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The Transplantation Society of Australia and New Zealand

Forty Second Annual Scientific Meeting

PROGRAM AT A GLANCE

Saturday, 15 June 2024		
08:15–17:00	Frontiers and Challenges in Organ Transplantation (FACT) Day	Room 103
17:00–18:00	Early Career Committee Networking Drinks	Outside Room 103
11:00–18:00	Liver Meeting	Room 104
13:00–17:00	Council Meeting	Room 102
Sunday, 16 June 2024		
08:30–12:00	Solid Organ Transplantation Symposium (SOTS) Liver	Room 104
09:30–15:00	Solid Organ Transplantation Symposium (SOTS) Cardiothoracic	Room 103
09:30–15:00	Solid Organ Transplantation Symposium (SOTS) Kidney/Pancreas-Islet	Rooms 105 & 106 (Main Plenary)
13:30–15:00	Registration	Exhibition Space
12:30–14:30	**Mark Cocks Patient Forum (Sponsored by Transplant Australia)**	Room 101
15:10–15:20	**Welcome Ceremony**	Rooms 105 & 106 (Main Plenary)
15:20–15:30	**Official Opening:** *TSANZ President*	Rooms 105 & 106 (Main Plenary)
15:30–16:00	**PLENARY 1: Astellas Sponsored Session** Evolving Diagnostics for the Allograft Biopsy: From Gene Expression to Artificial Intelligence Algorithms	Rooms 105 & 106 (Main Plenary)
16:00–16:20	**Ian McKenzie Award Lecture** Lessons Learnt Using Preclinical Model of Liver, Kidney and Heart Transplantation	Rooms 105 & 106 (Main Plenary)
16:20–16:50	**Afternoon tea**	Exhibition Space
16:45–17:45	***CONCURRENT FREE COMMUNICATIONS SESSIONS*** **Free Communications 1:** Immunological Complications of Transplantation **Free Communications 2:** Machine Perfusion#1 **Free Communications 3:** Donation and Organ Donors **Mini-oral Session 1**	 Rooms 105 & 106 Room 104 Room 103 Room 102
17:45–18:30	**TTS - Women in Transplantation Session** Making a Difference	Rooms 105 & 106 (Main Plenary)
18:30–19:25	**Welcome Reception:**	Exhibition Space

Monday, 17 June 2024		
06:15–07:15	**Fun Run/Walk (5km)**	South Bank (meet at Convention Centre)
07:30–08:00	**Coffee** with sponsors	Exhibition Space
08:00–09:40	**PLENARY 2: Joint TSANZ/OTA/ADTCA Session** **Expanding the Donor Pool**	Rooms 105 & 106 (Main Plenary)
09:40–10:40	***CONCURRENT FREE COMMUNICATIONS SESSIONS***	
	Free Communications 4: Sex, Gender and Transplantation	Rooms 105 & 106
	Free Communications 5: Clinical Aspects of Liver and Pancreas Transplantation	Room 104
	Free Communications 6: Organ Preservation	Room 103
	Mini-oral Session 2	Room 102
10:40–11:10	**Morning tea and Poster Viewing**	Exhibition Space
11:10–12:50	**PLENARY 3: ThermoFisher Sponsored Session** Transplant Immunology and Biomarkers	Rooms 105 & 106 (Main Plenary)
12:50–13:35	**Lunch and Poster Viewing**	Exhibition Space
13:35–15:35	**President's Prize Symposium**	Rooms 105 & 106 (Main Plenary)
15:35–16:00	**Afternoon tea and Poster Viewing**	Exhibition Space
16:00–17:00	***CONCURRENT FREE COMMUNICATIONS SESSIONS***	
	Free Communications 7: Transplant Epidemiology	Rooms 105 & 106
	Free Communications 8: Infectious Complications of Transplantation	Room 104
	Free Communications 9: Machine Perfusion#2	Room 103
17:00–17:45	**TSANZ Annual General Meeting**	Rooms 105 & 106 (Main Plenary)
18:30–22:30	**TSANZ Annual Dinner**	Showtime Events Centre, South Wharf Promenade

Tuesday, 18 June 2024		
07:30–08:00	**Coffee** with sponsors	Exhibition Space
08:00–09:30	**PLENARY 4: Astellas Sponsored Session** Equity in Transplantation	Rooms 105 & 106 (Main Plenary)
09:30–10:30	***CONCURRENT STATE OF THE ART SESSIONS*** **STATE OF THE ART 1 Xvivo Sponsored Session** Machine Perfusion Technologies in Transplantation **STATE OF THE ART 2:** Fertility and Transplantation	 Rooms 105 & 106 (Main Plenary) Room 104
10:30–11:00	**Morning tea**	Exhibition Space
11:00–12:30	**CONCURRENT STATE OF THE ART SESSIONS** **STATE OF THE ART 3: Xvivo Sponsored Session** Focus on Multiorgan Transplantation **STATE OF THE ART 4:** Infection	 Rooms 105 & 106 (Main Plenary) Room 104
12:30–13:30	**Lunch** **ECC "Meet the Researcher" Forum**	Exhibition Space Room 103
13:30–15:00	**Plenary 5: Astellas Sponsored Session** HLA and Solid Organ Transplantation	Rooms 105 & 106 (Main Plenary)
15:00–15:25	Afternoon tea	Exhibition Space
15:25–16:00	**The Great Debate: Cannabis use Should Be a Contraindication for Transplantation Eligibility**	Rooms 105 & 106 (Main Plenary)
16:00	**ASM Concludes**	

OFFICE BEARERS OF THE TRANSPLANTATION SOCIETY OF AUSTRALIA & NEW ZEALAND LIMITED

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Deputy Chair & Chair, Advisory Committees/Working Groups
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A/Professor Kavitha Muthiah
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Dr Handoo Rhee - Surgical Representative
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Paul Robertson - ATCA Representative
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Dr Matthew Peter Sypek (ASM)
Dr Melanie Wyld (FACT)
Dr George Javorsky
(Cardiothoracic SOTS convenor)
Professor Robert Jones
(Liver-Intestinal SOTS convenor)
A/Professor Ross Francis
(Kidney/Pancreas-Islet SOTS convenor)

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Mr Harry Robertson (FACT)
Dr David Darley
(Cardiothoracic SOTS convenor)
A/Professor Avik Majumdar
(Liver-Intestinal SOTS convenor)
Professor Natasha Rogers
(Kidney/Pancreas-Islet SOTS convenor)

Early Career Researchers' Committee

Georgina Irish – SA (Co-Chair)
Laura De Souza - QLD
Katharine Hegerty - QLD
Atharva Kale - NSW
Saskia Leibowitz - QLD
Aspasia Pefanis - VIC
Amir Shamshirian - QLD
Eric Son - NSW
Melanie Wyld - NSW

Griffith Perkins – SA (Co-Chair)
Madeleine Gill - NSW
Donna Hickling - QLD
Joshua Lee - NSW
Lachlan McMichael - SA
Amy Prosser - WA
Olivia Smibert - VIC
Karen Waller - NSW
Tracey Ying - NSW

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Ms Marina Katerelos
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PARTNERS

The Transplantation Society of Australia & New Zealand Limited gratefully acknowledges the support of the following companies in providing sponsorship for the Annual Scientific Meeting.

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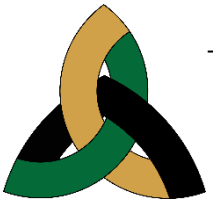

AWARDS

The Transplantation Society of Australia & New Zealand Limited gratefully acknowledges the support of the following companies for sponsoring awards presented at the Annual Scientific Meeting.

AWARDS

The President's Prize – Basic and Clinical Science
(supported by TSANZ)

Early Career Researcher Awards – Basic and Clinical Science
(supported by TSANZ)

Kidney Health Australia Awards

Mark Cocks Award and Forum
(supported by Transplant Australia)

Aviva Rosenfeld Award for Excellence in Patient Care in Transplantation
(supported by TSANZ)

Lafferty Award
(supported by TSANZ)

FINANCIAL STATEMENTS

Annual Financial Statements and Reports of the Directors and Auditor for the Company in respect of the period ended 31 August 2023 (during which the organisation was structured as an incorporated association) and in respect of the period ended 31 December 2023 (from which time the Company was restructured as a company limited by guarantee registered under the Corporations Act 2001 (Cth)) are available on the easily accessible member password protected section of the TSANZ website www.tsanz.com.au.

Dr Carole Guillonneau

Dr Guillonneau is Director of Research CNRS, head of team 2 at the Center of Research in Transplantation and Translational Immunology (CR2TI) in Nantes, France and director of the FOCIS Center of Excellence Nantes University. After a Postdoc in the laboratory of Nobel Laureate Prof. Doherty in Australia, she moved to Nantes and obtained a permanent position at the CNRS. She currently leads a team that focuses on the biology of $CD8^+$ Tregs, investigates their clinical potential and develops new therapies to replace conventional immunosuppression in the context of transplantation and immune-related diseases. She is the inventor of 19 patents, 5 of them licensed. She is co-founder and scientific advisor of the start-up Aboleris Pharma.

INVITED INTERNATIONAL SPEAKERS

Professor Gabriel Oniscu

Gabriel Oniscu is the Professor of Transplantation Surgery and Head of Transplant Division at the Karolinska Institutet in Stockholm. He completed his surgical and transplant training in Edinburgh, Birmingham and Kings College London and is a Fellow of the Royal College of Surgeons of Edinburgh and Royal College of Surgeons and Physicians in Glasgow. He is the past Director of the Edinburgh Transplant Centre and former Transplant Advisor to the Chief Medical Officer in Scotland.

His clinical focus is multi-organ transplantation. Gabriel has been one of the pioneers in the field of novel organ perfusion and preservation technologies in the UK and has made a significant contribution to the development of Normothermic Regional Perfusion in DCD donation.

He has a particular research interest in the role of technology in transplantation, organ perfusion and reconditioning and optical sensing.

Prof Oniscu is the recipient of the NRS Career Research Fellowship, an MRC confidence in concept award for technological developments relating to normothermic perfusion and an MRC Clinical Academic Research Partnership grant to investigate therapy delivery during *ex situ* liver perfusion. He published 135 papers, 15 book chapters, edited two books and gave over 100 invited lectures at international conferences.

Prof Oniscu is the President of the European Society for Organ Transplantation.

Professor Alexandre Loupy

Alexandre Loupy's research focuses on artificial intelligence and multi-organ transplantation analytics. It covers allograft transplantation, rejection, antibodies and population sciences. He defended two PhDs, one in cell biology (2011) and in biostatistics (2014).
Since 2015, He is the head of the Paris Expertise Centre for Organ Transplantation in PARCC.
In 2017 he has been appointed Prof. of Nephrology and Epidemiology at University Paris Cité Paris, France , in 2020 adjunct Professor at Cedars Sinaï, UCLA, Los Angeles, California , USA
He has authored 324 publications, 5 patents and software protections, and given 32 international invited conference since 2006.
He has received more than 10 awards for his work since 2008, the most recent of which are:

- Award of the ESOT European Society for Organ Transplantation (most impactful research team, 2017, 2019, 2021)
- 2021: MIT & Stanford University: Challenges and Opportunities in Organ Allocation
- 2021: US National Academies of Sciences –committee. (February, 5, 2021)
- 2020: Paul I Terasaki Clinical Sciences Award
- 2018: French National Academy of Medicine Award: prix de Académie de Médecine
- 2017: Clinical science investigator award: American Society of Transplantation

Since 2015 he is appointed Scientific Director of the International Banff Classification and is also an expert for the FDA, a member of the American Society of Transplantation and is involved in the French Society of Transplantation and in the European Society of Transplantation.

He is PI of national (RHU KTD-innov, iTRANSPLANT, Prix Emergence de la Ville de Paris, Prix Emergence en Recherche IdEX) and international grant (H2020 EU-TRAIN)

INVITED INTERNATIONAL SPEAKERS

Dr Gomathy Narasimhan

Senior Consultant- Liver & Renal Transplant Surgeon Dr.Rela Institute & Medical Centre, Chennai , India

- Experience in the field of Transplantation since 2001 , involved in close to 2500 liver transplantations and 1000 kidney transplants
- Key member of the steering committee which established cadaver transplant program in India in 2007
- Nearly 70 national & Intl publications & textbook chapters on Transplantation in India
- Helps promote Liver Transplant in Srilanka thro Knowledge sharing and capacity building with Ragama University in Colombo and Kandy University
- Special Interest:

1. Combined Liver and Kidney Transplant in Adults and Children, Focus Area - Primary Hyperoxaluria
2. Quality of life and awareness on lifestyle diseases post transplant

Honors and Accolades :

- First woman multi-organ transplant surgeon of India (Liver & Kidney)
- Recipient of several awards from surgical societies, key awards:

Young Investigator award from surgical society in 2001, 2004 (Malaysia) ,2014 (Korea)

- Vocational Excellence Award from Rotary International -2022
- LA Rennon Tanker Foundation - "For the Sake of honour Award" –Jan 2023
- Recipient of the prestigious award "Woman Leader in Transplantation" at Annual congress of "The Transplantation Society", Argentina , Sep 2022.

