate mofetil (53.3%,n=8), cyclosporin and mycophenolate mofetil (20.0%,n=3) and others (26.7%,n=4). Five (33.3%) received pulse steroid for acute graft rejection. Median duration between transplantation and TB was 22(4-102) months , pulse therapy and infection was 5(0-15) months. Six (40%) developed TB within 6 months post-transplantation.

Major symptoms were fever (86.7%), cough (40%) and constitutional symptoms (26.7%). Diagnosis were made based on positive findings on bronchoalveolar lavage (33.3%,n=5), sputum (26.7%,n=4), HPE (13.3%,n=2), CSF sampling (6.7%,n=1) and by clinical diagnosis (26.7%,n=4). Extrapulmonary TB with pericardium (2/15), bone(2/15), lymph node(1/15), brain(1/15) involvement developed in 6 patients. Disseminated TB observed in 4 patients.

All patients received anti TB medications for median of 9(6-12) months. Four(26.67%) succumbed to TB with functioning graft and one (6.67%) returned to haemodialysis due to chronic allograft nephropathy.

Conclusion

TB remains endemic in our KTR population with high suspicion index in patients presenting with fever. Extensive investigation including bronchoscopy provides a higher yield of diagnosis in this group of cohort.

The use of Recombinant PTH Therapy in a Kidney Transplant Patient with Severe Hypocalcemia

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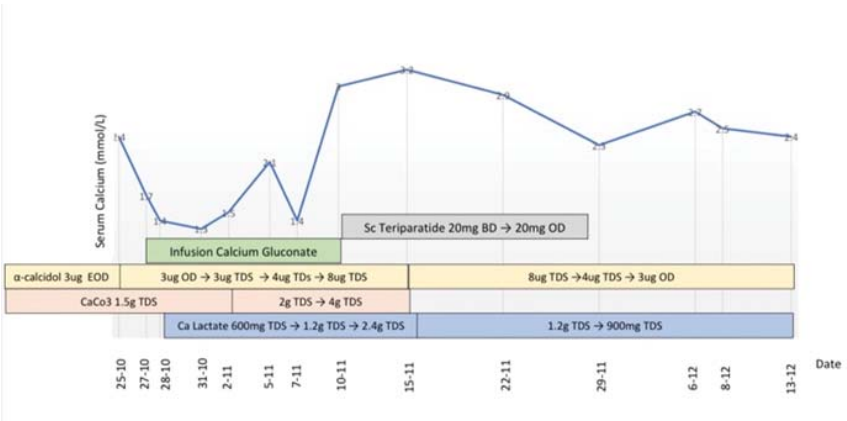
Abstract

Refractory hypocalcemia secondary to hypoparathyroidism is uncommon post-transplantation and presents a challenge in management. Herein we report a case of severe, hypocalcemia in a 30-year-old lady with end stage renal disease secondary to chronic glomerulonephritis on hemodialysis for 14 years, who underwent a deceased donor kidney transplant on 25/10/21. She was induced with Basiliximab, followed by tacrolimus, mycophenolate mofetil and steroids with immediate graft function post transplant. Prior to her transplant, she had undergone a total parathyroidectomy 9 years pre transplant for tertiary hyperparathyroidism. She was on alpha calcidol 3mcg EOD and Calcium carbonate 1.5g tds prior to transplantation.

Pre transplant calcium and phosphate levels were normal and her iPTH level on 14/9/21 was <5.5pg/ml. She developed hypocalcemia, day 1 post-transplant which dropped further on day 2 post-transplant despite increased doses of oral calcium supplements and oral vitamin D. She then developed hyperphosphataemia with symptomatic hypocalcemia. Her 24hour urine calcium was 2.08 mmol/day. Continuous intravenous calcium infusion was started on day 3 post-transplant but her calcium levels remained low requiring increased doses of oral, IV calcium infusion and oral vitamin D. S/C Teriparatide 20mg bd was started on 10/11/21, day 17 post-transplant. Her calcium levels improved significantly and rapidly. Her IV calcium infusion was stopped on day 1 post teriparatide and her calcium supplements and vitamin D requirements also reduced rapidly. She was discharged on 13/11/21 and was seen in the outpatient clinic. Her S/C Teriparatide dose was halved on 22/11/22 and subsequently stopped on 24/11/22. Her calcium supplements were tapered and stopped. She had no further episodes of hypocalcemia and her Vitamin D dose was reduced to 3mcg daily.

Teriparatide is a recombinant parathyroid hormone and is an effective and safe measure to manage severe, prolonged hypocalcemia secondary to severe hypoparathyroidism post total parathyroidectomy in a renal transplant patient.



Donor-derived Cell-free DNA Among Allograft Protocol Biopsy at University Malaya Medical Centre.

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Introduction
Donor-derived cell-free DNA (cfDNA) is a non-invasive test of allograft injury that is growing in the pipeline. Diagnosing active rejection in kidney transplant recipients (DART) group demonstrated that cfDNA more than 1% is significantly associated with rejection and the results were higher in patients with ABMR. While in a study divided into cfDNA ≥ 0.5% and < 0.5% among borderline and TCMR 1A demonstrated that cf-DNA ≥ 0.5% revealed declining in eGFR, formation of de novo HLA-DSA and persistent rejection.

Objective
To evaluate the value of cfDNA comparing no rejection, borderline, and TCMR in all transplant recipients undergoing protocol kidney allograft biopsy with stable renal function.

Methods
24 patients who underwent protocol allograft kidney biopsy at University Malaya Medical Centre were recruited. A blood sample for cfDNA was collected in the morning before the scheduled procedure. Patients' demographic data, induction and maintenance immunosuppression and biopsy reports were obtained from the electronic medical report.

Results
Mean age of our transplant cohort was 45.38 + 11.55 with 58.3% were male. Their mean duration post transplantation was 39.21 ± 54.02 months. Out of those 45.8% (11/24) had allograft biopsy reported as no rejection, 37.5% (9/24) borderline changes, 4.2% (1/24) chronic active TCMR, 8.3% (2/24) chronic active ABMR and 4.2% (1/24) interstitial nephritis. The median value of cfDNA were 0.17% (0.06,0.40) in no rejection, 0.17% (0.10,0.34) in borderline, 0.09% (0.09) in chronic active TCMR, 1.7% (1.30,2.10) in chronic active ABMR and 0.51% (0.51) in interstitial nephritis.

Conclusion
Our cohort demonstrated that the cfDNA results < 0.5% were consistent with allograft biopsy reported as no rejection or borderline changes. Higher cfDNA was reported in patients with a previous history of ABMR, and biopsy was reported as transplant glomerulopathy.

Keywords
Donor-derived cell-free DNA, cfDNA, allograft biopsy, kidney transplant

COVID-19 Antibody Titres Following Completion of Second Dose SARS-CoV-2 Vaccination Among the Kidney Transplant Recipients.

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Introduction:
Kidney transplant recipients are at higher risk of severe illness from COVID-19 infection. They are associated with poorer clinical outcomes, increased morbidity, and mortality. Previous studies reported a rapid loss of serum antibody levels and attenuated response to influenza vaccination among these patients.

Objective:
To evaluate the efficacy of SARS-CoV-2 vaccination among kidney transplant recipients (KTRs).

Methods:
This prospective cohort study recruits 190 patients from two tertiary hospitals in Malaysia, namely University Malaya Medical Centre (UMMC) and Hospital Kuala Lumpur (HKL). Among those, 138 are KTR, and 52 patients are healthy cohort. The blood samples were taken pre-vaccination (before the first dose) and 28 + 10 days after the scheduled second dose of SARS-CoV-2 vaccination. The antibody titers (pre-and post-vaccination) analysis was performed using Elecsys Anti-SARS-CoV-2 assay. The antibody responses were divided into no response (< 0.4 U/mL), low response (> 0.4 to 50 U/mL) and moderate to high response (> 50 U/mL).

Results:
Among 193 patients, the mean age of the healthy group was 46.54 ≥ 12.26 years old and 46.86 ≥ 10.76 years old in the KTRs group. Both groups were predominant male gender. At the baseline, 94.2% and 95.7% of the healthy cohort and KTRs have no antibody responses. 100% of the healthy cohort has moderate to high responses post-vaccination. In contrast, among KTRs, only 39.3% have moderate to high responses, 28.3% have low responses, and 47.8% have no responses. The mean antibody level in the healthy cohort was 249.49 ≥ 3.64 U/mL and 46.72 ≥ 86.70 U/mL ($p < 0.05$) among KTRs.

Conclusion:
KTRs were observed to have a much lower antibody response at 28 days post-vaccination.

Keywords:
COVID-19, antibody response, renal transplant recipients, immunosuppressed

Factors Associated with Low Antibody Responses Among Kidney Transplant Recipients.

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Introduction:
SARS-CoV-2 vaccination is one of the strategies for developing herd immunity and containing the virus for the more vulnerable outcome. Unfortunately, only 54% of kidney transplant recipients (KTRs) have detectable antibodies after vaccination completion. This makes them more susceptible to acquired severe COVID-19 infection.

Objective:
To evaluate the clinical and biochemical factors associated with lower efficacy of SARS-CoV-2 vaccination among KTRs.

Methods:
This prospective study recruited 138 KTRs from two tertiary hospitals in Malaysia, namely University Malaya Medical Centre (UMMC) and Hospital Kuala Lumpur (HKL). The blood samples were taken pre-vaccination (before the first dose) and 28 ± 10 days after the scheduled second dose of SARS-CoV-2 vaccination. The antibody titers (pre-and post-vaccination) analysis was performed using Elecsys Anti-SARS-CoV-2 assay. The KTRs were divided into two groups, absent or low antibody response (< 50 U/mL) and moderate to high response (> 50 U/mL).

Results:
The mean age of our 138 KTRs was 46.14 ± 12.64 and predominantly male. Their mean antibody level was 46.72 ± 86.70 U/mL. Among those only 23.9 % has moderate to a high antibody response. There was no statistically significant difference in patient demographic, serum creatinine, duration post-transplantation and tacrolimus level compared between the two groups' antibody responses of < 50 U/mL vs > 50 U/mL. However, the median lymphocyte count in low antibody response appears to be lower, 2.06 x 109/L IQR (1.45, 2.68) compared with moderate to high group 2.50 x 109/L IQR (2.03, 3.41) p value = 0.01. In contrast, the median Myfortic dose was higher in low antibody response 360 mg IQR (180, 540) vs 90 mg IQR (0, 360) p value = 0.004.

Conclusion:
Lower lymphocyte counts and higher myfortic dose were significant factors associated with low antibody response towards SARS-CoV-2 vaccination.