Sponsored by Women in Transplantation an Initiative of The Transplantation Society

INVITED SPEAKERS

Ged Kearny MP

Ged Kearney is the Federal Member for Cooper and the Assistant Minister for Health and Aged Care. Ged has served in the parliament since March 2018, when she was elected in a byelection. She is the first woman to hold the seat.

Ged started her working life as a nurse and rose to become Federal Secretary of the Australian Nursing Federation. From 2010, Ged served as the president of the ACTU – the peak body of Australia's union movement – where she fought for better conditions for Australian workers.

Ged's working life – from nurse to President of the ACTU to parliamentarian – has been about fighting for the rights of others.

She is a strong voice for social justice, workers' rights and universal healthcare inside Labor and the Parliament. Ged is a passionate advocate for the environment and throughout her career she has supported a humane response to refugees.

Ged was born and raised in Melbourne and lived in Cooper for over 25 years. Ged has four children, two stepdaughters and six much loved grandchildren

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INVITED SPEAKERS

Dr Peter Boan
Infectious Diseases Physician
Fiona Stanley Hospital, WA

Dr Adrienne Cohen
Nephrologist; Postgraduate Renal Transplant Fellow
Royal Prince Alfred Hospital, NSW

Dr Daniel Cox
General Surgery Registrar, Austin Health
Clinical Lecturer University of Melbourne, VIC

Dr Rohit D'Costa
Medical Director, DonateLife Victoria

A/Prof Rebecca Deans
Gynaecologist, The Royal Hospital for Women, NSW

Nicole Gaffney
Respiratory and Lung Transplant Physician
Alfred Health, VIC

A/Prof Bulang He
Director, Renal Surgery and Transplant
Austin Health, VIC

Georgina Irish
Nephrologist, Royal Adelaide Hospital
ANZDATA. SA

Dr Evie Kendal
Bioethicist and Public Health Scientist
Swinburne University of Technology, VIC

Dr Rowena Lalji
Centre for Health Services Research
Queensland Health, QLD

Prof Michaela Lucas
Group Leader, Immunology and Transplantation Laboratory
University of Western Australia Medical School WA

INVITED SPEAKERS

A/Prof Avik Majumdar
Transplant Hepatologist, Austin Health, VIC

Dr Tina Marinelli
Infectious Diseases Physician
Royal Prince Alfred Hospital, NSW

A/Prof Dominique Martin
Professor in Health Ethics and Professionalism
School of Medicine, Deakin University, VIC

Prof Stephen McDonald
Director of Dialysis and Nephrologist
The Central Northern Renal and Transplantation Service, Royal Adelaide Hospital SA

A/Prof Helen Opdam
National Medical Director
Australian Organ and Tissue Authority

Ms Kelli Owen
National Community Engagement Coordinator, NIKTT
University of Adelaide, SA

A/Prof Carlo Pulitano
Upper Gastrointestinal, Hepatobiliary, and Transplant Surgeon
Royal Prince Alfred Hospital, Sydney

A/Prof Matthew Roberts
Nephrologist, Eastern Health, VIC

Prof Natasha Rogers
Deputy Director, Centre for Transplant and Renal Research
The Westmead Institute for Medical Research, NSW

Dr Christine Russell
Transplant Surgeon
Royal Adelaide Hospital, SA

Dr Lana Sundac
Infectious Diseases Physician
Princess Alexandra Hospital, QLD

INVITED SPEAKERS

Prof Greg Snell
Head of Lung Transplant Service, Alfred Health VIC

Mr Graham Starkey
Hepatobiliary and Liver Transplant Surgeon, Austin Health, VIC

Dr Lucy Sullivan
Scientific Director, Transplantation and Immunogenetics Services
Australian Red Cross Lifeblood

Dr Emma Tully
Transplant Surgeon, Royal Melbourne Hospital, VIC

Sarah White
Project Manager, Kidney Allocation Working Group

Dr Melanie Wyld
Nephrologist, Westmead Hospital
Senior Lecturer, School of Public Health, University of Sydney, NSW

ABSTRACT REVIEW PROCESS AND PRESENTATION FORMATS

A total of 122 abstracts were submitted this year. Abstracts were blinded for authors and institutions and were reviewed by four reviewers (see below) assigned by the Scientific Program and Education Committee (SPEC). Reviewers did not review abstracts if a conflict of interest was identified. Reviewers scored between 6 to 12 abstracts and in general there was a close agreement between scores.

Three presentation formats will be used at the 2024 ASM. Free Communications session will have 4 oral presentations (12 min presentation, 3 min questions). 24 abstracts will be presented as mini-orals (4 min presentation, 1 min question) on Sunday evening and Monday morning. Abstracts will also be displayed as posters and the poster viewing sessions will be held during morning tea and lunch on Monday June 17. Presenters should be at their posters during the poster sessions to answer any questions from delegates.

The President's Prize (PP) will be awarded in two categories: Basic Science and Clinical. The highest-ranked abstracts from eligible applicants in both categories will be presented in a single PP session. The award in each category will be based on the quality of the abstract and the presentation on the day.

The reviewers of the abstracts for the TSANZ 2024 meeting were:

Stephen Alexander
Leyla Aouad
Eric Au
Michael Burke
Scott Campbell
Robert Carroll
Steve Chadban
Suet-Wan Choy
Philip Clayton
Toby Coates
Shlomo Cohney
Michael Collins
Peter Cowan
Nick Cross
Ian Dittmer
Karen Dwyer
Samantha Ennis
Helen Evans
Randall Faull
Ross Francis
Hilton Gock
David Goodman
Basu Gopal
David Gracey
Wayne Hancock
Wayne Hawthorne
Bulang He
James Hedley
Geoffrey Hill
Peter Hopkins
Min Hu
Frank Ierino
Ashley Irish
Georgina Irish
Nikky Isbel
Andrew Jabbour
Allison Jaure
Shilpanjali Jesudason
John Kanellis
Sean Kennedy
Jair Kwan
Angeline Leet
Bronwyn Levvey
Jennifer Li
Wai Lim
Tom Loudovaris
Grant Luxton
Peter Macdonald
John Mackintosh
Paul Manley
Rosemary Masterson
Tanya Mcwilliams
Solomon Menahem
William Mulley
Brian Nankivell
Eu Ling Neo
Kathy Nicholls
Kathy Paizis
Helen Pilmore
Henry Pleass
Chanel Prestidge
Janske Reiling
Veena Roberts
Amanda Robertson
Paul Robertson
Natasha Rogers
Brenda Rosales
Christine Russell
Jessica Ryan
Alex Sharland
Julian Singer
Lucy Sullivan
Matthew Sypek
Jeanette Villanueva
Karen Waller
Angela Webster
John Whitlam
Germaine Wong
Kate Wyburn
Nathan Zammit

The committee members thank these reviewers for their reviews and effort in supporting the meeting.

Wai Lim and Lucy Sullivan
Chairs of TSANZ Scientific Program

The Transplantation Society of Australia and New Zealand
Forty Second Annual Scientific Meeting

PROGRAM

Saturday, 15 June 2024

08:15–17:00	Frontiers and Challenges in Organ Transplantation (FACT) Day	Room 103
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11:00–18:00	Liver Meeting	Room 104
13:00–17:00	Council Meeting	Room 102

Sunday, 16 June 2024

08:30–12:00	Solid Organ Transplantation Symposium (SOTS) Liver	Room 104
09:30–15:00	Solid Organ Transplantation Symposium (SOTS) Cardiothoracic	Room 103
09:30–15:00	Solid Organ Transplantation Symposium (SOTS) Kidney/Pancreas-Islet	Rooms 105 & 106 (Main Plenary)

Sunday, June 16, 2024

13:30–15:00	**Registration**	Exhibition Space
12:30–14:30	**Mark Cocks Patient Forum** Sponsored by Transplant Australia	Room 101
15:10–15:20	**Welcome Ceremony**	Rooms 105 & 106 (Main Plenary)
15:20–15:30	**Official Opening:** *TSANZ President* Prof Kate Wyburn	Rooms 105 & 106 (Main Plenary)
15:30–16:00	**PLENARY 1: Astellas Sponsored Session** *Chair: Prof Kate Wyburn* **Evolving Diagnostics for the Allograft Biopsy: From Gene Expression to Artificial Intelligence Algorithms** Prof Alexandre Loupy	Rooms 105 & 106 (Main Plenary)
16:00–16:20	**Ian McKenzie Award Lecture** *Chair: Prof Kate Wyburn* **Lessons Learnt Using Preclinical Model of Liver, Kidney and Heart Transplantation** Prof Michaela Lucas	Rooms 105 & 106 (Main Plenary)
16:20–16:50	**Afternoon tea**	Exhibition Space
16:50–17:50	***CONCURRENT FREE COMMUNICATIONS SESSIONS*** **Free Communications 1: Immunological Complications of Transplantation** *Chairs: Prof Steve Chadban and Dr Griffin Perkins*	Rooms 105 & 106 (Main Plenary)

Abstract		
	— Oral presentations —	
1	16:50	**AN RCT OF INTRAVENOUS IMMUNOGLOBULIN (IVIG) VS STANDARD CARE IN CHRONIC ANTIBODY MEDIATED KIDNEY ALLOGRAFT REJECTION-VIPAR** WILLIAM MULLEY
2	17:05	**ABO INCOMPATIBLE KIDNEY TRANSPLANTS HAVE MORE EARLY REJECTION BUT COMPARABLE LONG-TERM GRAFT SURVIVAL: ANZDATA ANALYSIS** GEORGINA IRISH

Sunday, June 16, 2024

3	17:20	**MEMORY B CELLS, T-FOLLICULAR HELPER & T-REGULATORY-1 CELLS IN KIDNEY TRANSPLANT RECIPIENTS WITH ANTIBODY-MEDIATED REJECTION** KAYLA SINGLETON	
16:50–17:50		**Free Communications 2: Machine Perfusion#1** *Chairs:* Dr Calvin Peng and Dr Bao Zhong Wang	Room 104
Abstract		***— Oral presentations —***	
5	16:50	**HYPOTHERMIC OXYGENATED MACHINE PERFUSION REDUCES INCIDENCE OF NON-ANASTOMOTIC BILIARY STRICTURES IN DCD LIVER TRANSPLANTS** JAMES WALCOTT	
6	17:05	**IS EX-SITU NORMOTHERMIC MACHINE PERFUSION THE NEXT STEP IN PAEDIATRIC LIVER TRANSPLANTATION?** ANITA NIU	
7	17:20	**DEVELOPING A NORMOTHERMIC REGIONAL PERFUSION SERVICE: THE EARLY LEARNING EXPERIENCE** ASHVINI SHEKHAR	
8	17:35	**ESTABLISHMENT OF EX VIVO NORMOTHERMIC MACHINE PERFUSION TO SUPPORT ASSESSMENT AND UTILISATION OF MARGINAL DONOR KIDNEYS** QI RUI SOH	
16:45–17:45		**Free Communications 3: Donation and Organ Donors** *Chairs: A/Prof Bronwyn Levvey and A/Prof Helen Opdam*	Room 103
Abstract		***— Oral presentations —***	
9	16:50	**POTENTIAL DONOR FAMILIES' BEHAVIOUR AND EXPERIENCES FOLLOWING THE ORGAN DONATION DEEMED CONSENT ACT 2019 IN ENGLAND** LEAH McLAUGHLIN	
10	17:05	**A REVIEW OF DELAYED GRAFT FUNCTION IN ANZKX PROGRAM 2021-2023: IMPACT OF ISCHAEMIA TIMES ON TRANS TASMAN EXCHANGES** STELLA McGINN	
11	17:20	**ADVANCED DONOR AGE DOES NOT IMPACT GRAFT SURVIVAL IN A LARGE SINGLE CENTRE LUNG TRANSPLANT COHORT** ADREI DARIE	

Sunday, June 16, 2024

12	17:35	**KIDNEY TRANSPLANTATION OUTCOMES FROM UNCONTROLLED DONATION AFTER CIRCULATORY DEATH: A SYSTEMATIC REVIEW AND META-ANALYSIS** HUGH SCHRODER	
16:50–17:50	**Mini-Oral Session 1** *Chairs: Dr Siah Kim and Dr Sia Pefanis*		Room 102
Abstract	***— Mini-oral presentations —***		
13	16:50	**SUBLINGUAL MICROCIRCULATION AND FRAILTY: INSIGHTS FROM KIDNEY TRANSPLANT CANDIDATES** RYAN HOMES	
15	16:55	**HIGH RESOLUTION GENOMIC HLA TYPING IN DECEASED DONOR KIDNEY TRANSPLANTATION** ZHAN LIM	
16	17:00	**GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONISTS FOR WEIGHT LOSS IN HEART FAILURE PATIENTS CONSIDERED FOR HEART TRANSPLANTATION** SAMBAVAN JEYAKUMAR	
17	17:05	**ACCESS TO KIDNEY TRANSPLANT WAITLISTING FOR NSW MENTAL HEALTH SERVICE USERS** ANDREW BRODZELI	
18	17:10	**CHANGES IN B CELL PHENOTYPES IN PERIPHERAL BLOOD OF PATIENTS WITH LONG-SURVIVING RENAL TRANSPLANT** RANJE AL-ATIYAH	
19	17:15	**EXAMINATION OF SUBSETS OF CD4+ LYMPHOCYTE SUBPOPULATIONS IN PATIENTS WITH LONG SURVIVING RENAL TRANSPLANT** RANJE AL-ATIYAH	
20	17:20	**GENETIC TESTING SHOWS HIGH FREQUENCY OF MENDELIAN DISORDERS IN PAEDIATRIC KIDNEY TRANSPLANT RECIPIENTS** ANANYA DESHPANDE	
21	17:25	**THE ROLE OF TISSUE TYPING AND ANTIBODY ASSESSMENT IN FACILITATING AUSTRALIA'S FIRST UTERUS TRANSPLANT AND LIVE BIRTH** KEERTHI THAMOTHARAMPILLAI	
22	17:30	**FRAILTY PREDICTS UNPLANNED ADMISSIONS FOR LIVER TRANSPLANT CANDIDATES** HEIDI JOHNSTON	

Sunday, June 16, 2024

23	17:35	**CARBAPENEMASE- PRODUCING ENTEROBACTERALES (CPE): AN INCREASING THREAT TO AUSTRALIAN LIVER TRANSPLANT RECIPIENTS** DINULI KAMALADASA	
24	17:40	**EARLY EXPERIENCE WITH HYPOTHERMIC OXYGENATED MACHINE PERFUSION IN KIDNEY TRANSPLANTATION** SELVIN THEODORE JAYANTH DANIEL EZHILARASU	
17:50–18:30	**TTS - Women in Transplantation Session - Making a Difference** *Chair: Prof Kate Wyburn* **17:50** **Title of Talk** Dr Gomathy Narasimhan **16:25** **Title of Talk** Assistant Minister Ged Kearney		Rooms 105 & 106 (Main Plenary)
18:30–19:30	**Welcome Reception**		Exhibition Space

Monday, June 17, 2024

06:15–07:15	**TSANZ Fun Run/Walk** (5 km)	South Bank (Start/Finish meeting point – Melbourne Convention & Exhibition Centre)
07:30–08:00	**Coffee** with sponsors	Exhibition Space
08:00–09:40	**PLENARY 2: Joint TSANZ/OTA/ADTCA Session** **Expanding the Donor Pool** *Chairs: Dr Tanya McWilliams and A/Prof Basu Gopal* 08:00 **Opportunities for Australia to Expand Donation: Insights From International Practice** A/Prof Helen Opdam 08:10 **Improving Organ Utilization Within Situ Normothermic Regional Perfusion in Donation After Circulatory Death** Prof Gabriel Oniscu 08:40 **Legal and Ethical Complexities of Premortem and Postmortem Interventions for Donation** A/Prof Dominique Martin 09:00 **Expanding Living Kidney Donation in Australia: Barriers, Opportunities and the Next Steps We Need to Take** Dr Christine Russell 09:20 **Donation After Voluntary Assisted Death** Dr Rohit D'Costa (Donate Life Victoria)	Rooms 105 & 106 (Main Plenary)
09:40–10:40	***CONCURRENT FREE COMMUNICATIONS SESSIONS*** **Free Communications 4: Sex, Gender and Transplantation** *Chairs: Dr Nicole Gaffney and A/Prof Kathy Paizis* Abstract — ***Oral presentations*** — 25 09:40 **PREGNANCY AFTER KIDNEY TRANSPLANTATION: GLOBAL INSIGHTS BASED ON REGISTRY DATA FROM THREE CONTINENT** SHILPANJALI JESUDASON 26 09:55 **SEX DIFFERENCES IN HOSPITAL UTILISATION AFTER LIVING KIDNEY DONATION** ADRIENNE COHEN 27 10:10 **SEX DIFFERENCES IN RELATIVE CANCER SURVIVAL IN KIDNEY TRANSPLANT RECIPIENTS: A BI-NATIONAL STUDY, 1980-2019** BRENDA MARIA ROSALES	Rooms 105 & 106 (Main Plenary)

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28	10:25	**SEX DIFFERENCES IN CARDIOVASCULAR RISK AND KIDNEY FUNCTION: SERUM CREATININE VERSUS CYSTATIN C** JAMES HEDLEY	
09:40–10:40		**Free Communications 5: Clinical Aspects of Liver and Pancreas Transplantation** *Chairs: A/Prof Bill Mulley and Mr Michael Fink*	Room 104
Abstract		***— Oral presentations —***	
29	09:40	**THE IMPACT OF ISCHAEMIC TYPE BILIARY LESIONS ON HEALTH UTILITY AFTER DCD LIVER TRANSPLANTATION** ARUL SUTHANANTHAN	
30	09:55	**STATUS OF LIVER TRANSPLANTATION FOR CHOLANGIOCARCINOMA AND MIXED-TYPE HEPATOCELLULAR CARCINOMA IN ANZ (COMIT-ANZ)** GEORGINA RIDDIOUGH	
31	10:10	**THE EVOLUTION OF LATE LIVER RETRANSPLANTATION** ANGUS HANN	
32	10:25	**30 YEARS OF HISTORY, EVOLUTION, AND SURGICAL OUTCOMES OF PANCREAS TRANSPLANTS IN A SINGLE AUSTRALIAN CENTRE** DAVID SIEN CHIN SOON	
09:40–10:40		**Free Communications 6: Organ Preservation** *Chairs: A/Prof John Whitlam and Prof Natasha Rogers*	Room 103
Abstract		***— Oral presentations —***	
33	09:40	**IMPROVED RECOVERY OF RAT HEARTS AFTER COLD STORAGE BY ACID SENSING ION CHANNEL INHIBITOR HI1A VARIES WITH PRESERVATION SOLUTION** SANJAY DUTTA	
34	09:55	**TRANSCRIPTOMICS CHANGES AS A MARKER OF LIVER TRANSPLANT VIABILITY DURING NORMOTHERMIC PERFUSION** SOLAL CHAUQUET	
35	10:10	**INSIGHTS FROM INTEGRATED MULTIOMICS SHOW SPONTANEOUS LIVER DEFATTING DURING LONG-TERM NORMOTHERMIC MACHINE PERFUSION** ANITA NIU	

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36	10:25	**IMPROVING DONOR HEART PRESERVATION WITH FUNNEL WEB SPIDER VENOM AND THE ANTI-DIABETIC DRUG EMPAGLIFLOZIN** JEANETTE VILLANUEVA	
09:40–10:40		**Mini-Oral Session 2** *Chairs: Dr Lucy Sullivan and Prof Greg Snell*	Room 102
Abstract		***— Mini-oral presentations —***	
37	09:40	**EVALUATING THE POTENTIAL OF M101 AS A NOVEL OXYGEN CARRIER PRODUCTION IN LIVER GRAFT PRESERVATION** LOUISE BARBIER	
38	09:45	**TREATMENT WITH A SPECIFIC INHIBITOR OF THE COMPLEMENT LECTIN PATHWAY PROTECTS AGAINST RENAL ISCHEMIA-REPERFUSION INJURY IN MICE** ANJAN BONGONI	
39	09:50	**RENAL OUTCOMES OF NRP-DCD RECIPIENTS IN THE IMMEDIATE POST-OPERATIVE PERIOD: A COMPARISON WITH MATCHED DCD-SCS RECIPIENTS** ARUL SUTHANANTHAN	
40	09:55	**SHORT COURSE TOTAL LYMPHOID IRRADIATION POST HEART TRANSPLANT FOR RECALCITRANT REJECTION - A SINGLE CENTRE EXPERIENCE** FELICITY LEE	
41	10:00	**GIVING YOUNG PEOPLE THE RESOURCES THEY NEED TO MAKE DECISIONS SURROUNDING ORGAN AND TISSUE DONATION** BROOKE HUUSKES	
42	10:05	**INFECTION TRANSMISSION RISK FROM KIDNEY DONORS WITH ACTIVE HEPATITIS B: A SYSTEMATIC REVIEW AND META ANALYSIS OF OBSERVATIONAL DATA** KAREN WALLER	
43	10:10	**PRE-TRANSPLANT ANGIOTENSIN TYPE I RECEPTOR ANTIBODIES ARE ASSOCIATED WITH ACUTE KIDNEY INJURY POST-LUNG TRANSPLANT** ANDREI DARIE	
44	10:15	**DYNAMIC OF ANGIOTENSIN TYPE I RECEPTOR ANTIBODIES IS ASSOCIATED WITH POOR GRAFT FUNCTION FOLLOWING LUNG TRANSPLANT** ANDREI DARIE	

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45	10:20	**NEPHROLOGIST VIEWS ON DECEASED DONOR KIDNEY TRANSPLANT OFFER PROCESSES: A QUALITATIVE STUDY** ALISON WEIGHTMAN	
46	10:25	**THE IMPACT OF DONOR AND RECIPIENT DIABETES ON PATIENT AND GRAFT SURVIVAL IN RENAL TRANSPLANT RECIPIENTS** ALESSANDRA ORSILLO	
47	10:30	**SKIN CANCER MORTALITY IN KIDNEY TRANSPLANT RECIPIENTS: AN AUSTRALIAN COHORT STUDY USING LINKED HEALTH DATA, 1980-2019** DANA FORCEY	
10:40–11:10	**Morning tea and Poster Viewing**		Exhibition Space
11:10–12:50	**PLENARY 3: ThermoFisher Sponsored Session** **Transplant Immunology and Biomarkers** *Chairs: Prof Glen Westall and A/Prof Nikky Isbel*		Rooms 105 & 106 (Main Plenary)
	11:10	**Beyond Conventional Immunosuppression: New Therapeutic Approaches in Transplantation** Dr Carole Guillonneau	
	11:50	**Adding Data to the Crystal Ball: Using Prediction Models and Biomarkers to Assess Post-Transplant Outcomes** Prof Alexandre Loupy	
	12:20	**CD47 Blockade in Transplantation** Prof Natasha Rogers	
	12:35	**Making sense of angiotensin receptor antibodies in Solid Organ Transplantation** Dr Lucy Sullivan	
12:50–13:35	**Lunch and Poster Viewing**		Exhibition Space
13:35–15:35	**President's Prize Symposium** *Chair: TSANZ President, Prof Kate Wyburn*		Rooms 105 & 106 (Main Plenary)
	— Oral presentations —		
49	13:35	**INTEGRATING ARTIFICIAL INTELLIGENCE IN ORGAN TRANSPLANTATION DIAGNOSTICS: A COMPREHENSIVE EVALUATION USING THE PROMAD ATLAS** HARRY ROBERTSON	

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50	13:50	**IS LONG-TERM (>7 DAYS) EX-SITU NORMOTHERMIC MACHINE PERFUSION CAPABLE OF INDUCING REGENERATION IN HUMAN LIVERS?** ANITA NIU	
51	14:05	**INULIN SUPPLEMENTATION IMPROVES GLYCAEMIC CONTROL IN ACUTE KIDNEY TRANSPLANT RECIPIENTS – RESULTS FROM THE DIGEST TRIAL** JULIAN SINGER	
52	14:20	**DRUG REPURPOSING IN THE CONTEXT OF ACUTE KIDNEY INJURIES** AADHAR MOUDGIL	
53	14:35	**THE IMPACT OF FEMALE SEX AND INTERSECTIONAL DISADVANTAGE ON ACCESS TO DECEASED KIDNEY TRANSPLANTATION IN AUSTRALIA** TENNILLE VITAGLIANO	
54	14:50	**A STANDARDISED METHOD OF MULTI-VISCERAL ORGAN RETRIEVAL FOR TESTING EX VIVO MACHINE PERFUSION IN A LARGE ANIMAL MODEL** ROHAN BHATTACHARJYA	
55	15:05	**INTRAGRAFT MRNA CHANGES WITH INTRAVENOUS IMMUNOGLOBULIN VERSUS STANDARD CARE IN CHRONIC ANTIBODY MEDIATED REJECTION-VIPAR RCT** DHAKSHA THARMARAJ	
56	15:20	**CHARACTERISING PANCREATIC ORGANOIDS FROM HEREDITARY PANCREATITIS PATIENTS** JAMES ZUIANI	
15:35–16:00		**Afternoon tea and Poster Viewing**	Exhibition Space
16:00–17:00		***CONCURRENT FREE COMMUNICATIONS SESSIONS***	
		Free Communications 7: Transplant Epidemiology *Chairs: Dr Georgina Irish and Dr Cara Wasywich*	Rooms 105 & 106 (Main Plenary)
Abstract		***— Oral presentations —***	
57	16:00	**THE EPIDEMIOLOGY OF HEREDITARY PANCREATITIS IN AUSTRALIA AND ITS EFFECT ON PATIENT OF TOTAL PANCREATECTOMY WITH ISLET AUTO-TRANSPLANTATION** DENGHAO WU	