Keywords:
COVID-19, antibody response, renal transplant recipients, immunosuppressed

Reversing Myelofibrosis with Allogenic Stem Cell Transplant: Hospital Ampang Experience

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Objective
Patient with overt myelofibrosis (MF) has poor quality of life and short median overall survival. Allogenic stem cell transplant is the only curative option for MF, but with significant therapy related morbidity and mortality. In this retrospective study, we analyse the results of allogenic stem cell transplantation for the treatment of MF patients at Hospital Ampang.

Methods
We retrospectively analyse data from 23 patients with MF who received allogeneic stem cell transplantation from the haematology department of Hospital Ampang between the year 2008 to -2022.

Results
The median age of patient was 44-year-old. 16 patients have primary MF, remaining have post-essential thrombocytosis- MF(n=4) and post-polycythemia rubra vera-MF(n=3). JAK-2 mutation was the main driver mutation in 13 patients. All patients had matched sibling donor allogenic stem cell transplant, and received myeloablative conditioning, in which 17 of them had anti-thymocyte globulin. Ciclosporin/methotrexate was the preferred GVHD prophylaxis regime till year 2020, following that, ciclosporin/mycophenolate was in favour. The average stem cell dose was 4.83 X106/kg. Median neutrophil engraftment was 15 days (range 9-21 days), whereas median platelet engraftment was 14 days (range: 9-20days). The median follow up was 42 months, and median overall survival is not reached. 1 and 3-years overall survival was 90% and 87% respectively. 3 years disease free survival is 64%. Transplant related mortality at 100 day is 4.34%.

Conclusions
Our centre's overall outcome for allogenic stem cell transplant in MF is exceptionally good because of optimal patient selection, particularly full matched sibling transplant. Therefore, to provide an option of cure for every patient with MF, the use of alternative donor as stem cell source, coupled with good supportive care is feasible.

BK Virus Infection in Kidney Transplant Recipients: A Single Centre Experience

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Introduction
The incidence of BK viraemia following kidney transplant is estimated to be around 13%. However, the incidence on BK viraemia and BKV nephropathy (BKVN) in the local setting is unclear.

Objective
To define the characteristics and outcome of BK viraemia and BKVN among kidney transplant recipients in Hospital Kuala Lumpur.

Methods
All kidney transplants performed in year 2014-2020 and currently under HKL follow up were included. Demographic data, immunosuppressant characteristics, eGFR, and BKVN status were extracted. Mean values were calculated where applicable; two way repeated measures ANOVA test was used to analyzed eGFR decline.

Results
121 subjects were included for analysis, and 17 patients (8.2%) developed BK viraemia during a mean follow up of 52.6±27.9 months; 12 (70.6%) were living donor and 5 (29.4%) were deceased donor. The mean age at transplant was 41.7 (SD ±11.0), 58.9% were male. Five (29.4%) were ABO-incompatible. Thirteen (76.5%) had 4 or more mismatches. Basiliximab was the commonest induction agent used (82.3%).

The mean time of development of BK viraemia was 16.5 + 6.8 weeks after transplant. At diagnosis of BK viraemia, 16 (94.1%) patients were on combination of steroids, tacrolimus and mycophenolic acid (MPA) and 1 (5.9%) was on combination of steroid, Tacrolimus and everolimus. Six (35.3%) patients had rejections before the diagnosis of BK viraemia. MPA was reduced and subsequently stopped in all 16 patients. and converted to everolimus. Tacrolimus trough level was minimized in all patients (17/17) and discontinued in 3 (17.6%) patients. Eight (47.1%) patients developed BKVN and received intravenous immunoglobulin (IVIG) (47.1%), while 2 (11.8%) lost their grafts. All patients were alive at the time of analysis. Mean time to negative viral load was 14.7 months (SD ±9.7). Mean decline of eGFR was 5.3 (SD ±5.6) at diagnosis, 11.2 (SD ±9.9) at 3 months, 10.7 (SD ±9.1) at 6 months, 15.4 (SD ±11.7) at 12 months, 17.0 (SD ±13.5) at 24 months, and 23.0 (SD ±19.0) at 60 months. These eGFR declines were statistically significant.

Conclusion
The incidence of BK viraemia in our cohort was 8.2% and almost half of them developed BKVN. At mean follow up duration of 52.6 months, 11.8% of these patients lost their grafts. BK viraemia takes long time to clear, and has significant impact on graft function and survival.

Conversion to Everolimus in Kidney Transplant Recipients: Our Experience in Hospital Kuala Lumpur

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Objective
Standard immunosuppressive therapy post kidney transplantation includes steroids, calcineurin inhibitor (CNI) and mycophenolate acid. Mammalian target of rapamycin inhibitor (mTORi), Everolimus (EVR) is a viable alternative. This study aims to analyse the baseline characteristic and reason for conversion to EVR in Hospital Kuala Lumpur (HKL).

Methods
This retrospective registry-based study includes all kidney transplant recipients in HKL who are currently on EVR. Descriptive statistical study was carried out using SPSS 28.0 software.

Results
57 recipients are currently on EVR. Most are female (n=30, 52.6%) with a mean age of 43.98 Â± 12.86 years. Almost all (n=55, 96.5%) were converted from the conventional regime. Most (n=29, 50.8%) had dialysis vintage of less than 5 years. Majority underwent living related transplantation locally (n=37, 64.9%) while 12 (21.1%) had cadaveric transplantation locally and 8 (14.0%) were transplanted overseas. Most did not have diabetes before transplantation (n=52, 91.2%) but 49.1% (n=28) had hypertension. Common aetiology for renal failure includes IgA nephropathy (n=10, 17.5%), hypertension (n=7, 12.3%) and focal segmental glomerulosclerosis (n=7, 12.3%). Definitive diagnosis was not possible in 23 (40.4%) patients.
46 (80.7%) recipients received mycophenolate and tacrolimus combination prior to conversion. Reasons for conversion to EVR regimen included malignancy (n=16, 28.1%), Cytomegalovirus (CMV) infection (n=13, 22.8%) of whom 6 developed CMV disease, BK virus infection (n=12, 21.1%) of whom 7 had biopsy-proven BK nephropathy, and mycophenolate-related complications (n=5, 17.5%). Mean duration from transplant to conversion was 48.8 Â± 87.6 months. In 28 (49.1%) patients, it occurred in the first 6 months. Reported side effects include proteinuria (n=24, 42.1%) and oral ulcers (n=10, 17.5%). EVR had to be withheld in 2 patients. One had poor surgical wound healing while another had drug-induced pneumonitis.

Conclusion
Most conversion to EVR regimen was due to viral infection and malignancy. Although side effects were common, most were mild. Only a small number of cases required cessation of EVR.

Cinacalcet Use in Persistent Hyperparathyroidism in Post Renal Transplant recipient- A retrospective observational study in Hospital Kuala Lumpur

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Introduction
Hyperparathyroidism can persist after successful renal transplant and manifests as hypercalcemia and hypophosphatemia. Persistent hyperparathyroidism is associated with renal allograft loss, bone diseases, cardiovascular calcifications and mortality. Medical therapy by using cinacalcet in moderate hypercalcemia can reduce parathyroid level and ultimately calcium level.

Objective
To analyse the effect of cinacalcet on post transplant recipient with persistent hyperparathyroidism and correlate with renal allograft function.

Methodology
This is a retrospective observational study in Nephrology Department Hospital Kuala Lumpur targeting post renal transplant recipients who had cinacalcet started from year 2018-2021. Patients with hyperparathyroidism, hypercalcemia with cinacalcet prescribed were included. The trend of intact parathyroid hormone(iPTH), total calcium, phosphate, alkaline phosphatase (ALP) and creatinine trend were being observed and analysed from pre-cinacalcet initiation, 6 months and 12-months post initiation.

Results
A total of 16 patients fulfilled the inclusion criteria. There were 11 (69%) males and 5 (31%) females with mean age= 39.3. Majority had living related renal transplant=14 (87.5%) and 2 (12.5%) were cadaveric renal transplant with mean dialysis vintage of 6 years overall. The mean results of pre-cinacalcet initiation and post cinacalet initiation were compared. Pre-cinacalcet initiation results were iPTH=58.1 pmol/L, calcium= 2.50 (mmol/L), phosphate=1.73(mmol/L), ALP= 173 (U/L) whereby the 6-month post cinacalcet results were iPTH=13.1, calcium= 2.50, phosphate=0.79, ALP= 185 followed by 12-month post cinacalcet result of iPTH=10.8, calcium= 2.46, phosphate=0.90, ALP= 159. The mean creatinine and eGFR prior cinacalcet, 6-month and 12-month post initiation were 116 (66.4ml/min/1.73m3), 118 (65.6), and 126 (64.8).

Conclusion
In this study, it is observed that cinacalcet significantly reduced iPTH and phosphate by 6-month although the total calcium level did not differ much. The mean creatinine and eGFR which were stable suggest that hyperparathyroidism control plays a role in maintaining long term renal allograft survival.

Clinical Outcome of Calcineurin Inhibitors-free Maintenance Immunosuppressant Regime in Kidney Transplantation – A single Center Experience

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Objective
Kidney transplantation is the best kidney replacement therapy for end stage kidney disease patient although there is a significantrate of graft loss at 3-5% annually. Introduction of calcineurin inhibitor (CNI) with mycophenolate mofetil has become the standard of care to achieve excellent graft survival, however, CNI toxicity and chronic allograft failure remains considerable concern for long term graft loss. Hence, we wish to assess the clinical outcome of CNI-free regime in kidney transplantation in our centre.

Methodology
A retrospective cohort study involved all kidney transplant patients who were followed up in our centre from Jan 2012- Dec 2021 who were on CNI-free regime. Their demographic data, indication of switching to CNI-free regime, graft function and clinical outcome were collected and analysed. The descriptive analysis was done by using SPSS version 25.

Result
A total of 10 patients were collected and analysed. 8 were male gender with mean age of 55.4-year-old (±4.51). Most of the patient had unknown primary (n=6). Majority of them were cadaveric transplant (n=9). There were two types of CNI-free maintenance immunosuppressant regime used which were everolimus ± prednisolone (n=8), and mycophenolate mofetil + everolimus ± prednisolone (n=2). CNI-free regime was initiated at mean of 9.7 ± 2.0 years post transplant and continues with average of 3.7years (±1.1). The indication to change to CNI-free regime were solid organ malignancy (n=4), CNI toxicity (n=3), and BK nephropathy (n=3). The mean baseline eGFR at converting regime was 53.75mls/min/1.73m2 (±7.26) with an average dropping in eGFR 2.5mls/min/1.73m2 (±7.85) annually. Four of them passed away due to malignancy with a functioning graft. Cellular rejection occurred in one patient and required restarting low dose of CNI after one year duration of CNI-free regime.

Conclusion
This cohort study showed that CNI-free maintenance immunosuppressant regime to be a safe regime with low risk of rejection.

A Retrospective Descriptive Study of ABO-incompatible Kidney Transplantation in Perspective of Cost: HKL Experience

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Introduction

ABO-incompatible (ABOi) kidney transplantation (KT) is one treatment option for patients with End-stage Kidney Disease (ESKD) in Malaysia, due to low deceased donor donation rate and we have not embarked on Paired Kidney Transplant Program. Advanced in desensitization techniques, such as plasmapheresis (PEX), Double Filtration Plasmapheresis (DFPP), immunoadsorption (IA), intravenous immunoglobulin (IVIg) and Rituximab (Ritux) have made ABOi KT promising. However, the cost and health outcomes have not been assessed.

Methodology

This retrospective descriptive study was conducted by collecting data from all ABOi KT in the Nephrology department, from 1st July 2012 to 1st March 2022, in Hospital Kuala Lumpur (HKL). Variables collected include date of transplantation, relationship between the pair, blood group of the donor and recipient, the first anti-A or Anti-B titre and the titre prior to operation, number of PEX or DPFF, Ritux and IA usage, rejection episode and infection rate.

Results

A total of thirty-eight pairs of Living ABOi KT were performed during the period of study. Eighteen pairs were living related while twenty pairs were living emotionally related. Twenty-seven recipients have undergone desensitization, while ten recipients exempted from desensitization with first and pre-operation isoagglutinin titre < 1:16, one pair data unavailable. The total cost of desensitization was RM907,104, consisted of nineteen recipients received Ritux (RM64,714), eleven recipients undergone pre-operation PEX (RM30,690), six recipients received IA treatment pre-operationally (RM79,080)., twenty-seven recipients received pre-transplant DFPP with median of 3 sessions (range 1-5), with total of ninety-four sessions done in the period of the study, and followed by total of 414 vials of IVIg usage (3g/vial) (RM732,620). However, there were 2 cases of hyperacute rejection and 1 death due to intra-abdominal bleed post operation.

Discussion

ABOi Kidney Transplant is cost-favourable in Malaysia, it results in better quality of life in ESKD patients compared to other modalities of renal replacement therapy.

Keywords

ABOi kidney transplant, desensitization, cost, ESKD

Incidence, Risk Factors, and Outcome of Cytomegalovirus Infection in Kidney Transplant Recipients: A Single-center Experience

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Objective
Cytomegalovirus (CMV) infection is an important cause of allograft failure and death among kidney transplant recipients (KTR). We describe the incidence, risk factors, and outcome of CMV infection among KTR in Hospital Selayang.

Method
This is a retrospective study of adult KTR who underwent transplantation from 1st January 2019 till 31st December 2021. CMV infection is defined by evidence of viral replication in body fluids or tissues, and CMV disease when they have symptoms. Results were analyzed with SPSS version 25.

Results
A total of 85 recipients underwent kidney transplantation during the study period. Mean recipients' age was 37.2±8.9 years, predominated by females 55.3% (n=47), and chronic glomerulonephritis (36.5%) as primary renal disease. The majority were CMV-seropositive recipients (R+) from seropositive donors (D+) (84.7%), and deceased donors contributed 55.3%(n=47). The induction immunosuppression (IS) was essentially with intravenous (IV) Anti-Thymocyte-Globulin (ATG) (48.2%) or Basiliximab (51.8%), and 92.9% started on mycophenolate sodium, tacrolimus, and prednisolone as maintenance IS regimen.

CMV prophylaxis was adopted for 47.1% of recipients given moderate risk (D+R+ or received IV ATG). Six recipients had CMV infection (7%), with 66.6% (n=4) diagnosed between 6-12 months post-transplantation. Graft dysfunction (GD) was the main presentation in 66.6% of patients, followed by diarrhea (50%), fever (33.3%), and leukopenia (16.7%). On multivariate analysis, leukopenia (OR 2.23;p=0.019) and GD (OR 17.56;p=0.012) were shown to be significant risk factors for CMV infection.

All patients were treated successfully with IV Ganciclovir or oral Valganciclovir equally with mean duration of 43.1±27 days, and 83.3% (n=5) had changes in maintenance IS to everolimus, tacrolimus, and prednisolone. Biopsy proven acute rejection developed in 33.3% (n=2) of patients during the treatment period.

Conclusion
The incidence of CMV infection in our center was 7% with no fatality reported. Leukopenia and GD were significant risk factors in our cohort.

COVID-19 Infection and Vaccination in Kidney Transplant Recipients in Hospital Kuala Lumpur

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Introduction

Vaccination had been proven effective in preventing serious infectious disease. Mortality rate for kidney transplant recipients was 20% if contracting COVID-19 infection prior to vaccination.

Methodology

This is a single center retrospective observational study. All kidney transplant recipients diagnosed with COVID-19 infection from 15th December 2020 till 15th March 2022 were recruited. Demographic, clinical data and outcome were collected and analysed using SPSS version 20.

Results

Out of 381 kidney transplant recipients under follow up, 89 (23.4%) had COVID-19 infection. Majority were male [n=54 (60.7%)]. Mean age was 39.1±12.7. Time from transplantation to COVID-19 infection was 98.6±93 months (0-333 months). Twenty-two (24.7%) has diabetes mellitus, forty-seven (52.8%) with hypertension, thirty-one (34.8%) were obese and five (5.6%) has cardiovascular disease. Eighty-six (96.6%) were on steroid, and calcineurin inhibitors, seventy-two (80.9%) on antimetabolites and twelve (13.5%) on mammalian target of rapamycin inhibitors.

Sixteen (18%) were not vaccinated, eight (9%) patients received only one dose, sixty-five (73%) completed 2 doses of COVID-19 vaccination, with forty (44.9%) taken third dose, at diagnosis of COVID-19. Fifty-six (62.9%) vaccinated patients were symptomatic compare to unvaccinated patients [14(15.7%), p=0.004]. Fever, cough, rhinorrhea and sore throat were the commonest. Thirty-seven (41.6%) were managed as outpatient, all vaccinated (p<0.001), whereas all unvaccinated were hospitalized.

Seventeen (19.1%) required supplemental oxygen, seven (7.9%) unvaccinated (p=0.244). Sixty patients had COVID pneumonia category 1-2, forty-eight (53.9%) vaccinated (p=0.033). Three (3.4%) patients required mechanical ventilation, two unvaccinated (p=0.36). Three unvaccinated (3.4%) and four (4.5%) vaccinated patients were admitted to intensive care unit (p=0.587). Fourteen patients (15.7%) developed acute kidney injury, seven (7.9%) unvaccinated (p=0.074). Four (4.5%) patients required kidney replacement therapy, two unvaccinated (p=0.627). There were three (3.4%) mortality, all unvaccinated (p=0.025).

Conclusion

COVID-19 vaccination reduced morbidity and mortality in kidney transplant recipients. Those vaccinated had mild disease and can be managed as outpatient.

Utility of Cytomegalovirus (CMV) QuantiFERON Enzyme Linked Immunosorbent Assay (ELISA) in Predicting CMV Infection in Kidney Transplant Recipients

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Introduction
CMV infection remains a major infective complication among kidney transplant recipients despite advances in diagnostic and monitoring modalities, potentially leading to invasive disease, acute graft rejection and graft loss. We aim to analyse the utility of CMV quantiFERON assay in predicting CMV infection in the first 100 days following kidney transplantation.

Methods
This prospective study included 23 patients who underwent kidney transplantation in Hospital Kuala Lumpur from March 2021 to January 2022 who had a minimum of 3 months follow up at the time of analysis. CMV quantiFERON ELISA was taken prior to the transplantation procedure. Clinical data were extracted from medical records and analysed using SPSS version 26.

Results
The median age in this study was 30 years (interquartile range, IQR 27-35 years) and 12 (52%) were female. The commonest ethnicity in this study were Malay followed by Indian, with 14 (61%) and 5 patients (22%) respectively. Five (22%) had diabetes and 21 (91%) underwent living related kidney transplantation. Based on CMV serology at baseline, 18 patients (78%) had moderate CMV infective risk whereas 2 patients had high CMV infective risk and were given valganciclovir prophylaxis. Among the 17 recipients with seropositive CMV (R+) status, 3 (18%) yielded reactive quantiFERON assay results and none among the 5 seronegative (R-) recipients (p=0.57). 5 R+ patients developed CMV infection compared to 1 R- patient (p=1.00). There were no CMV infections among the 3 patients with reactive CMV quantiFERON assay compared to 4 cases among 16 patients (25%) who had nonreactive assay (p=0.57). There was no acute graft rejection or loss reported in this study. Limitations of this study include a small sample size and short follow up period.

Conclusion
Higher numbers of CMV infection (25%) were noted in patients with non-reactive quantiFERON assays compared to reactive assays but were not statistically significant due to the small sample size. Further data is required to determine the clinical utility of CMV quantiFERON in predicting CMV infection in the first 100 days of kidney transplant.

Post-renal Transplant Complications in Hospital Kuala Lumpur (HKL) from 2017-2021

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Introduction

Renal transplant is the best treatment choice for End stage kidney disease (ESKD) patients as it improved patient's quality of life and mortality risk as compared to dialysis. Post-renal transplant complications are crucial experiences for every center to refine and improve their patient's care.

Objective

To review risk factors, surgical and non-surgical complications of renal transplant patients and their outcomes in HKL.

Methods

Retrospective descriptive study that included all renal transplant patients from 2017-2021 in HKL.

Results

A total of 229 patients were included. Among those renal transplant patients 131(57.2%) were male, 155 (67.7%) were malay with the mean age of 33.4 years old (9-60). Prior to renal transplant, the unknown primary disease were 103 (45.2%), 153 (66.8%) were on hemodialysis with the median dialysis vintage of 3 years(1-8).

Renal transplants that were done were 180 (78.6%) living donor and 49 (21.4%) deceased donor, ABO-compatible renal transplant were 196 (87.1%) with the median cold ischemic time being 1.87 hours (1.17-3.50). Post-operatively, immediate graft function were 188 (82.8%). One hundred and ninety five (90.3%) were given Basiliximab as induction agents. Maintenance agents that were given are Tacrolimus (225, 100%), Mycophenolate mofetil (161, 72.5%), Mycophenolate sodium (36, 16.2%), MTOR kinase inhibitor (30, 13.3%) and low dose Prednisolone.