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58	16:15	**TRENDS IN HOSPITAL UTILISATION AMONG CHILDREN BORN TO TRANSPLANTED MOTHERS IN THEIR FIRST DECADE OF CHILDHOOD** SHILPANJALI JESUDASON	
59	16:30	**KIDNEY TRANSPLANT WAITLIST OUTCOMES AFTER DECLINE OF FIRST DECEASED DONOR KIDNEY OFFER: A DATA LINKAGE STUDY 2006-2019** ANGELA WEBSTER	
60	16:45	**COMMON CANCER TRANSMISSION & NON-TRANSMISSION IN DECEASED ORGAN DONORS & TRANSPLANT RECIPIENTS: NSW DATA-LINKAGE STUDY 2010-2018** BRENDA ROSALES	
16:00–17:00	**Free Communications 8: Infectious Complications of Transplantation** *Chairs: A/Prof Matthew Roberts and Dr Jeanette Villanueva*		Room 104
Abstract	***— Oral presentations —***		
61	16:00	**SEROLOGICAL RESPONSES AND CLINICAL OUTCOMES TO 3-DOSE COVID-19 VACCINATION IN KIDNEY TRANSPLANT AND DIALYSIS RECIPIENTS** DHAKSHA THARMARAJ	
62	16:15	**EXPOSURE TO ANAEROBIC ANTIBIOTICS AND RISK OF ALLOGRAFT REJECTION FOLLOWING LIVER TRANSPLANT** OLIVIA SMIBERT	
63	16:30	**BK NEPROPATHY IN KIDNEY TRANSPLANTATION WHERE ALEMTUZUMAB IS USED AS AN INDUCTION AGENT -PREVALANCE MANAGEMENT GRAFT OUTCOME)** ARUN PRAKAS RAMASWAMI	
64	16:45	**KIDNEY TRANSPLANTATION OF HEPATITIS C VIRAEMIC DONORS TO HEPATITIS C NEGATIVE RECIPIENTS: A SINGLE-CENTRE AUSTRALIAN EXPERIENCE** JESSICA SUN	
16:00–17:00	**Free Communications 9: Machine Perfusion#2** *Chairs: Mr Arul Suthananthan and Mr Ruelan Furtado*		Room 103
Abstract	***— Oral presentations —***		
65	16:00	**DELIVERY OF REGULATORY T-CELL THERAPY VIA EX-SITU MACHINE PERFUSION OF THE LIVER** ANGUS HANN	

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66	16:15	**LIVER MACHINE PRESERVATION AT ROOM TEMPERATURE USING AN OXYGENATED, ACELLULAR PERFUSATE: A PILOT STUDY** SHANTANU BHATTACHARJYA	
67	16:30	**PHYSIOLOGICAL ASSESSMENT OF SMALL BOWEL GRAFT VIABILITY UNDER DIFFERENT EX VIVO MACHINE PERFUSION (EVMP) CONDITIONS** SHANTANU BHATTACHARJYA	
68	16:45	**A BLUE PETER APPROACH TO MACHINE PERFUSION FOR ORGAN PRESERVATION** ROHAN BHATTACHARJYA	
17:00–17:45		**TSANZ Annual General Meeting**	Rooms 105 & 106 (Main Plenary)
18:30–22:30		**TSANZ Annual Awards Dinner**	Showtime Events Centre, South Wharf Promenade

Tuesday, June 18, 2024

07:30–08:00	**Coffee** with sponsors	Exhibition Space
08:00–09:30	**PLENARY 4: Astellas Sponsored Session** **Equity in Transplantation** *Chairs: Prof Angela Webster and Dr Olivia Smibert* 08:00 **Outcomes and Insights From the National Indigenous Kidney Transplant Taskforce (NIKTT)** Prof Stephen McDonald and Ms Kelli Owen 08:30 **Sex and Gender in the Transplant Workforce** Dr Melanie Wyld 09:00 **Shared Decision Making in Transplantation: Communicating Risk and Empowering Patients** Dr Georgina Irish	Rooms 105 & 106 (Main Plenary)
09:30–10:30	***CONCURRENT STATE OF THE ART SESSIONS*** **STATE OF THE ART 1: Xvivo Sponsored Session** **Machine Perfusion Technologies in Transplantation** *Chairs: Dr James Walcott and A/Prof Bulang He* 09:30 **Machine Perfusion in Abdominal Solid Organ Transplantation, Updates and Controversies** Prof Gabriel Oniscu 09:50 **Organ Repair and Optimisation Using Long-Term Perfusion** A/Prof. Carlo Pulitano 10:10 **Chronic GVHD Treatment Options** Dr Daniel Cox	Rooms 105 & 106 (Main Plenary)
09:30–10:30	**STATE OF THE ART 2** **Fertility and Transplantation** *Chairs: A/Prof Shilpa Jesudason and Dr Samantha Ennis* 09:30 **Fertility and Pregnancy Outcomes After Solid Organ Transplantation** Dr Nicole Gaffney 09:50 **Update on Clinical Outcomes of Uterine Transplant in Australia and New Zealand** A/Prof Rebecca Deans 10:10 **Ethics of Assisted Fertility in Transplantation: From IVF to Uterine Transplant** Dr Evie Kendal	Room 104

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10:30–11:00	**Morning tea**	Exhibition Space
11:00–12:30	***CONCURRENT STATE OF THE ART SESSIONS***	
	STATE OF THE ART 3: Xvivo Sponsored Session	Rooms 105 & 106 (Main Plenary)
	Focus on Multiorgan Transplantation *Chairs: Prof Robert Jones and A/Prof Darren Lee* 11:00 **Lung Plus: The Growing Need for Additional Organs in Patients With Multisystem Diseases** Prof Greg Snell 11:30 **Controversies in Multiorgan Transplantation: Sequential vs Combined Organ Transplantation** Mr Graham Starkey 12:00 **Controversies in Multiorgan Transplantation: Organ Allocation** Sarah White	
11:00–12:30	**STATE OF THE ART 4**	Room 104
	Infection *Chairs: A/Prof Katherine Barraclough and Prof Orla Morrissey* 11:00 **Donor Derived Infection in Solid Organ Transplantation** Dr Peter Boan 11:30 **Updates on the Prevention and Treatment of CMV in Solid Organ Transplantation** A/Prof Matt Roberts 12:00 **Antibiotic Resistance and Novel Therapies for Multi Drug Resistant Organisms** Dr Lana Sundac	
12:30–13:30	**Lunch**	Exhibition Space
	ECC "Meet the Researcher" Forum	Room 103

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13:30–15:00	**PLENARY 5: Astellas Sponsored Session** **Frontiers in Transplantation** *Chairs: A/Prof Helen Pilmore and A/Prof Rosemary Masterson* 13:30 **Advancing Treg Cell Therapies to the Clinic** Dr Carole Guillonneau 14:00 **Neonatal and Paediatric Donors: Risks and Benefits of Prioritizing Young Donor Organs to Young Recipients** A/Prof Bulang He 14:20 **Matchability Scores in Organ Allocation: Balancing the Risks and Benefits for Paediatric Candidates and Ethnic Minorities** Dr Rowena Lalji 14:40 **Microbial Contamination in ex-vivo Machine Perfusion: a Hidden Risk of Organ Reconditioning** Dr Tina Marinelli	Rooms 105 & 106 (Main Plenary)
15:00–15:25	**Afternoon tea**	Exhibition Space
15:25–16:00	**The Great Debate: It is Only a Matter Oof Time Before Chat GPT Replaces Transplant Physicians (But we Will Always Need a Surgeon!)** *Moderator:* Pro team: Chat GPT-4 and A/Prof Avik Majumdar Con team: Dr Emma Tully and Prof Alexandre Loupy Pro Team, speaker 1 Con Team, speaker 1 Pro Team, speaker 2 Con Team, speaker 2 Pro Team rebuttal (if required) Con Team rebuttal (if required)	Rooms 105 & 106 (Main Plenary)
16:00	**ASM Concludes**	

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69	**THE ROLE OF GASDERMIN D AND PYROPTOSIS IN ACUTE KIDNEY INJURY AND LONG-TERM KIDNEY DAMAGE AFTER TRANSPLANTATION.** KARLI SHAW
70	**T CELL RECEPTORS AND THE TRANSCRIPTOMIC PROFILE OF T CELLS IN TRANSPLANT** MIN HU
71	**SUCCESSFUL OUTCOMES FROM SIMULTANEOUS LUNG-KIDNEY TRANSPLANTATION- A SINGLE CENTRE EXPERIENCE** SAMANTHA ENNIS
72	**DO THE ORGANMATCH NON-RENAL MATCHING ALGORITHMS IDENTIFY COMPATIBLE RECIPIENTS FOR TRANSPLANT?** REBECCA SCAMMELL
73	**MICROBIAL DIVERSITY. ANTIBIOTIC PROPHYLAXIS AND THEIR INFLUENCE ON TIME TO EXTUBATION IN LUNG TRANSPLANT RECIPIENTS** EUN HO CHOE
74	**EVALUATING THE ACCURACY OF ANZDATA RECORDED CAUSE OF DEATH AMONGST TRANSPLANT RECIPIENTS** MELISSA LEVY
75	**LUNG TRANSPLANTATION FOR SHORT-TELOMERE INTERSTITIAL LUNG DISEASE: OUTCOMES FROM AUSTRALIA** LAI-YING ZHANG
76	**HOW BIG IS OUR BLIND SPOT? ESTIMATING THE BURDEN OF ORGAN FAILURE UNMET BY TRANSPLANTATION IN THE USA** LACHLAN MCMICHAEL
77	**ANTI-INTERLEUKIN-6 ANTIBODY TREATMENT IS PROTECTIVE IN A MOUSE MODEL OF KIDNEY ISCHEMIA-REPERFUSION INJURY** ANJAN BONGONI
78	**WHOLE BLOOD VERSUS PLASMA TACROLIMUS TROUGH CONCENTRATIONS DURING PREGNANCY AND THEIR IMPACT ON OUTCOMES** SHILPA JESUDASON
80	**SHORT-TERM MACHINE PRESERVATION AT ROOM TEMPERATURE IS NOT INFERIOR TO STATIC COLD STORAGE FOR DECEASED DONOR KIDNEYS** SHANTANU BHATTACHARJYA

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81	**5-YEAR GRAFT SURVIVAL AND INCIDENCE OF CMV AND BK VIREMIA IN KIDNEY TRANSPLANTATION IN CENTRAL AUSTRALIA** JESSIE-ANNE MASCARO
82	**ACTIVATION OF HUMAN CD4+CD25+CD127LO TREG WITH ALLOANTIGEN AND RIL-2 INDUCES IFNGR** RANJE AL-ATIYAH
83	**GANCICLOVIR-RESISTANT CYTOMEGALOVIRUS DISEASE: THE TROLL OF TRANSPLANTATION** CLAIRE JOHNSTON
84	**BOOSTING THE LONGEVITY AND STEMNESS OF SARS-COV-2 MEMORY T CELL WITH MTOR INHIBITOR (MTORI) IN TRANSPLANT RECIPIENTS** CHENG SHENG CHAI
85	**A MULTICENTRE RANDOMISED TRIAL OF DIETARY INULIN TO IMPROVE SARS-COV-2 VACCINE RESPONSE IN KIDNEY TRANSPLANT RECIPIENTS** JULIAN SINGER
86	**HISTOLOGICAL COMPARISON OF PANCREAS PRESERVED BY MACHINE PERFUSION AND STATIC COLD STORAGE** ROHAN BHATTACHARJYA
87	**IMPLEMENTING A VALUES-DRIVEN POLICY IN A COMPLEX SYSTEM: WHAT HAPPENED WHEN DEEMED CONSENT WAS IMPLEMENTED IN ENGLAND?** LEAH MC LAUGHLIN
88	**UTILITY AND THERAPEUTIC IMPLICATIONS OF PHARMACOGENOMIC TESTING IN KIDNEY TRANSPLANT RECIPIENTS (KTR)** SHARON HO
89	**DECISION SUPPORT TOOL TO AID RISK ASSESSMENT OF ACCEPTING VERSUS DECLINING A KIDNEY OFFER FROM A DONOR WITH A HISTORY OF CANCER** JAMES HEDLEY
90	**A PILOT RANDOMISED CONTROLLED TRIAL OF ADVANCED RECOVERY ROOM CARE POST LIVING DONOR KIDNEY TRANSPLANTATION** KARTHIK VENKATARAMAN
91	**LIVING DONOR DEMOGRAPHICS IN AUSTRALIA: HAVE DISPARITIES INCREASED OVER TIME?** ROSE-MARIE SCARLATO