Complications post-renal transplant were surgical (70, 32%) and non-surgical (65, 28.9%). Outcomes for our renal transplant patients were alive (221, 97.8%) with a functioning renal graft (213, 94.7%). There was no significant association between types of renal transplant with surgical complications (P= 0.16) and non-surgical complications (P= 0.96).

Conclusion

Surgical and non-surgical complications in HKL were comparable with other renal transplant centers. Patients' and renal grafts survival were favourable, being 97.8% and 94.7%.

Neither Fish, Flesh, nor Good Red Herring: A Case Report on Cutaneous Mycobacterium Marinum Infection in a Renal Transplant Recipient

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Introduction

Mycobacterium marinum is a non-tuberculous mycobacterium that causes tuberculosis-like illness in fish and it can infect humans when damaged skin is exposed to a contaminated aqueous environment. Clinical manifestation in renal transplant recipients may be atypical and deserve aggressive investigations for diagnosis.

Methodology

A retrospective and observational case study.

Results

We report a 63-year-old male transplant recipient who presented with non-healing, recurrent cutaneous infection. He had a background history of End stage Kidney Disease due to Focal Segmental Glomerular Sclerosis and underwent commercial kidney transplant in 1994. His immunosuppressant consisted of prednisolone, azathioprine and tacrolimus initially, however azathioprine was stopped due to recurrent skin infection. His creatinine level fluctuated between 140 umol/L to 240 umol/L due to numerous episodes of acute kidney injury secondary to multifactorial causes. He presented in December 2020 with scrotal abscess and bilateral thigh collection. He underwent orchidectomy and was treated with antibiotics. Cultures were negative and HPE findings consistent with testicular abscess. Unfortunately, his treatment was prematurely halted as he requested for discharge. In March 2021, he presented again with bilateral lower limb swelling for three weeks. There were multiple painful red violaceous, well circumscribed lesion over his bilateral lower extremities and ultrasound revealed multiple subcutaneous collection. He was treated with antibiotics with no marked improvement. Unfortunately, the work up was interrupted as he diagnosed with Covid 19. We proceeded with skin biopsy in May 2021 which revealed granulomatous inflammation with numerous acid fast bacili which was consistent with cutaneous mycobacterium infection. Upon commencement of anti-tuberculous treatment, he developed multiple adverse reaction with deranged renal profile that required treatment readjustment. During clinic review, we noticed that the lesions were healing well and we planned to complete treatment for a total duration of 12 months.

Conclusion

Post renal transplant infection is common and rare infection related should be identified. The delay in diagnosis and treatment rendered should be avoided to avoid serious complications.

Retrospective Study On Malignancy Post Kidney Transplant In Hospital Kuala Lumpur

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Objective
The objective is to evaluate demographic data on malignancy post kidney transplant and its associated factors

Methods
This is retrospective cross sectional study. The data collected from patientsâ?? record. The data analysis using SPSS version 26.0.

Results
There were 24 (6.1%) out of 394 kidney transplant patients had been diagnosed to have malignancy post transplant. Their mean age was 56 years old, 7 (29.2%) are males and 17 (70.8%) are females. 15 patients (62.5%) were Chinese, 6 patients (25.0%) Malay, Indian 2 patients (8.3%) and 1 patient Cambodian (4.2%). The primary disease were hypertension 25.0% and unknown etiology 25.0%, others include IgA nephropathy, DM, chronic glomerulonephitis, lupus nephritis, reflux nephropathy and congenital kidney disease. 12 patients (50%) had preemptive transplants. The mean dialysis vintage for other 12 patients were 3 years. 9 patients (37.5%) had received living related kidney, 3 patients (12.5%) cadaveric kidney and 12 patients (50.0%) commercial transplants. The mean onset of malignancy was 15 years post transplant. Skin cancer and post transplant lymphoproliferative disease contribute 20.8% respectively, followed by breast, cervical, colon, prostate, thyroid cancer and subependymoma of 4th ventricle. Their immunosuppression were prednisolone, mycophenolic acid and tacrolimus or cyclosporine, mostly substitute to everolimus post malignancy. All patients still survived, only 1 patient (4.2%) had impaired graft function due to the malignancy. 37.5% had cured from the cancer, 54.2% had stable cancer and 2 patients (8.3%) had recurrence cancer. There are no significant association between race, dialysis vintage, type of transplant, duration of transplant and type of immunosuppression with malignancy post kidney transplant.

Conclusion
Malignancy is important outcome among post kidney transplant patients

An Early Cytomegalovirus Nephritis in Low Dose Thymoglobulin Induction in Cytomegalovirus Positive Kidney Transplant Recipient In Preemptive Therapy

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Introduction

The use of anti-thymocyte globulin (ATG) therapy is one of the risk factors for developing cytomegalovirus (CMV) disease. However there is no universal recommendations for CMV seropositive recipients who are undergoing low dose ATG induction treatment (R+/ ATG KTR) that use of universal prophylaxis over pre-emptive therapy in CMV-seropositive recipients receiving a kidney from a CMV-seropositive donor (D+R+). We present a case of early CMV nephritis in D+R+ recipient within 30 days post-transplantation by using pre-emptive therapy.

Case description

A Fifty-one year old man with end stage kidney disease (ESKD) due to diabetes mellitus(DM) underwent living-related ABO compatible kidney transplantation with normal immunological risk and intermediate CMV risk. He received early steroid withdrawal with low dose ATG as induction with the dose of 3.2mg/kg for total 3 days. He was discharged well at day 5 post-transplantation with Mycophenolate mofetil (MMF) 1g bd and tacrolimus with creatinine level of 101 mmol/L.The CMV viral load was monitored every 2 weeks.

He presented with hypoosmolar hyponatremia at D10 post-transplantation with a Sodium level of (Na) 122mmol/L and creatinine of 167mmol/L, associated with epigastric discomfort and vomiting. He responded well to intravenous antibiotic and drips with creatinine of 135mmol/L. At D18 post-transplantation, he was admitted again due to elevation of creatinine up to 225mmol/L without any signs or symptoms of infection or gastrointestinal (GI) loss. Allograft biopsy was done at D20, showed features of acute tubulointerstitial inflammation/nephritis with foci of suspicious viral cytopathic changes accompanied by intraluminal and peritubular neutrophilic infiltrates. Immunohistochemistry for CMV was positive. The CMV PCR at D21 showed 2229 IU/ml. The diagnosis of CMV nephritis was made. The oral valganciclovir was started and his kidney function had improved and back to baseline.

Discussion

CMV infection usually occurs between 30 and 90 days after kidney transplantation. Early CMV nephritis is rare, however it is vital to keep an index of suspicion in high risk group and monitor CMV viral load early in preemptive approach in order to reduce the incidence.

Duration of Workup for Living/Spousal Related Kidney Transplant - A Single Centre Experience From 2015 to 2020

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Objective
Kidney transplantion is the best option of KRT as it provides good quality of life and improves survival. Living kidney transplantation has the advantage over cadaveric kidney transplantation in many aspects, one of which includes the fact that the kidney recipient will not have to wait long to be transplanted compared to cadaveric kidney recipients. Many factors influence the duration from initiation of kidney transplant workup to the actual kidney transplantation itself. The objective of this study is to analyse the duration of time needed for renal transplantation to be conducted at Hospital Kuala Lumpur (HKL).

Methods
This is a retrospective study involving 157 pairs of kidney donors and recipients who have been transplanted from 2015 to 2020. The pairs were divided into two groups – those who initiated their transplant workup at HKL (HKL group) and those who were referred from outside centres (non-HKL group). Duration from first encounter with Kidney Transplant Unit Hospital Kuala Lumpur until the time they were transplanted were recorded as waiting time.

Results
Out of 157 living/spousal related kidney transplant carried out in HKL from 2015 to 2020, 52 (33.1%) pairs initiated their transplant at HKL while 105 pairs (66.9%) were from other centres. The median waiting time for all these pairs were 475 days. The HKL group had a median of 478 days while the non-HKL group had a median of 474 days. For the HKL group, the shortest waiting time was 151 days and the longest was 1846 days. In the non-HKL group, the shortest waiting time was 31 days and the longest was 1569 days.

Conclusion
There were a lot of factors that influenced the time from starting transplant workup to the actual transplantation itself, and could be due to donor or recipient-related issues, resources of the centres working them up, as well as the transplant centre itself. These time-consuming factors need to be identified and remedied to ensure shorter waiting time that can improve outcome of kidney transplant recipients in the long run.

A Case Series of Malignancy in Post Kidney Transplantation: A single Centre Experience

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Introduction
The cumulative incidence of malignancy in solid organ transplant was reported to be 11-15% and it is the commonest cause of mortality.

Objective
The aimed was to review the incidence of malignancy after kidney transplantation, patients' characteristics with their risk factors and its outcome.
Methods: A retrospective analysis of all renal transplant recipients at our institution over the last twenty years (2002-2022). We reviewed the patient's characteristics, malignancy types, immunosuppression regimen and risk factors and their outcome.

Results
Malignancy occurred in eight out of 69 patients exclusively affecting male patients. The commonest was post-transplant lymphoproliferative disorder (PTLD) (50%) followed by nasopharyngeal carcinoma (NPC) (25%) whilst squamous cell carcinoma of the skin and colorectal carcinoma occurred in 1 patient each respectively. Most of the PTLD was incidentally diagnosed from transplant biopsy for worsening renal function while one patient was diagnosed through biopsy of the enlarged submandibular lymph node. PTLD occurred at younger age and majority within 18 months post transplantation. Two patients had NPC not long after transplantation prompting possibilities of preexisting malignancy that was probably undetected. Only one patient developed skin squamous cell carcinoma despite its being the most reported malignancy in post solid organ transplant. Both patients with skin and colorectal cancer was treated surgically, but unfortunately recurrence occurred in the colorectal cancer. PTLD patients were all treated with reduction of immunosuppression with addition of systemic chemotherapy in patients with systemic involvement. Majority of the patients passed away due to the disease or its complications.

Conclusion
Our incidence of malignancy after renal transplant were comparable to other centers however the type of cancer differed probably due to different risk factors reflecting the variation that might impact the different strategies in post-transplant malignancy surveillance.

Outcome of BK Viraemia Among Kidney Transplant Recipients. A single Centre Experience.

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Objective
To study the treatment outcome of BK viraemia among the kidney transplant recipients at Penang General Hospital.

Methods
All kidney transplant recipients who had routine BK virus load monitoring post transplant were included in this study. Only patients who were followed up for at least one year were included. Data were collected retrospectively by reviewing clinical notes.

Results
A total of 14 patients received kidney transplant between January 2020 and April 2021. Three out of these 14 (21.4%) kidney transplant recepients developed BK viraemia. The mean age was 34 + 11.6 years old. Two patients were living related transplant recepients and one patient received cadaveric kidney transplant. The BK viraemia was detected at a mean of 3.3 + 1.5 months post transplant. Two patients were on Tacrolimus and Mycophenolic mofetil combination while one patient were on Tacrolimus and everolimus combination when BK viraemia was detected. Two patients responded to reduction of immunosuppresants alone with viral load less than 800 cpoies/ml while one patient required reduction of immunosuppresants and 3 courses of IVIG 1g/kg with a latest BK viraemia of 18000 copies/ml (98% reduction from peak level). The mean estimated glomerular filtration rate at diagnosis of BK viraemia was 62.8 + 11.8 mL/min/1.73 m^2 and 69.6 + 14.3 mL/min/1.73 m^2 at last follow up. One patient had renal graft biopsy done and there was no feature of rejection.

Conclusion
BK viraemia was detected in 21.4% of the kidney transplanted patients followed up at our center. This underscores the importance of routine screening for BK viraemia post transplant. Reduction of immunosuppressant alone or in combination with IVIG is effective in the management of BK viraemia following kidney transplant.

A Case Of Post Covid-19 Myositis In A Kidney Transplant Recipient

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Introduction

COVID-19 infection typically presents with acute febrile syndromes with predominant respiratory symptoms. However there were increasing reports on non-respiratory presentations/ complications such as hepatitis, myositis and rhabdomyolysis. Herein we report a case of rhabdomyolysis with hepatitis post COVID-19 infection in a kidney transplant recipient.

Case Report

A 41-year-old Sri Lankan man with end-stage renal disease secondary to diabetes mellitus, received a kidney from his brother in 2003. His graft was functioning well and currently on prednisolone, cyclosporine A and azathioprine. He was also treated for hypertension and dyslipidemia. He was admitted with generalized muscle aches for 4 days. He denied any other symptoms and no prior history of fall or trauma. He was diagnosed with COVID-19 infection (CAT 1) three weeks ago and self-quarantined. He admitted of taking over-the-counter colchicine intermittently for gouty attacks. His vital signs were normal and examination revealed proximal myopathy (both upper/lower limbs with power grade of 3) with no sensory deficit. His liver function test showed significantly elevated liver enzymes with aspartate transaminase 286 U/L, alanine transaminase 301 U/L and alkaline phosphatase 129 U/L, marked elevated creatine kinase of 1,0707 IU/L with nontoxic serum cyclosporine level of 75 ng/ml. Viral hepatitis screening was negative. Electromyography (EMG) showed a myopathic pattern with complex repetitive discharge over the proximal muscles. He was presumed to have post COVID-19 hepatitis with rhabdomyolysis. Statin and azathioprine were stopped and his symptoms and blood parameters returned to normal 1 week after discharge.

Conclusion

The diagnosis of post COVID-19 hepatitis and myositis was made after a thorough anamnesis. Nevertheless, he had a few predisposing factors which might contribute to the development of myositis, like coadministration of colchicine and cyclosporine, and consumption of statin. Regrettably, the patient refused muscle biopsy and myositis-specific autoantibodies were not sent due to financial constraints.

De Novo Malignancies after Kidney Transplantation - A Single-centre Experience

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Introduction

Kidney transplant improves survival and quality of life of patients with end-stage kidney disease (ESKD). However, immunosuppression (IS) increases risk of post-transplant malignancies.

Methods

This retrospective study included all kidney transplant recipients (KTR) who were under follow-up in Hospital Selayang between year 2000 and 2022. Those diagnosed with de novo malignancies were identified and data was retrieved from hospital information system. Data was analyzed using SPSS Statistics version 24.0.

Results

There was a total of 210 KTR with 9 patients diagnosed to have de novo malignancy which gave a prevalence of 4.3%. Of the 9 patients, 88.9% were of deceased donor kidney transplant and 55.6% were male. Mean age at cancer diagnosis was 54 ± 14.4 years old. Mean duration from kidney transplantation to the diagnosis of cancer was 12.6 ± 7.2 years. Four patients were on tacrolimus, mycophenolic acid (MPA) and prednisolone, three patients on cyclosporine, MPA and prednisolone, one patient on cyclosporine, azathioprine and prednisolone while one patient on cyclosporine and prednisolone only. Seventy-eight percent of the patients were converted to everolimus upon diagnosis of cancer. Two patients had breast cancer, two patients had cancer of the urinary tract, two patients had skin cancer, two patients had haemotological malignancy and one patient had squamous cell cancer of the tongue. Seventy-eight percent of them passed away with a mean mortality time of 2.0 ± 1.7 years upon diagnosis of malignancy. Six patients died with a functioning graft while one had failed kidney allograft requiring dialysis. Two patients were still alive but both had developed chronic allograft nephropathy.

Conclusion

Malignancy is an important cause of morbidity and mortality in kidney transplant recipients. It carries a poor prognosis with high mortality rate with limited life expectancy upon diagnosis.

Reason of Disqualification for Living/Spousal Related Renal Transplant in Hospital Kuala Lumpur - A Single Centre Experience From 2015 to 2020

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Objective
Kidney transplantation is the best option of KRT as it provides good quality of life and improves survival. This is limited by the presence of suitable living donors and the availability of deceased donors in Malaysia. The objective of this study was to identify reasons of potential donor or recipient disqualification for living renal transplantation.

Methods
This is a retrospective study of 200 pairs worked up and were disqualified for kidney transplant from 2015 to 2020. Reasons of disqualification among potential donors and recipients were recorded. This included medical reasons; high cardiovascular risks related co morbidities, urinary system disorders, immunological risks, and psychosocial aspect.

Results
The highest disqualification was due to their underlying co morbidities; n=47(11.8%) among donors and n=13(3.3%) recipients, followed by obesity (BMI ≥ 30 kg/m²); n=35(8.8%) among donors, n=2(0.5%) recipients. IGT was identified in 26(6.5%) donors. Functional kidney disorder (significant proteinuria and low GFR) among donors was n=23(5.8%), followed by structural kidney diseases; n=11(2.8%) donors and n=1(0.3%) recipients.3 donors (0.8%) were disqualified due to newly diagnosed DM and underlying malignancy.2 donors (0.5%) had Hepatitis B and C respectively .In view of too young(19 years old) and elderly age (65 years old) of donor, n=3(0.8%) were disqualified. Among the recipients, n=7(1.8%) had high DSA and positive cross match, one with malignancy and another with structural kidney disease. There was only 1 recipient who was disqualified due to noncompliance to ongoing KRT.4(1%) of recipients died along the work up period. Pairs that defaulted follow up were n=8(2%).

Conclusion
A majority number of potential donors and recipients were disqualified due to underlying non permitting medical risk factors with high cardiovascular risk factors like IHD, DM, obesity, and smoking. Functional and structural kidney diseases which led to proteinuria and haematuria were also common reasons of disqualification. This overall had led to reduced number of potential candidates for a living or spousal related renal transplantation.

Characteristics And Long-Term Graft Function Changes Among Prevalent Kidney Transplant Recipients in A Tertiary Hospital in Malaysia

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Objective
Understanding the clinical characteristics of prevalent kidney transplant recipients (KTR) is important in health service provision development and planning. In addition, these data allow identification of risk factors associated with worse outcomes and may result in better clinical practice.

Methods
Retrospective cohort study involving all prevalent KTRs under follow-up at nephrology unit, HRPB Ipoh at 1st January 2022. Sociodemographic and clinical characteristics as well as long term graft function changes were described. Glomerular filtration rate (GFR) was estimated using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation.

Results
There were 62 prevalent KTRs under follow-up as of 1st January 2022. Mean age was 45.39+/-12.98. They were mainly males (62.9%) and Chinese in ethnicity (62.9%). Primary cause of kidney failure were chronic glomerulonephritis(30.6%) and diabetes mellitus(8.1%). Cause of kidney failure was unknown in half (51.6%) of the population.

Living related kidney transplant and deceased-donor kidney transplant were equally distributed(33.9% vs 27.4%). One-third(38.7%) of kidney transplants were done in foreign countries. Mean age at transplant was 33.7+/-11.48, and average years of transplant was 12.24 years, with the longest functioning graft at 28 years. The most common immunosuppression regime was Mycophenolate Mofetil/Tacrolimus/Prednisolone(51.6%), followed by Tacrolimus/Everolimus/Prednisolone(19.4%). All patients were on prednisolone as part of their immunosuppression regime.

Infection at 1st year post transplant occurred in 30.6% of patients. One third(30.6%) required admission during their first year post transplant. Post-transplant diabetes mellitus was reported in 9.6% of recipients.
The average eGFR was 60.5 +/- 28.0ml/min/1.73m2; most patients were in CKD Stage 2 classification. Mean annualized change in eGFR was -1.8 +/- 3.8ml/min/1.73m2.

We did not find any significant association between eGFR slope and sociodemographic/transplant-related characteristics.

Conclusion
There was a slow decline in eGFR in all KTRs. Failure to identify factors associated with worse declining GFR rate could be due to small sample size and retrospective nature of study.

Acute Graft Versus Host Disease in Acute Leukemia Post Allogenic Stem Cell Transplant : A Retrospective Study

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Introduction

Despite a good outcome in allogenic stem cell following a modern treatment with better supportive care, acute graft versus host disease (GVHD) remains a major cause of non relapse morbidity and mortality post allogenic stem cell. In order to shorten neutropenic phase and to reduce the need for blood transfusion during pandemic covid 19, granulocyte colony stimulating factor (GCSF) and erythropoietin were introduced earlier.

Objective

The primary endpoint was the time to neutrophil engraftment and secondary endpoints are the incidence of acute GVHD, the need for blood transfusion, rate of relapse and transplantation related mortality within 100 days post-transplant.

Methods

All patient with acute leukemia who were transplanted in our center from May 2020 till May 2021 were screened. Out of 102 patients, 73 patients were enrolled. All patient received GCSF and erythropoietin during the first 14 days after transplantation. We followed up the patients until day 100, death or default. The severity of acute GVHD is based on Glucksberg grading.

Results

Allogenic stem cell transplant (SCT) patient has median of 11 days (range 8-23) for neutrophil engraftment. The incidence of acute GVHD was 54.8% (40), including isolated skin 12.3% (9), gut 23.3%(17), liver 5.5%(4) and multiorgan involvement 13.7%(10%). Majority of the acute GVHD, 87.5% (35) were grade II-IV. With the used of erythropoietin, 34.2% (25) did not require blood transfusion where the median packed cell (PC) required was only 1 (0-7 PC). Out of 73 patients who underwent SCT, 63 (86.3%) patients were alive where 78.1% (%) were in remission. The relapse rate was 8.3% while the transplantation related mortality was 12.3%.