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92	**TRANSCRIPTOMIC ANALYSIS IDENTIFIES AIM2 INFLAMMASOME GENE SIGNATURE IN BK POLYOMAVIRUS ASSOCIATED NEPHROPATHY** LACHLAN DAVIDSON
93	**UTILITY OF 6 AND 12 MONTH SURVEILLANCE BRONCOHSCOPY WITH TRANSBRONCHIAL LUNG BIOPSY IN LUNG TRANSPLANT RECIPIENTS** BREE-ANNA GADSBY
94	**SHORT COURSE TOTAL LYMPHOID IRRADIATION PRE-HEART TRANSPLANT FOR HIGHLY SENSITIZED RECIPIENTS** FELICITY LEE
96	**SIR-ZOSTER: IMMUNOGENICITY OF RECOMBINANT ZOSTER VACCINATION IN KIDNEY TRANSPLANT RECIPIENTS AND HEALTHY COHABITANTS** GRIFFITH PERKINS
97	**OXYGENATED MACHINE PRESERVATION OF MULTI-VISCERAL BLOCKS FOR TRANSPLANTATION IN A LARGE ANIMAL MODEL** SHANTANU BHATTACHARJYA
98	**ROLE OF PHARMACOGENOMICS IN DECEASED DONOR KIDNEY TRANSPLANTATION: A CASE REPORT** ZHAN LIM
99	**CHRONIC KIDNEY DISEASE IN NON-KIDNEY SOLID ORGAN TRANSPLANT: A SINGLE CENTRE EXPERIENCE** ZHAN LIM
100	**TOFACITINIB AS SALVAGE IMMUNOSUPPRESSIVE THERAPY AFTER LUNG TRANSPLANTATION** STEVEN IVULICH
101	**A QUALITATIVE CONTENT AND DISCOURSE ANALYSIS COMPARING THE CONSENT SYSTEMS FOR DECEASED ORGAN DONATION IN SPAIN AND ENGLAND** LEAH MC LAUGHLIN
102	**SEQUENTIAL KIDNEY TRANSPLANT IN PATIENTS WITH A PREVIOUS LUNG TRANSPLANT: A CASE SERIES** LILY VOGIATZIS
103	**PRO-INFLAMMATORY CYTOKINE LEVELS IN BABOON RECIPIENTS OF GENETICALLY MODIFIED PORCINE NEONATAL ISLET CELL CLUSTERS** EVELYN SALVARIS

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104	**HUMAN HERPES VIRUS 8 DISEASE AMONG LIVER TRANSPLANT RECIPIENTS: CASE SERIES AND SYSTEMATIC REVIEW OF LITERATURE** KAREN WALLER
105	**CHRONIC HEPATITIS E MASQUERADING AS ALLOGRAFT REJECTION IN A LIVER TRANSPLANT RECIPIENT** SAM THORBURN
106	**ADDRESSING QUALITY-OF-LIFE AFTER PAEDIATRIC LIVER TRANSPLANTION. CO-DESIGNING PRACTICE CHANGE TO IMPROVE OUTCOMES** KATHE HOLMES
107	**HUMAN CD4+CD25+CD127LO TREG IN VITRO ACTIVATION WITH ALLOANTIGEN AND RIL-4 INDUCES RECEPTOR FOR INTERLEUKIN 5 (IL-5RÎ‘)** RANJE AL-ATIYAH
108	**SAFETY AND EFFICACY OF MV140 SUBLINGUAL VACCINE IN PREVENTING RECURRENT URINE INFECTIONS POST RENAL TRANSPLANT: A CASE SERIES** BENJAMIN PALLADINO
109	**UTILITY OF BARIATRIC SURGERY TO INCREASE ACCESS TO RENAL TRANSPLANTATION: A SINGLE-CENTRE STUDY** JULIA TEMLETT
110	**VIRTUAL CROSSMATCHING: HISTORICAL SAG TESTING MAY NOT ACCURATELY REFLECT CURRENT RECIPIENT ANTIBODY PROFILE AT KIDNEY OFFER** KENNETH YONG
111	**IS THERE AN EDITORIAL GLASS CEILING? A GENDER-BASED CROSS-SECTIONAL ANALYSIS OF NEPHROLOGY AND TRANSPLANTATION JOURNALS** ROSE-MARIE SCARLATO
112	**A DECADE OF KIDNEY TRANSPLANT BIOPSY: ADEQUACY, COMPLICATIONS AND DIAGNOSES** DANIEL HIRSCH
113	**CHALLENGES AND MANAGEMENT APPROACH TO ENDOVASCULAR ANEURYSM REPAIR AND KIDNEY TRANSPLANTATION: A SYSTEMATIC REVIEW** ANGUS PEGLER

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Abstract	*— Poster —*
114	**CLINICAL OUTCOMES OF COVID-19 INFECTION IN SOUTH AUSTRALIAN LUNG TRANSPLANT SATELLITE CENTRE COHORT** SAM BROOKES
115	**GENDER DISPARITIES IN LIVE KIDNEY DONATION- A SINGLE CENTRE RETROSPECTIVE ANALYSIS** RAMYASUDA SWAMINATHAN
116	**RECTUS SHEATH PATCH. A NOVEL SURGICAL TECHNIQUE IN THE REPAIR OF ISOLATED RENAL PELVIS NECROSIS IN A TRANSPLANTED KIDNEY** SEBASTIAN PRIMROSE
117	**EARLY PTLD IN THE NATIVE LUNG OF A SINGLE LUNG TRANSPLANT RECIPIENT: A CASE REPORT** WILLIAM ZHOU
118	**TRANSCRIPTOMICS IN BK POLYOMAVIRUS ASSOCIATED NEPHROPATHY: A SCOPING REVIEW** LACHLAN DAVIDSON
119	**BOILING WATER ATP TISSUE EXTRACTION: A NOVEL BENCHMARKING TECHNIQUE FOR ORGAN VIABILITY ASSESSMENT** ROHAN BHATTACHARJYA
120	**MANAGING GANCICLOVIR UL97 RESISTANT CYTOMEGALOVIRUS DISEASE AND RECURRENT CELLULAR REJECTION IN A RENAL TRANSPLANT RECIPIENT** SAMANTHA CARIA
121	**“ETHICAL DILEMMA IN KIDNEY TRANSPLANT” ARE WE DISADVANTAGING SMOKERS BY EXCLUDING THEM FROM KIDNEY TRANSPLANTATION?** HUMAM HAZIM
122	**A RETROSPECTIVE REVIEW: UTILITY OF RADIOLABELLED WHITE CELL SCANS IN DETECTING OCCULT INFECTIONS IN RENAL TRANSPLANT RECIPIENTS.** ASHVINI SHEKHAR

Abstract No. 1

AN RCT OF INTRAVENOUS IMMUNOGLOBULIN (IVIG) VS STANDARD CARE IN CHRONIC ANTIBODY MEDIATED KIDNEY ALLOGRAFT REJECTION-VIPAR

MULLEY W[1], THARMARAJ D[1], POLKINGHORNE K[2], TESCH G[1], DAYAN S[3], KWAN E[3], OLSHANSKY M[4], MARK T[5], LEE D[6,7], MOUNT P[7], WONG G[8], WYBURN K[9], LIM W[10], KERR P[5], NIKOLIC-PATERSON D[5], KANELLIS J[5]

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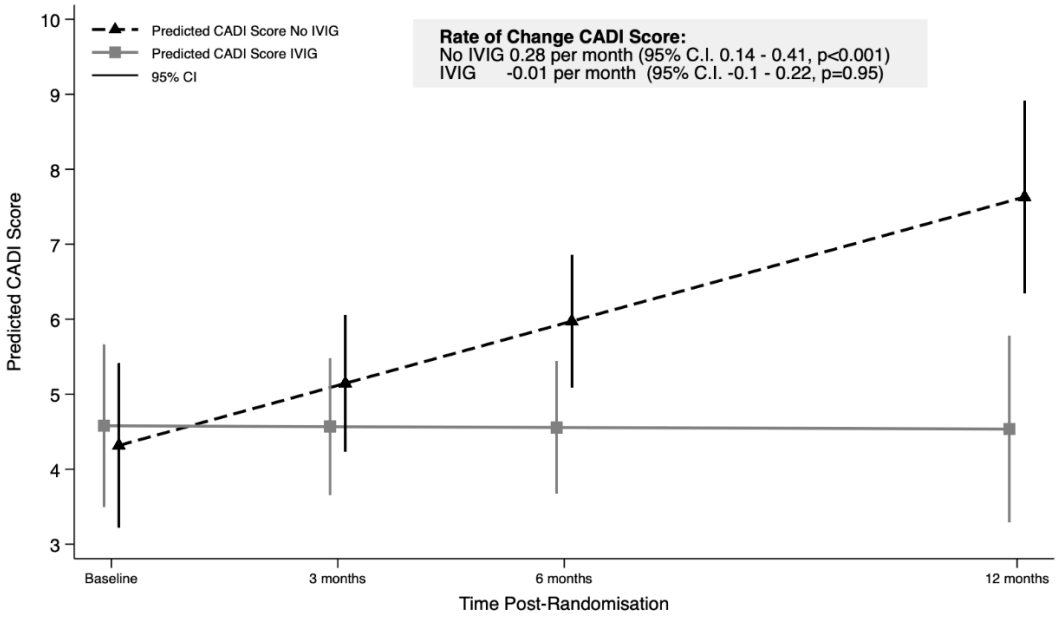
Background: Chronic antibody mediated rejection (cAMR) is a dominant cause of kidney allograft loss but has no proven effective therapy.

Aims: To determine if IVIg is effective treatment for; and its mechanisms of action in, cAMR.

Methods: A multicentre randomised controlled trial, in patients with biopsy-proven cAMR, compared 6 doses (1gm/kg/month) of IVIg (n=15) to no-IVIg (n=15) (ACTRN12612000252819). The primary outcome was change in chronic allograft damage index (CADI) score, assessed by biopsy at 0,3,6 and 12-months. Secondary outcomes included: change in eGFR and DSA-MFI, allograft and patient survival. Intragraft gene expression was assessed by Nanostring (B-HOT panel). Outcomes were assessed using linear mixed models.

Results: Mean age was 56.1years (SD 12.1), 22 were male and mean eGFR was 41.0ml/min/year (SD 13.6). CADI scores increased in the no-IVIg group and were stable in the IVIg group (Figure, interaction, p=0.003). Over 2-years, eGFR declined more rapidly in the no-IVIg group (-10.1ml/min/year, 95% CI -13.2, -6.9) compared to the IVIg group (-3.6ml/min/year, 95%CI -6.5, -0.6, interaction p=0.003) while there were 5 graft losses and 2 deaths in the no-IVIg and 3 graft losses and no deaths in the IVIg group. DSA MFIs were not reduced by IVIg relative to no-IVIg. Intragraft expression of 59 genes (particularly B-cell related) reduced significantly with IVIg relative to no-IVIg.

Conclusions: IVIg therapy was associated with reduced deterioration in allograft injury and function in cAMR. This was not associated with reduced DSA production but may relate to intragraft effects. IVIg should be considered for patients with cAMR.