Conclusion

Prophylaxis GCSF in allogenic stem cell transplant may exacerbate acute GVHD but did not affect the relapse rate. However, it may need further evaluation.

Long Term Renal Outcome of Living Kidney Donors: A Single Centre Experience

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Objective
To assess the long-term renal outcome of living kidney donor (LKD).

Method
This is a retrospective descriptive cohort study of the renal outcome of LKD who donated their kidney in Selayang Hospital from year 2000 until 2016. The renal function measured using CKD-EPI equation in ml/min/1.73m2 at 5 years and 10 years were analysed.

Result
A total of 61 LKD operations took place in Selayang Hospital from year 2000 to 2016 with predominant female donors (72.13%). The proportion of Malay, Chinese and Indian donors are 59.02%, 29.5% and 11.48% respectively. The mean age at kidney donation was 43.44±9.05 years old. The mean eGFR at kidney donation was 102.52±15.56 ml/min/1.73m2.

A total of 37 donors (60.66%) with sufficient data for analysis were identified. The mean eGFR (ml/min/1.73m2) were 75.94±15.61, 76.82±18.08 and 72.48±13.77 at 1, 5, and 10 years respectively. A repeated-measures ANOVA determined mean eGFR differed significantly across time points of pre-operation to 1 year, 5 years and 10 years ($F(3, 72)=25.932$, $p<0.001$). However, mean eGFR remained stable over time (74.0±15.2 vs 76.9±19.3 vs 72.6±14.1, $p=0.383$). Therefore, the results indicated a non-significant time effect for eGFR post donor-nephrectomy.

At 5- and 10-years post-donation, 13.71% (n=34) and 20.69% (n=29) donors had eGFR <60 ml/min/1.73m2 respectively with 1 donor progressed to end stage renal disease needing regular haemodialysis. Hypertensive disease was documented in 32.43% (n=37) of the donor with the mean onset at 7.92±3.40 years post-donation and 5.41% (n=37) developed significant proteinuria.

Conclusion
In this donors cohort, significant drop of eGFR noted post-donation at 1 year comparing to baseline but remain significantly stable till with time. 30% develop hypertension and less than 25% progressed to eGFR <60 ml/min/1.73m2. This is comparable to national prevalence of hypertensive population but slightly higher for chronic kidney disease. In general, LKDs has favourable renal outcome post-donation.

Tacrolimus Metabolism and Impact on Graft Function, A Single Center Experience

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Introduction

Tacrolimus is part of standard immunosuppressive regimen after renal transplant. It has high inter-individual variable metabolism; genetic polymorphism has shown to significantly influence tacrolimus metabolism. Literature suggests that tacrolimus metabolism may have influence on renal graft outcome.

Objective

To study the impact of tacrolimus metabolism on graft function.

Methods

This is a single centre, retrospective, observational cohort study from year 2000 to 2021. Data analysis was done using SPSS version 26.

Tacrolimus metabolism rate was determined by concentration: dose (C/D) ratio at third month post transplantation. Patients with Tacrolimus C/D ratio< 1 ng/ml are characterized as fast metabolizers and ≥ 1 are characterized as slow metabolizers

Subjects' characteristic and eGFR were compared and analyzed.

Results

In this study, 78 subjects were included and 11.5 % (n=9) were classified as fast metabolizerswith a mean C/D ratio of 0.725.

Age, genders, race, diabetes, hypertension status, induction agent and cold ischemictime were not associated with C/D ratio (p> 0.05).

At 3 months post-transplantation, fast metabolizers comparing to slow metabolizers, had higher mean tacrolimus dose with 8.06mg vs 3.82mg (p<0.001) and demonstrated having lower mean trough levels 5.81ng/ml vs 8.23ng/ml (p=0.016) respectively.

However, there is no statistical difference in graft function at 3, 6, 9, 12 and 24th month for both groups.

Conclusion

In previous literatures, fast tacrolimus metabolizers are associated with worse graft outcome. In our study, there was no statistical difference in graft function observed between fast and slow metabolizersdespite significant difference in dosage and trough levels of tacrolimus. The possible limitations include a small study population, short study duration as well as possible confounding factor of diltiazem usage.

Reasons of Disqualification from Cadaveric Renal Transplantation Waiting List in Malaysia

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Introduction

End-stage renal disease (ESRD) is increasing globally, and renal transplantation (RT) is the preferred renal replacement therapy to treat ESRD. Due to limited cadaveric donors in Malaysia, we have to be vigilant in kidney recipient selection in order to lengthen survival advantage in cadaveric renal transplantation.

Objective

This study is to analyse the reasons of disqualification of ESRD patient from cadaveric renal transplantation waiting list.

Methodology

This is a retrospective analysis of a national cadaveric renal transplantation program in Malaysia. The demographic data (age, gender, body weight, ABO group, dialysis vintage) of all potential cadaveric renal transplantation were extracted from Malaysia Kidney Allocation System (MyKAS). Those who are permanently disqualified from this waiting list and their reasons were analysed using SPSS version 27.

Results

133 adult patients with ESRD on regular dialysis (82 males and 51 females) were permanently disqualified from cadaveric renal transplantation waiting list. The mean age of those recipients was 32.74 ± 3.45-year-old and median duration of dialysis is 16.6 (15.4-17.9) years. The modality of renal replacement therapy in this disqualified group are 86.5% hemodialysis and 13.5% peritoneal dialysis. The reasons of these disqualifications are patient refusal (25.56%), persistent high PRA (13.53%), poor compliance to dialysis, medications or fluid restriction (9.77%), severe CKD-MBD disease (9.02%), poor heart reserve (6.02%), active malignancy (5.26%), liver cirrhosis (4.51%), dead (4.51%), not independent ADL (3.76%), mentally challenged (3.76%), EPS (3.01%), non-repairable urological problem (3.01%), active smoker (3.01%), obesity (2.26%), no social support (1.5%), not treatable hematological condition (0.75%) and severe chronic lung disease (0.75%).

Conclusion

This study is the first to evaluate the reasons of disqualification from cadaveric renal transplantation program in Malaysia. Further evaluation of renal transplantation system and public awareness is required to provide further insight to improve the RT rates in Malaysia.

Demographic Characteristics and Outcomes of Early Steroid Withdrawal Protocol in Kidney Transplantation: A Single Centre Experience

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Objective
Early steroid withdrawal (ESW) protocol in kidney transplantation (KT) aimed to reduce the debilitating adverse effects of steroid. This protocol was introduced in 1980s and gained momentum thereafter.
The objective of this study is to find out the demographic details and outcomes of ESW immunosuppression in KT.

Methods
A retrospective study was conducted on KT recipients on ESW protocol, followed up in Hospital Selayang from Feb 2006 to Feb 2022. ESW is defined as steroid withdrawal within 7 days post transplant.

Results
Total of 16 KT recipients were on ESW immunosuppression during the study period in our centre. Majority (75%) were living donor KT . Male recipients were predominant with the mean age of 42 Â± 5 years old.

Diabetes mellitus (DM) contributed 37.5% of recipientsâ?? primary disease. In the diabetic cohort, more than 50% have HbA1c > 7% and 66.7% of them were on insulin therapy with documented diabetic retinopathy pre-transplantation. Other comorbidities were hypertension and ischaemic heart disease, 81.3% and 18.8% respectively.

The recipients had either DM (31.2%) or very low immunological risk (68.8%) as indications for early steroid withdrawal. The induction agents used were basiliximab and anti-thymocyte globulin (ATG), 56.2% and 43.8% respectively.

The 6 months and 1-year graftsâ?? and patientsâ?? survival are both 100%. Infection occurred in 3 recipients (18%) after 2 years of posttransplant. Two recipients had urinary tract infection and a recipient had BK virus nephritis. Three recipients had rejection and lead 2 of them to be converted to steroid-based immunosuppresion. Four patients developed metabolic syndrome post-transplant.

Conclusion
In one year, our ESW cohort confers good graft and patientsâ?? survival. Occurrence of infection and metabolic syndrome may be compounded by other immunosuppressants and underlying illnesses.

Say Yes To Kidney Transplantation! Overcome Its Barriers at Central Zone of Sarawak

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Introduction

Despite kidney transplantation has been around for decades, the notable milestone is still a challenge today. Certainly, kidney transplantation will bring new life to ESKD patients. Despite the obvious benefits of kidney transplantation, uptake of patients choosing this method as mode of renal replacement is still low in Central Zone of Sarawak.

Objective

This study aims to assess the barriers and factors causing the low uptake of patients choosing renal transplantation as mode of renal replacement therapy at central zone of Sarawak.

Methods

The target population was all end stage kidney disease patients undergoing hemodialysis in Sibu hospital and NGO/private centers at central zone Sarawak. Questionnaire was given via the HD staffs.

Results

Total of 102 patients with median age 50 participate in this study. 92.1% of them were Bumiputera. 40% of them received primary school education and 52.2% secondary school level. A staggering 77.5% of patients never considered renal transplant as a choice before. The common factors of not considering renal transplant were 'unwilling to to take the risk' (24.5%), 'unaware of own eligibility for transplant' (15.7%), 'financial constraints'(12.7%), 'never counseled for renal transplant before'(18.6%) and 8.8% of the respondents had lack of a donor. Other barriers included logistic issues, poor medical condition, and satisfaction with current treatment.

Conclusion

Identification of barriers to kidney transplantation is crucial. The lack of knowledge and understanding of patients' own disease, eligibility for transplant and logistics are major factors. A total of 97.9% of respondents would consider renal transplant if can be done locally. More understanding of the local belief and culture are important to overcome the barriers and education of kidney transplant as one of kidney replacement therapy should be given to all patients. With the kidney transplantation, most of patients can return to work and have better quality of life.

Cytomegalovirus Disease without Viremia 6 Years Post Kidney Transplant: A Case Report

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Objective
Cytomegalovirus (CMV) viremia commonly precedes CMV disease. Unlike the renal allograft, gastrointestinal CMV disease may not always exhibit CMV viremia. We report a case of gastrointestinal tissue-invasive CMV disease without CMV viremia.

Methods
Case report

Results
A 40-year-old Malay lady with type 2 diabetes and 6 years post spousal kidney transplant presented with intermittent, chronic, non-bloody diarrhoea with weight loss, 6kg over 6 months. She had no vomiting, lymphadenopathy, abdominal pain, fever, visual disturbances or respiratory symptoms. She developed acute kidney injury, anaemia and erratic tacrolimus levels. Her immunosuppressants were mycophenolate sodium, prolonged-release tacrolimus and prednisolone. Both the recipient and donor were seropositive for CMV IgG pretransplant. Blood tests showed low inflammatory markers (C-reactive protein 17.4mg/L), normal thyroid function test, no identifiable organisms on microscopy and stool cultures. Her CMV polymerase chain reaction (PCR) was initially not detected. Oesophagoduodenoscopy and colonoscopy showed diffuse inflammation involving the oesophagus, stomach, duodenum, terminal ileum and colon with an ulcer at the terminal ileum. Histopathology examination reviewed twice, reported diffuse colitis with viral inclusions seen at the terminal ileum ulcer which stained positive for CMV immunohistochemistry. No evidence of malignancy. Ziehl-Neelsen stain was negative for acid fast bacilli. A repeat CMV PCR was detected at low levels (<165 IU/ml). Oral valganciclovir was initiated resulting in resolution of symptoms and blood parameters. Allograft biopsy was not done as her creatinine normalised with hydration from 206mcmol/L to 98mcmol/L. Besides hematopoietic progenitor cells, CMV can remain latent in endothelial cells with the capacity for cell to cell spreading and reactivation in immunosuppressive states. Although incompletely understood, this could explain the negative CMV viral load despite extensive gastrointestinal disease.

Conclusion
A high index of suspicion remains the mainstay of diagnosing gastrointestinal CMV disease when viral load is low or not detected. Accurate diagnosis leads to appropriate treatment to prevent allograft failure.

A Four-year Retrospective Study to Evaluate the Epidemiology and Graft Outcomes of Renal Transplant Patients at Hospital Kuala Lumpur

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Objective
To evaluate the epidemiology and graft outcomes of renal transplant patients at Hospital Kuala Lumpur from year 2017-2020.

Methods
This is a single center retrospective cohort study. Medical records from January 2017 until December 2020 of donors and recipients were reviewed and study data extracted. Data for year 2021 was not included as transplant services at our hospital was affected by the COVID pandemic.

Results
Data were cleaned, explored and analysed using SPSS version 26.0 and STATA version 14.0. Kruskal Wallis test was used to explore the difference in surgical time experienced by both donor and recipients across different years. Mixed effect linear regression was used to explore the changes in creatinine level in the recipient group.

A total of 319 participants were included, consisting of 180 recipients and 139 donors. The number of donors and recipients increased over the years, and it was observed that donors were relatively older compared to the recipients. There was almost equal proportion in gender observed for both across the years.

A significant difference was observed in surgery time ($p< 0.001$). Year 2018 had the longest surgery time (median of 281 minutes for donor and 294 minutes for recipient) while year 2020 had the shortest surgery time (median of 206 minutes for donor and 229 minutes for recipient).

A significant reduction was observed in creatinine level of recipients post-operatively on Day 1, Day 3, Day 7, 2 weeks, 1 month, 3 months, 6 months and one year when compared to pre-operatively.

Conclusion
This study demonstrated improved transplant outcomes hence justifies more initiatives to promote renal transplantation at our hospital and country.

Post-transplant Lymphoproliferative Disorder in Adult Solid Organ Transplant Recipients: Case Series and Single-Centre Experience

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Objective
To present seven cases of post-transplant lymphoproliferative disease observed in our center among solid organ transplant recipients.

Method
We performed a retrospective single-Centre assessment of PTLD incidence in adult solid organ transplant recipients under our Centre follow up from year 2010-2021. Total seven cases of PTLD, four men and three women, aged 26-61 at the time of diagnosis of PTLD, transplanted between 1990-2016. We reviewed the follow variables from database: sex, race, age, transplant type, immunosuppression regime, EBV status, time from kidney transplant to PTLD diagnosis, treatment given and outcome.

Result
We identified 7 cases PTLD in solid organ transplant recipient from year 2010-2021. Histological subgroup included 5 cases DLBCL, 1 case of plasmablastic lymphoma, 1 case high grade NHL. Median time from transplant to PTLD diagnosis was 12.8 years (range from 1-29 years). EBV status was unknown in 2 cases, negative for 2 cases, positive for 3 cases. 3 cases of stages III/IV advanced disease at diagnosis, 4 cases of Stage I/II at diagnosis. 1 out of 7cases developed PTLD in the transplanted graft. For treatment regimen, in addition of RIS and switching immunosuppressant, 1 case achieved remission after 4 cycles rituximab monotherapy, 1 case received 4 cycles rituximab followed by 5 cycles rituximab and 7 cycles half CHOP, 3 case treated with RCHOP chemotherapy, 1 case with velcade based chemotherapy and 1 case received RCHOP/DHAC/RICE and followed autologous stem cell transplant. Total 4 patients passed away while receiving treatment. 3 out 4 patients died of cardiovascular complication and 1 case died of treatment complication. 3 out of 4 cases died within 2 years after PTLD diagnosis.

Conclusion
Post-transplant lymphoproliferative disorder (PTLD) is an important complication after transplantation and potentially life threatening . PTLD after solid organ transplantation may carry a poorer prognosis than lymphoma in immunocompetent individuals.

Keyword
Lymphoma, post transplant lymphoproliferative disease, solid organ transplant recipient

Successful Treatment of Severe COVID-19 in a Kidney Transplant Recipient with Tocilizumab

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Introduction

Coronavirus disease (COVID-19) can lead to acute respiratory distress syndrome (ARDS) with stormy interleukin-6 (IL-6) release. Tocilizumab, an IL-6-receptor blocker may control the host immune response. We share a kidney transplant recipient (KTR) with severe COVID-19 infection who survived after successfully treated with Tocilizumab.

Method

We report a case of a KTR who received Tocilizumab for severe COVID-19 infection.

Results

A 40 years old deceased-donor KTR developed three days history of sore throat, cough, ageusia, anosmia, headache and running nose. She was admitted for severe COVID-19 infection on 23rd October 2021 with positive reverse-transcriptase-polymerase-chain-reaction (RT-PCR), cycle threshold (CT) value = 25. Her chest radiography (CXR) showed bilateral lower zone multifocal alveolar opacities suggesting bronchopneumonia. She has white cell count (WBC) 12.7x109 /L with no lymphopenia, C-reactive protein (CRP) 250.1mg/L and ferritin 157.20µg/L. On Day 2, she had IV Tazosin for new onset of fever. On day 3, she developed exertional hypoxia with desaturation to 92% and required nasal prong and IV Dexamethasone 8mg daily. On day 5, she upgraded to venturi mask 60%. Her WBC increase to 17.1x109/L with lymphopenia of 0.9x109/L. Acute kidney injury ensued with increase of serum creatinine from 244umol/l to 291umol/l. A single dose of Tocilizumab 400mg was given and her immunosuppressants were withheld. Her clinical condition and laboratory parameters (ALC 1.8x109/L, CRP 1.7mg/L and serum creatinine 165umol/L) continued to improve on day 16 when she was discharged. Her CXR revealed complete resolution during follow up at 2 months.

Conclusion

Tocilizumab showed potential role in this KTR with severe COVID-19 infection. More study is needed to ascertain its safety and efficacy in solid organ transplant population.

Appendix

Table 1. Baseline characteristics of patients and the outcome of stem cell mobilization

Patient characteristics	Patients, n(%)	Mobilization, n(%)		p-value
		Success	Failure	
Number	147 (100.0)	115 (78.2)	32 (21.8)	
Age, years[a]	42.0 (14.0-70.0)	37.0 (14.0-70.0)	49.5 (24.0-66.0)	**0.006**
Sex[b]				0.722
Male	73 (49.7)	57 (49.6)	15 (46.9)	
Female	74 (50.3)	58 (50.4)	17 (53.1)	
Histopathology[c]				0.559
DLBCL/HGL	74 (50.3)	58 (78.4)	16 (21.6)	
HL	31 (21.1)	26 (83.9)	5 (16.1)	
Low grade NHL	7 (4.8)	5 (71.4)	2 (28.6)	
MM	15 (10.2)	13 (86.7)	2 (13.3)	
MCL	7 (4.8)	5 (71.4)	2 (28.6)	
T-NHL	6 (4.1)	5 (83.3)	1 (16.7)	
Leukaemia	7 (4.8)	3 (42.9)	4 (57.1)	
Status of disease[c]				**0.001**
Newly diagnosed	46 (31.3)	39 (84.8)	7 (15.2)	
First relapse/refractory	85 (57.8)	72 (84.7)	13 (15.3)	
>first relapse	15 (10.2)	4 (26.7)	11 (73.3)	
Post-transplant	1 (0.7)	0 (0.0)	1 (100.0)	
G-CSF duration (days)[b]				**0.003**
1-6	75 (51.0)	66 (88.0)	9 (12.0)	
>6	72 (49.0)	49 (68.1)	23 (31.9)	
Treatment courses[b]				**<0.001**
1-8	111 (75.5)	96 (86.5)	15 (13.5)	
>8	36 (24.5)	19 (52.8)	17 (47.2)	
Number of prior treatment lines[b]				**<0.001**
1-2	126 (85.7)	109 (86.5)	17 (13.5)	
>2	21 (14.3)	6 (28.6)	15 (71.4)	
High dose MTX/Ara-c[b]				**<0.001**
Yes	19 (12.9)	6 (31.6)	13 (68.4)	
No	128 (87.1)	109 (85.2)	19 (14.8)	
Haematological values				
Hb (g/dL)[a]	10.4 (7.4-13.5)	10.5 (7.4-13.5)	10.2 (7.8-12.2)	0.152
Platelet (x109/L)[a]	98 (28.0-348.0)	98 (50.0-348.0)	96.5 (28.0-344.0)	0.998
Chemo-mobilization regimen[c]				**0.008**
CTX	47 (32.0)	30 (63.8)	17 (36.2)	
DHAP	36 (24.5)	34 (94.4)	2 (5.6)	
ICE	24 (16.3)	18 (75.0)	6 (25.0)	
CHOP-like	17 (11.6)	16 (94.1)	1 (5.9)	
Etoposide	5 (3.4)	3 (60.0)	2 (40.0)	
GDP	6 (4.1)	4 (66.7)	2 (33.3)	
R-EPOCH	5 (3.4)	5 (100.0)	0	
HyperCVAD part B	4 (2.7)	4 (100.0)	0	
Others	3 (2.0)	1 (33.3)	2 (66.7)	