Abstract No. 2

ABO INCOMPATIBLE KIDNEY TRANSPLANTS HAVE MORE EARLY REJECTION BUT COMPARABLE LONG-TERM GRAFT SURVIVAL: ANZDATA ANALYSIS

IRISH G

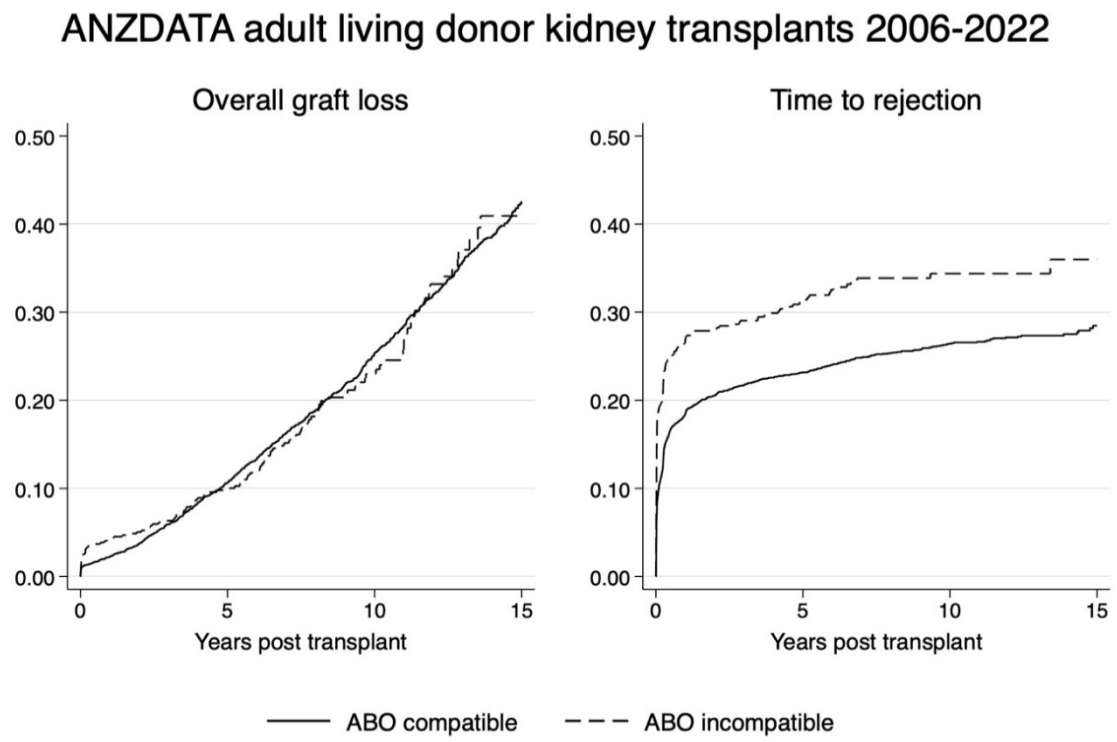
Transplant Epidemiology Group (TrEG), Australia and New Zealand Dialysis and Transplant (ANZDATA) Registry, South Australian Health and Medical Research Institute (SAHMRI), Adelaide

Background: ABO incompatible (ABOi) kidney transplantation accounted for 12% of living donor kidney transplants in Australia and New Zealand (ANZ) in 2022. Despite this, long term outcomes have not been evaluated in this population.

Methods: We included all ANZ adult living donor kidney transplants from 2006–2022. We used Cox proportional hazards models to assess the primary outcomes of graft and patient survival, and the secondary outcome of time to acute rejection. Due to violation of the proportional hazards assumption follow-up was split at 1 month for graft survival and rejection.

Results: 5161 kidney transplants occurred, of which 629 (12.2%) were ABOi. ABOi transplant recipients were older (median age: ABOi:50 years IQR:36-58, ABO compatible (ABOc):47 years IQR:35-58) and more frequently male (ABOi:68.5%, ABOc:62.5%). There was no difference in graft survival between ABOi and ABOc recipients (month 1 aHR:1.21 95%CI 0.51-2.88;p=0.66, >1 month aHR:0.86 95%CI 0.69-1.07; p=0.18)). Patient survival was not different (aHR:0.80 95%CI 0.61-1.03;p=0.09). However, ABOi recipients experienced higher acute rejection rates within one month (month 1 aHR:1.66, 95%CI 1.34–2.05; p<0.00) with increased acute antibody mediated (month 1 aHR:3.12, 95%CI 2.19–4.48; p<0.001) and cellular rejection episodes (month 1 aHR:1.43 95%CI 1.10–1.85; p=0.007). There were no statistically significant differences in acute rejection after one month.

Conclusions: ABOi transplantation in ANZ is associated with an increased rate of early rejection compared with ABOc transplantation, but equivalent patient and graft survival. These results support the continuation of ABOi transplantation for selected patients.



Abstract No. 3

MEMORY B CELLS, T-FOLLICULAR HELPER ANDA T-REGULATORY-1 CELLS IN KIDNEY TRANSPLANT RECIPIENTS WITH ANTIBODY-MEDIATED REJECTION

SINGLETON K[1], ROSALES B[2], WAN S[3], DE LA MATA N[4], GUNASEGARAN B[5], WEBSTER A[6], MCGUIRE H[2], FAZEKAS B[7], WYBURN K[9]

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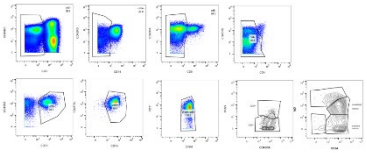
Aims: We sought to characterise changes in B-memory (B_{mem}) and T-follicular helper (TFH) cell subsets in patients who developed antibody-mediated rejection (ABMR) and stable recipients, in pre- and post-transplant samples.

Methods: T_{FH}, T-regulatory-1 (TR1), and switched and unswitched B_{mem} cells were identified in peripheral blood of a cohort of 22 kidney transplant recipients (12 with stable function and 10 with ABMR) via cytometry by time-of-flight. We identified CD19+CD27+CD24+ B_{mem} cells, subtyped into switched (IgD-) and unswitched (IgD+) (Fig 1a), and CD4+CXCR5+ T_{FH} cells, subtyped into CCR5+PD-1+ TR-1 cells (Fig 1b) using manual gating. Students' t-tests were used to compare cell populations in recipients.

Results: We found a higher proportion of CD27+ B-cells in ABMR than stable patients at day 7 (p=0.07) and day 30 (p=0.02), but no statistical difference pre-transplant. Higher proportion of switched relative to unswitched B_{mem} cells in ABMR vs stable recipients at pre-transplant (p=0.05), day 7 (p=0.05), day 90 (p=0.02), and day 30 (p=0.09). The average proportion of TR1 within T_{FH} cells decreased in recipients with ABMR (mean -1.7, IQR -3.13 - -0.30) and increased in stable recipients (mean 0.3, IQR -0.65-1.77) from pre-transplant to day 7 (p=0.01).

Conclusion: An increased proportion of switched/unswitched B-memory cells and a decreased proportion of regulatory T cells / TFH were observed in ABMR compared to stable recipients across several time points. Correlation to rejection timepoint and a larger cohort study may provide further understanding of underlying mechanisms and provide insights into predicting rejection risk.

1a)



1b)

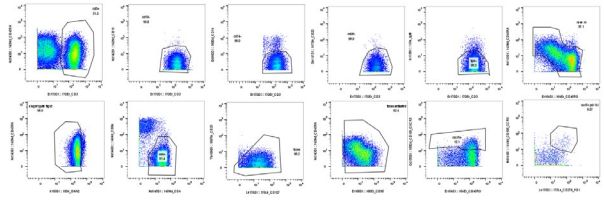


Figure 1: a) Manual B-cell gating protocol; samples were gated for CD3-CD14-CD8-CD4-CD20+CD19+ singlets, then CD27+ (memory) cells identified as unswitched (CD24+IgD+) or switched (CD24+IgD-);
Figure 2 b) Manual T-cell gating protocol; samples were gated for CD3+CD19-CD14-CD20-IgM- singlets, then CD4+ (T_H) cells gated as CD25-CD127+CD95+ (activated conventional T-cells). CXCR5+ T_{FH} cells selected for, and the PD1+CCR5+ TR1 subset identified

Abstract No. 5

HYPOTHERMIC OXYGENATED MACHINE PERFUSION REDUCES INCIDENCE OF NON-ANASTOMOTIC BILIARY STRICTURES IN DCD LIVER TRANSPLANTS

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Aims: Hypothermic oxygenated machine perfusion (HOPE) has been shown to reduce the incidence of non-anastomotic biliary strictures (NAS), acute kidney injury (AKI) and early allograft dysfunction (EAD) in DCD livers compared with static cold storage (SCS). The aim of this study is to assess the outcomes of the largest UK cohort of DCD liver transplants using HOPE.

Method: Data from HOPE-DCD liver transplants since October 2020 were prospectively collected. Outcomes including EAD, NAS, AKI and need for dialysis, were compared against an historical cohort of SCS-DCD liver transplants.

Results: 40 HOPE-DCD liver transplants were included in this study compared with 80 SCS-DCD. Median follow up was 17.4 months for HOPE-DCD and 47.6 for SCS-DCD. Mean time on HOPE perfusion was 162 mins (+/-51). The 12-month graft survival was 91.7% vs 87.5% (p=0.51) for HOPE and SCS respectively. EAD occurred in 25.0% of HOPE-DCD compared to 41.3% for SCS-DCD (0.48, CI 0.20-1.10, p=0.08). 10% of HOPE-DCD patients required dialysis compared to 20% in SCS-DCD (OR 0.44, CI 0.14-1.43, p=0.17). Incidence of NAS was 5% for HOPE-DCD, compared to 25% for SCS-DCD (OR 0.15, CI 0.04-0.71, p=0.02). Of the 22 cases of NAS, there were no cases of graft loss for those treated with HOPE compared with 7 cases of graft loss (35%) for those that were not (p=0.31), with a median graft survival of 8.8 months in this group.

Conclusion: This study demonstrates a reduction in the incidence of NAS for HOPE-DCD liver transplantation.

Abstract No. 6

IS EX-SITU NORMOTHERMIC MACHINE PERFUSION THE NEXT STEP IN PAEDIATRIC LIVER TRANSPLANTATION?

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Background: Paediatric patients are currently excluded from ex-situ normothermic machine perfusion (NMP) of livers due to challenges of perfusing smaller grafts, risk of portal hyperperfusion injury, and preference to utilise optimal grafts. We aim to evaluate the use of a preclinical model to perfuse left lateral segment grafts (LLSG) using NMP.

Methods: Human livers were split into LLSG and extended right grafts (ERG) and perfused using our long-term NMP protocol. The LLSG consisted of segments 2 and 3 with the coeliac trunk, left portal vein and left hepatic duct, to simulate a realistically sized split graft used in clinical practice. Portal hyperperfusion was determined through venous and arterial haemodynamic parameters. Biochemical markers of portal hypertension were measured. Hyperperfusion injury was assessed using histopathological signs of small for size syndrome (portal tract, lobular, regenerative, and vascular changes).

Results: Ten LLSGs, including 6 from DCD donors, were included. The mean survival time was 6.7 days, with the one graft surviving up to 13 days. LLSGs had higher perfusion parameters than ERGs, requiring higher portal vein pressure targets for adequate flow, and increased hepatic artery pressures and flows. There was no difference in histological signs of hyperperfusion injury between LLSGs and ERGs. Endothelin-1 levels, reflecting portal hypertension and endothelial cell dysfunction, did not increase.

Conclusion: This is the first preclinical model to demonstrate that NMP of LLSGs is technically possible without apparent portal hyperperfusion injury. This opens the opportunity to expand the use of marginal grafts (including DCD donors) in paediatric liver transplantation.

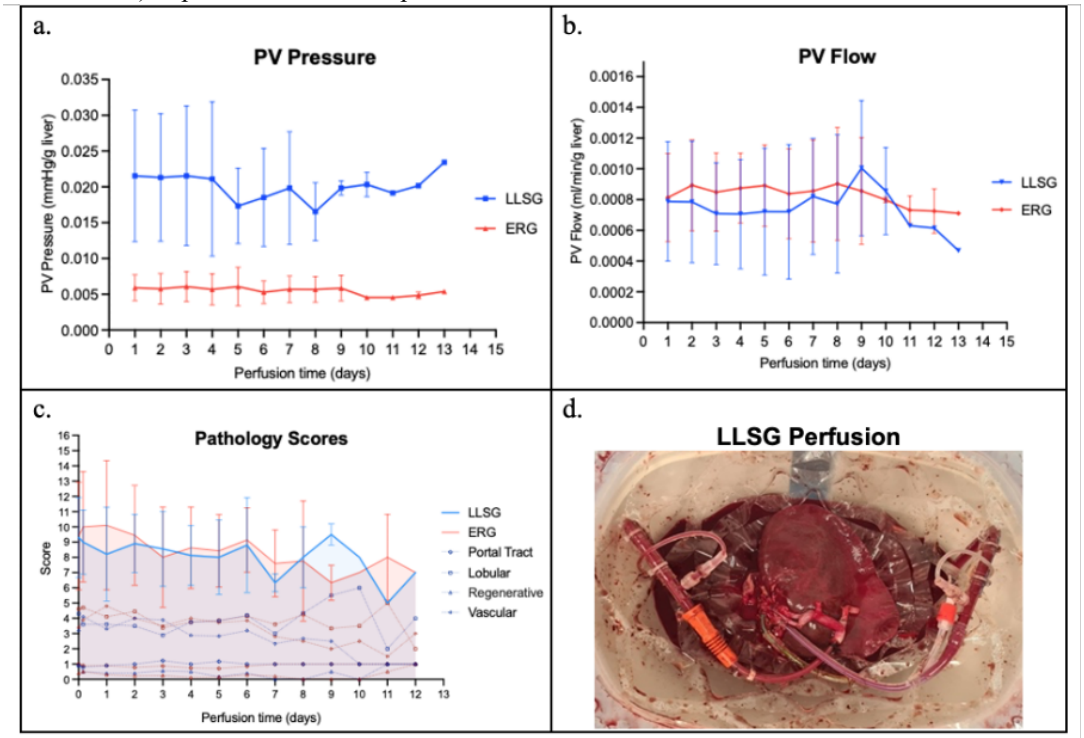

Figure 1. NMP of the LLSG (a) Perfusion parameters: Portal Vein Pressure of LLSG and ERG. **(b)** Perfusion parameters: Portal Vein Flow of LLSG and ERG. **(c)** Histopathological score for signs of hyperperfusion injury across domains of portal tract, lobular, regenerative, and vascular changes. **(d)** Image of the perfusion of a LLSG.