[a] Mann-Whitney U test (median value)
[b] Chi-square test
[c] Kruskal-Wallis test. DLBCL, diffuse large B-cell lymphoma; HGL, high grade B-cell lymphoma; HL, Hodgkin lymphoma; NHL, non-Hodgkin lymphoma; MM, multiple myeloma; MCL, mantle cell lymphoma; MTX, methotrexate; Ara-c, cytarabine; Hb, haemoglobin; CTX, cyclophosphamide; DHAP, dexamethasone, cisplatin, cytarabine; ICE, ifosfamide, carboplatin, etoposide; CHOP, cyclophosphamide, epirubicin, vincristine and prednisone; GDP, gemcitabine, dexamethasone, cisplatin; HyperCVAD part B, treatment with high dose cytosine arabinoside, and methotrexate

Table II. Univariate and multivariate statistical analysis of factors influencing mobilization failure

	Mobilization failure			
	Univariate	Multivariate		
Prognostic factors	P-value	P-value	OR	95% CI
Older age	0.005	0.042	0.004	0.000-0.008
Disease status (>first relapse)	<0.001	NS	-	-
G-CSF administration duration (longer than 6 days)	0.002	0.016	0.143	0.027-0.259
Treatment courses (>8)	<0.001	NS	-	-
Number of prior lines (>2)	<0.001	0.003	0.338	0.120-0.557
High dose MTX/Ara-c	<0.001	0.005	0.274	0.086-0.462

OR, odds ratio; CI, confidence interval; NS, not significant; G-CSF, granulocyte-colony stimulating factor; MTX/Ara-c, methotrexate/cytarabine; p<0.005 was considered to indicate a statistically significant difference

Renal Allograft Biopsy: A Descriptive Data From Single Centre

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Objectives
Renal transplant remains the best treatment modality for patients with End Stage Renal Disease. Long-term graft and patient survival depends largely on the preservation of allograft function. Renal allograft biopsy is the gold standard investigation in examining allograft dysfunction and provides crucial information such as grading of pathology process, enabling diagnosis, guide treatment and graft prognosis.

Methods
We reviewed medical records of patients who had renal allograft biopsy done in HTAA. Their baseline demography, biopsy indication, biopsy results based on Banff 2013 classification, graft and patient outcome were examined.

Results
From 2015 until present, there were 11 renal allograft biopsies done. Out of 11 grafts, 2 were from living donor and 9 from deceased donor. Time from transplant to graft biopsy ranging from 6 months to 17 years. All the indications for biopsy were due to creeping in creatinine trend, ranging 30% to 50% from baseline. Based on Banff 2013 classification, the biopsy results showed normal (category1) in one patient, antibody mediated rejection (category2) in two patients, borderline changes (category3) in one patient , T-cell-mediated rejection (category4) in two patients, interstitial fibrosis/tubular atrophy (IFTA) (category5) in three patients , other diagnoses (category6) in two patients .Out of 11 patients until present, there are 4 patients with stable graft function, one with failing graft function, and one ongoing haemodialysis. Another 5 patients passed away due various reasons and all of them had failed graft prior to succumb.

Conclusions
The main findings of allograft biopsies in our centre were due to IFTA followed by antibody mediated rejection and T-cell mediated rejection. This showed that graft biopsy plays a crucial role in determining

Split Cadeveric Liver Transplantation: A New Hope for Limited Graft

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Objective
Discuss the feasibility of split liver transplantation (SLT) in Malaysia to address the problem of increasing demand of liver transplant with limited donor

Methods
Case report of two cases of split cadaveric transplantation in Hospital Selayang in 2021/22

Results
Two SLT involving 4 recipients during the period of time Oct 2021-Feb 2022.
First SLT happened on 18/10/2021, where a young adult cadaveric donorâ??s liver were split ex situ in the Selayang Hospital, after the graft procured from Melaka Hospital. The liver was split into right lobe graft which was given to the teenage recipient aged 13 year old, where the left lateral lobe liver was send to HKL and implant into a 1 year old infant in HTA. The 13 year old boy had the diagnosis of Auto-immune hepatitis overlapping with primary sclerosing cholangitis, he was able to discharge 1 month after the liver transplant. The 1-year-old infant was having liver cirrhosis due to biliary atresia post-Kasai procedure. She passed away after 12hours post-transplantation due to excessive bleeding.
Second SLT was done on 09/02/2022. The liver was procured in Selayang hospital, doing in situ split of liver. The liver was split into left lateral segment and extend right lobe. The extended right lobe was implanted into a 37 year female who had recurrent pyogenic cholangitis and liver cirrhosis. The left lateral segment was given to a 3 year old girl with liver cirrhosis post-Kasai procedure. The adult patient was discharged home D14 without complications, while the paediatric patient still had functioning graft at D35, but was still warded due to lung complications.

Conclusion
The graft shortage due to scarcity of donor is common. This is especially true in children where size-matched liver grafts are rare. Therefore, split liver transplantation is proposed enabling transplantation of one donor liver into two recipients- one child and one adult. SLT is a technically demanding procedure, as the complications rates of 66.7% after SLT compares to 45.1% in full organ liver transplant. Particularly the early biliary complications are more common in SLT as it has the cut liver surface. Several risk factors related with SLT were identified, including urgent SLT, recipient body weight â?¤ 6kg, donor age > 50 years and cold ischaemic time with HR = 1.07 per hour. In situ splitting is usually preferred as it can help to reduce cold ischaemic time. In our cases, with in situ split, and doing all procedures (organ procurement, adult and paeds recipient) within a centre contribute to the success of both adult and paediatric recipient. However the in situ splitting will prolong the organ procurement time and make it not practical in most of the cases. Despite all obstacle and problem, generally SLT can produce a comparable result with standard whole liver transplant.

Kidney Transplantation from Hepatitis C Viraemic Donor to Naïve Recipients. A Case Series

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Introduction

Hepatitis C infection was traditionally considered an absolute contraindication for kidney donation in Malaysia. This paradigm changed with excellent sustained virologic response (SVR) from direct-acting antiviral agent therapy (DAA). Also, studies report good outcomes of kidney transplantation from hepatitis C viraemic donor to naive recipients (D+R-) when compared to continuing on the transplantation waiting list. Herein we report the outcomes of the first two cases of such D+R- transplantation in Malaysia.

Case 1

A 31-year-old man with end stage kidney disease (ESKD) due to unknown aetiology has been on haemodialysis for 15 years. He received right kidney from a hepatitis C viraemic deceased donor whose hepatitis C virus ribonucleic acid (HCV-RNA) was 6.94Log10IU/ml with genotype of 3. His Hepatitis and HIV screening tests were negative. On post-transplant day-2, he was tested positive with HCV-RNA of 1.9Log10IU/ml and Sofosbuvir/ Velpatasvir was started. He responded well with HCV-RNA not detected on day-14 of treatment. There were no adverse events from DAA therapy. He completed 3-month course of DAA and remained SVR at 12 week and 24 weeks. His latest serum creatinine level is 115umol/L.

Case 2

A 35-year-old man with ESKD due to non-steroidal-anti-inflammatory-drug (NSAID) abuse has been on haemodialysis for 13 years. He received left kidney from the above-mentioned donor. He developed massive postoperative bleeding and was complicated with delayed graft function. He was tested positive on day-2 post-transplant and the aforementioned DAA regimen was started on day 12 post-transplant. His HCV-RNA prior to DAA treatment was 7.17Log10IU/ml. HCV-RNA was not detected on day-35 of treatment and remained SVR at 12 week and 24 weeks. His latest serum creatinine level is 126umol/L.

Conclusion

Treatment of Hepatitis C D+R- kidney transplant recipients with DAA is safe and effective.

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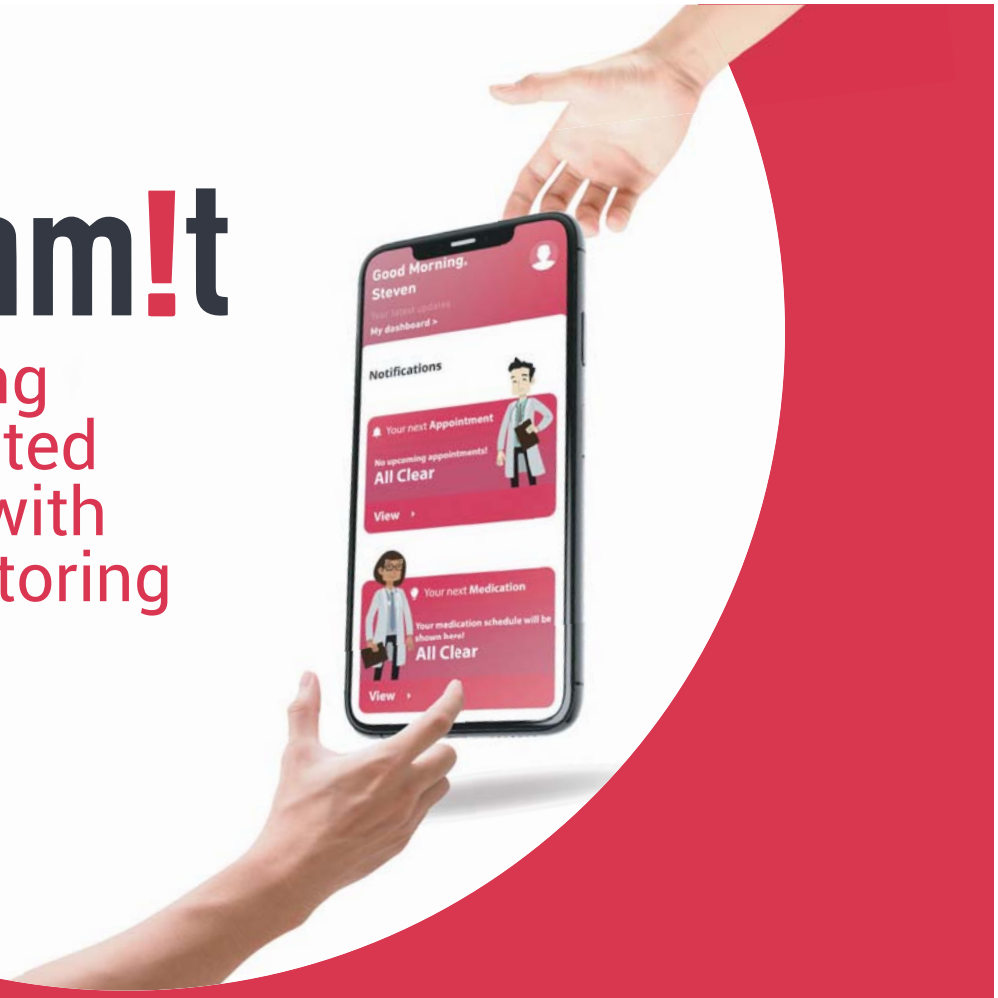

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