Abstract No. 7

DEVELOPING A NORMOTHERMIC REGIONAL PERFUSION SERVICE: THE EARLY LEARNING EXPERIENCE

SUTHANANTHAN AE, SHEKHAR, A CLARKE G, HALLE-SMITH J, PAPAMICHAIL M, RAZA S, MANGCO J, NUTU A, DASARI B, BARTLETT D, MATEOS RS, ROBERTS K, PERERA T, MERGENTAL H

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Introduction Utility of Normothermic Regional Perfusion (NRP) is now established in the post-mortem assessment and optimisation of cardiac-death (DCD) organ donors. DCD-NRP organ retrievals is predicted to become routine practice in the United Kingdom over the next decade. However, establishing a new service involving novel technology remains challenging; with high technical, logistical, and knowledge demands. This narrative explores the step-by-step process we undertook to establish our NRP programme, and our initial results.

Methods Stakeholder engagement and support from surgeons, anaesthetists, intensivists, hepatologists and management was key in the initial steps of developing the programme. The commissioning phase included obtaining appropriate funding, surgeon and perfusionist training, and establishing mentorship under established UK centres. Service provision began in February 2022 with a single surgeon and perfusionist offering an ad-hoc service, later expanding as we accrued experience.

Results Over 24 months, we attended 27 NRP retrievals (Figure 1) from which 43 kidneys and 13 livers have been transplanted. Three livers initially declined by all centres were assessed in-situ and successfully transplanted with good patient outcomes. Our centre is now independent for the provision of NRP services; with the team expanded to 3 NRP surgeons and 3 NRP perfusionists. In our DCD-NRP cohort, no incidences of ischaemic-type biliary lesions or primary non-function have been identified, with 100% 90-day graft and patient survival.

Conclusion Establishing an NRP programme presents significant challenges with a steep learning curve which once navigated, can be rapidly expanded with improved organ utility and graft outcomes.

Abstract No. 8

ESTABLISHMENT OF EX VIVO NORMOTHERMIC MACHINE PERFUSION TO SUPPORT ASSESSMENT AND UTILISATION OF MARGINAL DONOR KIDNEYS

SOH QR[1], BAGHANI-AVAL H[1], EZHILARASU J[1], FURTADO R[1], STEVEN M[1], SKENE A[2], PEFANIS A[3], WHITLAM JB[1], HE B[1]

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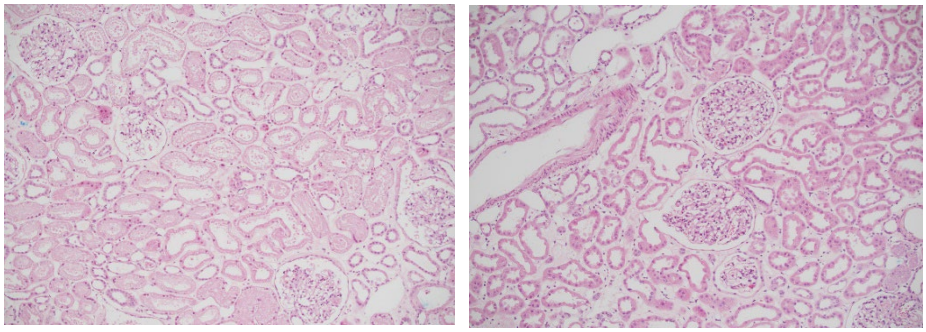
Aims This pilot study examines the role of *ex vivo* normothermic machine perfusion (NMP) in the evaluation of deceased donor kidneys at increased risk of non-utilisation. We aim to develop local experience with NMP for a clinical study.

Methods In collaboration with DonateLife Victoria and with consent of donor families, six deceased donor kidneys that were declined for use in transplantation were perfused with a red blood cell-based perfusate for 2 hours using an *ex vivo* NMP. Kidneys were evaluated using Nicholson & Hosgood criteria through macroscopic assessment, measurement of renal blood flow, and urine output. Perfusate samples were collected for blood gas and electrolyte analysis, and kidney biopsies were collected pre- and post NMP.

Results All six kidneys (two DCD, four DBD) showed excellent perfusion on macroscopic assessment (scoring 1), with all producing urine. The median urine output was 480 mL over 2 hours, and median renal blood flow was 196 mL/minute. The perfusate (intrinsic) creatinine level decreased significantly over the perfusion period from 151 to 82 µmol/L (p=0.02). Histopathology showed a Remuzzi score of ≤3 in all cases (Figure 1, 2).

Conclusion In this small cohort, all 6 non-utilised deceased donor kidneys demonstrated viability and early function with no instances of failed perfusion. This pilot study successfully established the necessary skills and processes for *ex vivo* NMP of kidneys at our centre and will now be translated to a clinical trial. The significant reduction in perfusate (intrinsic) creatinine levels presents an interesting finding that merits further investigation.

Figure 1: Pre NMP (image on left) and Post NMP (image on right)



Abstract No. 9

POTENTIAL DONOR FAMILIES' BEHAVIOUR AND EXPERIENCES FOLLOWING THE ORGAN DONATION DEEMED CONSENT ACT 2019 IN ENGLAND.

MC LAUGHLIN L[1], NOYES J[1], AL-HABOUBI M[2], WILLIAMS L[2], BOSTOCK J[2], BOADU P[2], MAYS N[2]

[1]School of Medical and Health Sciences, Bangor University, UK, [2]Policy Innovation Research Unit, London School of Hygiene and Tropical Medicine, UK

Aim: In May 2020, England implemented "deemed consent" legislation to reduce barriers to consent for deceased organ donation. We studied the experiences, behaviour and decisions of families who were approached about organ donation after their relative died to understand better how families influenced consent rates.

Methods: Semi-structured interviews with people involved in organ donation discussions, feedback from specialist nurses, comparisons with routine potential donor audit data, stakeholder feedback and public involvement. Framework analysis informed by utilitarian theory.

Results:103 participants were interviewed representing 83 cases. 31/83 (37%) cases fully supported organ donation, 41/83 (37%) supported retrieval of some organs, tissues and procedures and 11/83 (13%) declined completely. Overall consent rates have fallen since implementation. Families struggled to comprehend the complex processes involved in organ donation. Specialist nurses were critical in supporting families. Families most frequently asked themselves if their relative would have wanted to have the retrieval surgery, rather than whether the deceased wanted to save lives. Families unpicked the deceased's decision in life and superimposed their own values and judgements to challenge and overturn consent.

Conclusion: Despite a change in legislation, family behaviour did not appear to align with the utilitarian assumptions implicit in the 2019 Act to benefit people requiring transplants. Family members not supportive (of deemed consent, in particular) believed that donation would cause them and the deceased additional harms. They opted for what they thought would benefit them or their family the most rather than to provide the maximum benefit to unknown others.

Abstract No. 10

A REVIEW OF DELAYED GRAFT FUNCTION IN ANZKX PROGRAM 2021-2023: IMPACT OF ISCHAEMIA TIMES ON TRANS TASMAN EXCHANGES

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[1]Renal and Transplantation Unit, Royal North Shore Hospital, [2]Renal and Transplantation Unit, Royal Melbourne Hospital, [3]ANZKX and Tissue Typing Laboratory Victoria, Australian Red Cross Life Blood, [4]Renal and Transplantation Unit, Auckland City Hospital, New Zealand

With new Trans-Tasman routes for Australian and New Zealand Paired Kidney Exchange Program (ANZKX) the risk of increased cold ischaemic times may impact on delayed graft function rates.

Aims: An audit of ischaemic times has been performed to assess the impact on delayed graft function (DGF) (as per ANZDATA definition).

Methods:. ANZKX has collated outcome data from participating units at one-month post-transplant since January 2021. A retrospective review was done to assess factors that may impact on delayed graft function.

Results: 193 kidney transplants occurred from 1 January 2021-31 December 2023. The incidence of delayed graft function was 5.7% (11 patients). All were left kidneys and 7 had multiple vessels. There were 28 Trans-Tasman and 14 East-West Coast transplants, and none had delayed graft function. The average cold ischaemic time for Trans-Tasman exchanges was 10 hours 40 mins ± 33 mins.

The cold ischaemic time for transplants with DGF was 6 hours 32 mins ±54 mins and was similar to those with immediate graft function (IGF) 6 hours 54 mins ±13mins.

Mean donor age was similar between DGF and IGF patients at 51 ± 3 years. 8 of the recipients with DGF were on dialysis and 2 had previous transplants.

Conclusions: Trans-Tasman exchanges are associated with a cold ischaemic time of over 10 hours. However, the incidence of delayed graft function in ANZKX transplants does not correlate with longer cold ischaemic times and other contributing factors need to be explored. Patients can be reassured that Trans- Tasman exchanges are associated with good outcomes.

Abstract No. 11

ADVANCED DONOR AGE DOES NOT IMPACT GRAFT SURVIVAL IN A LARGE SINGLE CENTRE LUNG TRANSPLANT COHORT

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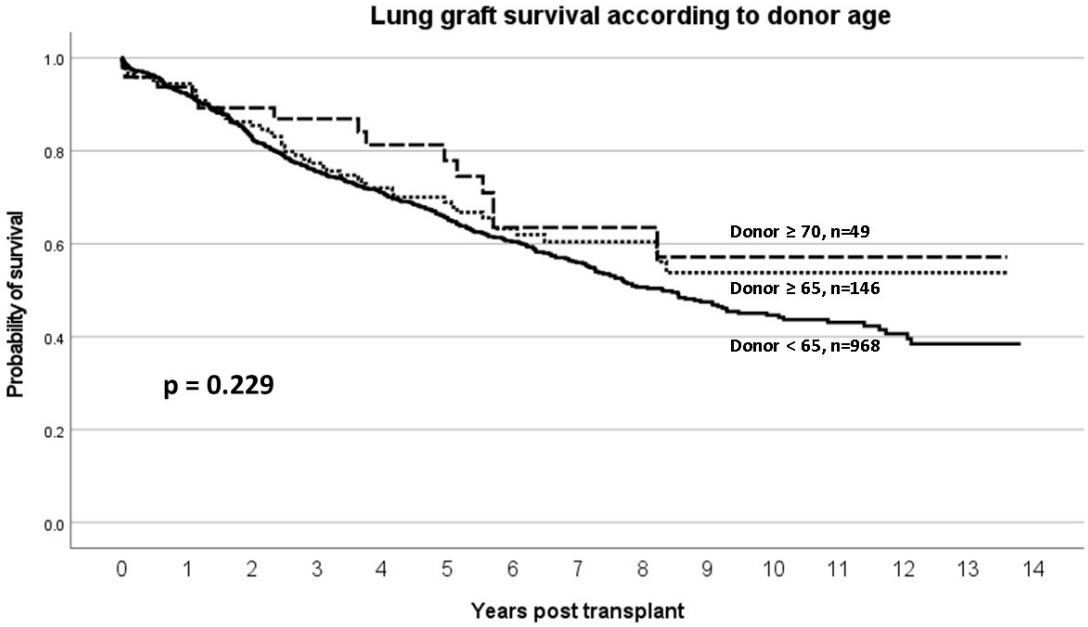
Introduction The scarcity of donor lungs for lung transplant (LTx) drives wait-list mortality for patients with end-stage lung disease. Thus, LTx centres in Australia and Europe have increasingly accepted age-extended criteria donor lungs for LTx- a practice not common in the USA. Nevertheless, long term data on older lung graft outcomes is limited.

Methods In this single-centre, retrospective analysis we included 1114 LTx performed at The Alfred between 2010- 2024 and compared graft survival (ie time to death or re-LTx) outcomes between donors aged < or ≥65years. All potential donors ≥65 yrs had mandatory chest CT assessment.

Results Mean age of LTx recipients was 52±16yrs, 56.5% were male and the mean follow-up was 4.8±3.5yrs. The most prevalent LTx indication was COPD (37%). Older donors were used in 146/1114 (13%) of all LTx. LTx recipients of older donors were themselves older 58 ± 11yrs vs 52 ± 16 yrs, p<0.001. However, there was no difference in graft survival for older donor lungs (median graft survival <65 yrs 8.3±0.5 vs ≥65yrs 8.5±0.5 yrs, p=0.255, or <70 yrs 8.5±0.6 vs ≥70yrs 8.5±0.5 years, p=0.186). Additionally, there was no difference in the cause of death (malignancy vs infection vs CLAD vs other, p=0.438). Re-LTx occurred more often in the younger donor group (5.2% vs 1.4%, p=0.043).

Conclusions Contrary to earlier US reports, graft survival is similar for lungs retrieved from donors <65, compared with donors ≥65(or even 70 yrs). Appropriately assessed age-extended lungs should be routinely considered for clinical LTx.

Figure 1. LTx Graft survival according to donor age



Abstract No. 12

KIDNEY TRANSPLANTATION OUTCOMES FROM UNCONTROLLED DONATION AFTER CIRCULATORY DEATH: A SYSTEMATIC REVIEW AND META-ANALYSIS

SCHRODER H[1], VIJAYAN K[1], HAMEED A[2], HITOS K[2], LO W[3], LAURENCE J[4], YOON P[2], NAHM C[2], LIM W[5], LEE T[2], YUEN L[2], WONG G[6], PLEASS H[2]

[1]School of Medicine, University of Sydney, [2]Department of Surgery, Westmead Hospital, Sydney, [3]Institute of Urology and Nephrology, Kuala Lumpur General Hospital, Malaysia, [4]Royal Prince Alfred Hospital, Sydney, [5]Department of Renal Medicine, Sir Charles Gairdner Hospital, Perth, [6]Department of Renal Medicine, Westmead Hospital, Sydney

Background: Uncontrolled donation after circulatory death (uDCD) is a potential additional source of donor kidneys. This systematic review investigated uDCD kidney transplant outcomes to determine if these are comparable to controlled donation after circulatory death (cDCD).

Methods: MEDLINE, Cochrane and Embase databases were searched. Data on demographic information and transplant outcomes were extracted from included studies. Meta-analyses were performed, and risk ratios (RR) were estimated to compare transplant outcomes from uDCD to cDCD.

Results: Nine cohort studies were included, from 2178 uDCD kidney transplants. There was a moderate degree of bias, as four studies did not account for potential confounding factors. The median incidence of primary non-function (PNF) in uDCD was 12.3%, versus 5.7% for cDCD (RR: 1.85; 95% CI 1.06-3.23; P=0.03, I^2=75). The median rate of delayed graft function (DGF) was 65.1% for uDCD and 52.0% for cDCD (RR: 1.27; 95% CI 1.09-1.48; P=0.002; I^2=74%). The median 1-year graft survival for uDCD was 82.7% compared to 87.5% for cDCD (RR: 1.43.; 95% CI 1.02-2.01; P=0.04, I^2=71%). The median 5-year graft survival for uDCD and cDCD was 70% each. Notably, the use of normothermic regional perfusion (NRP) improved PNF rates in uDCD grafts.

Summary: In conclusion, if uDCD grafts survive beyond the first year, longer term outcomes are comparable to cDCD, which may be facilitated by technologies such as NRP. Therefore, uDCD kidneys could be used to expand the donor pool within Australia and New Zealand.

Abstract No. 13

SUBLINGUAL MICROCIRCULATION AND FRAILTY: INSIGHTS FROM KIDNEY TRANSPLANT CANDIDATES

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Aims: Frailty, marked by a decline in physiological reserves, is more prevalent among those with chronic kidney disease. Maintaining healthy tissue largely depends on adequate microcirculation. There is a hypothesis suggesting that dysregulated microcirculation may contribute to the reduced physiological reserve in frail individuals. This study examines the relationship between frailty index scores, altered gait, strength (phenotypical traits), and sublingual microcirculatory health in a population eligible for renal transplant candidacy.

Methods: The study involved 44 participants (22 male and 22 female) aged between 46 and 64, attending the Transplant Assessment Clinic at the Queensland Kidney Transplant Service in Brisbane, Australia. Microcirculatory measurements were obtained sublingually using the AVA MicroScan system, adhering to the parameters specified in the roundtable manuscript. Gait analysis utilized the LEGSYS+ system, while strength was assessed using a handgrip dynamometer equipped with a 300KG load cell. Frailty was evaluated through the Rockwood frailty index questionnaire. Univariate analysis was performed to assess the relationship between Frailty Index scores and these parameters, with their significance ranked using machine learning.

Results: Significant associations were observed between the Frailty Index (FI) and all microcirculatory and strength parameters, while no associations were found with gait parameters. Machine learning identified microcirculation parameters as the strongest predictors of frailty index scores.

Conclusions: In summary, FI scores correlated with a decline in microcirculatory health and strength, but not gait. Machine learning emphasised microcirculation parameters as the key predictors, providing insight on the underlying physiological reserve decline of frailty in renal disease patients.

Abstract No. 15

HIGH RESOLUTION GENOMIC HLA TYPING IN DECEASED DONOR KIDNEY TRANSPLANTATION

LIM Z[1], CHAU M[1], LOPEZ DA CRUZ P[2], LE C[3], FARZANEH BOROUMAND F[4], GATELY R[5], TAVERNITI A[6], TEIXEIRA-PINTO A[4], WONG G[7], LIM W[1]

[1]Department of Renal Medicine, Sir Charles Gairdner Hospital, Perth, [2]School of Medical and Health Sciences, Edith Cowan University, Joondalup, [3]Department of Clinical Immunology, PathWest, Fiona Stanley Hospital, [4]School of Public Health, University of Sydney, [5]Nephrology and Renal Transplant, Princess Alexandra Hospital, Brisbane, [6]Centre for Kidney Research, The Children's Hospital at Westmead, Sydney, [7]Renal Transplant Unit, Westmead Hospital, Sydney

Aim: HLA compatibility remains the standard triage test for the allocation of deceased donor kidneys in Australia. Low/intermediate-resolution molecular HLA typing is typically available at the time of allocation, but given the importance of HLA matching, we aimed to determine whether high-resolution molecular HLA typing can identify missed HLA mismatches and improve post-transplant allo-immune risk stratification.

Methods: Consecutive deceased-donor/recipient pairs from a single centre between 2016-2020 were retyped using high-resolution next-generation sequencing (NGS) at HLA-A,-B,-DRB1 and extended alleles (HLA-C,-DRB3/4/5,-DQA,-DQB,-DPA,-DPB). We compared the number of HLA-mismatches and development of dnDSA between NGS vs. low/intermediate-resolution typing results. C-statistics for each model evaluating the association between low/intermediate-resolution typing at HLA-A,-B,-DRB1, NGS-typing at HLA-A,-B,-DRB1, and NGS-typing at the extended alleles were calculated.

Results: Of 179 donor/recipient pairs, 92 (51%) developed acute rejection (79/92 acute cellular, 13/92 antibody-mediated rejection). NGS-typing identified an additional 16 (9%) HLA-A mismatches, 16 (9%) HLA-B mismatches, and 60 (33%) HLA-DRB1 mismatches compared to low/intermediate resolution typing. The C-statistics of the models for acute rejection of low/intermediate-resolution typing at HLA-A,-B,-DRB1, NGS-typing at HLA-A,-B,-DRB1, and NGS-typing at the extended alleles were 0.59, 0.61 and 0.59 ($p>0.05$ across groups). Of the additional mismatches identified by NGS-typing (but matched by low/intermediate-resolution typing), 2 (9.5%) of dnDSA were directed against HLA-A, none against HLA-B and none against HLA-DRB1 loci.

Conclusion: NGS-typing provides a more accurate assessment of HLA compatibility and may identify those who may develop dnDSA post-transplant. However, NGS-typing at HLA-A,-B,DRB1 or at the extended alleles do not improve the discrimination for acute rejection compared to low/intermediate-resolution typing.

Abstract No. 16

GLUCAGON-LIKE PEPTIDE-1 RECEPTOR AGONISTS FOR WEIGHT LOSS IN HEART FAILURE PATIENTS CONSIDERED FOR HEART TRANSPLANTATION

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Aims: Morbid obesity is a major exclusion criterion for heart transplantation, with a body mass index (BMI) <35 kg/m^2 recommended prior to transplant listing per current guidelines. There is limited research into the safety and efficacy of GLP-1 RA for weight loss as a bridge to candidacy for heart transplantation.
Methods: We retrospectively analysed medical records of outpatients with end-stage heart-failure (ESHF) being considered for heart transplantation at our institution between June 2022 and October 2023. Recruited patients were commenced on 1mg subcutaneous semaglutide weekly, and demographic data, cardiac function, and transplant listing status were evaluated pre- and post-GLP-1 RA use.
Results: Nine patients (100% male, mean age: 54.5 ± 8.2 years) with ESHF (mean LVEF: 19.4 ± 0.1%) and severe obesity (mean pre-GLP-1 RA BMI: 36.3 ± 3.4 kg/m^2) were prescribed semaglutide for a mean duration of 5 months (range: 1 – 16 months). All patients experienced substantial weight loss with GLP-1 RA (mean post-GLP-1 RA BMI: 34.7 ± 2.5 kg/m^2); pairwise comparisons showed a mean BMI reduction of 1.6 kg/m^2 (mean weight change: –4.8kg). Subsequently, 7 patients (77.8%) were transplant listed and continued on GLP-1 RA, and 1 patient underwent heart transplantation (11.1%). No significant adverse effects were observed in any patient.
Conclusion: We have demonstrated for the first time, GLP-1 RA are a safe and effective bridge to heart transplantation candidacy for patients with severe obesity, allowing life-saving treatment in patients otherwise precluded from transplantation. Larger studies will inform the inclusion of GLP-1 RA in transplant guidelines.

Abstract No. 17

ACCESS TO KIDNEY TRANSPLANT WAITLISTING FOR NSW MENTAL HEALTH SERVICE USERS

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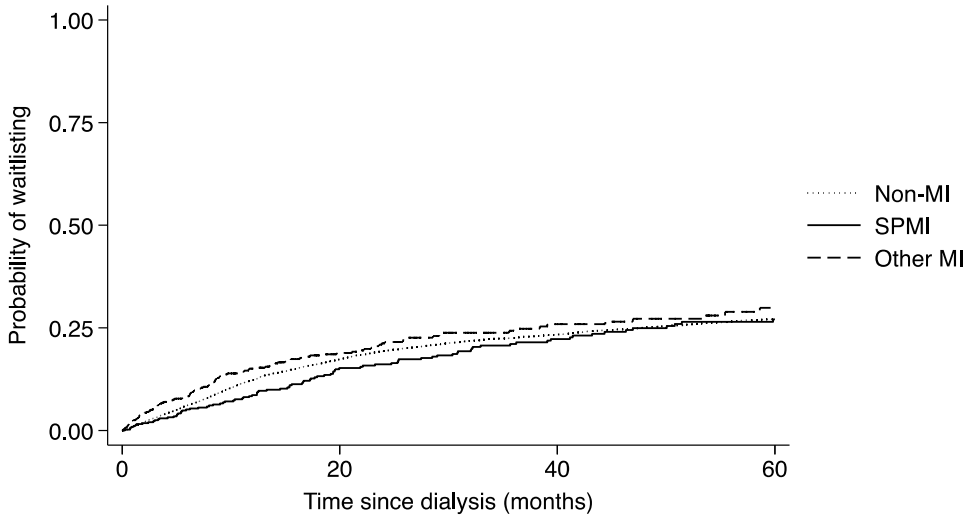
Aims: We aimed to describe whether people with prior mental health (MH) service use experience delayed access to waitlisting for Kidney Replacement Therapy (KRT) compared to other NSW residents.

Methods: Data from ANZDATA linked with NSW administrative datasets from the Mental Health Living Longer cohort were used including all adult patients receiving KRT in NSW, 2006-2020. Rates of prior MH service contact were described, and a subgroup with evidence of severe and persisting mental illness (SPMI) defined. Time to waitlisting from start of KRT was estimated by mental health status using Kaplan-Meier estimates.

Results: Of 11,536 patients in the study population, 2,089 (18.2%) were identified as MH service users, including 641 (5.6%) with SPMI, and 1448 (12.6%) with other MH conditions. MH service use predated KRT for 531 (82.8%) of the SPMI group and 820 (56.6%) other MH service users. Females comprised a higher proportion of the SPMI group (41.2%) compared to the other MH (36.1%) and no MH (36.1%) groups. MH service users were younger (SPMI mean age 53.2, other MH 57.2) than those with no MH (63.5 years). Crude time to waitlisting by MI is shown in Figure 1. In total, 22.1% of patients were waitlisted.

Conclusions: Preliminary results suggest delayed KRT access for people with SPMI, but earlier access for people with other MH conditions, compared to those without MH service use. Further analysis is needed to account for potential confounders. Our findings will assist to understand inequities in health care delivery for people living with mental illness and chronic kidney disease.

Figure 1. Kaplan-Meier curve for time to waitlisting for kidney dialysis patients by pre-existing mental health service user status, NSW 2006-2020



Abstract No. 18

CHANGES IN B CELL PHENOTYPES IN PERIPHERAL BLOOD OF PATIENTS WITH LONG-SURVIVING RENAL TRANSPLANT

RAKESH P[1], ZAHOROWSKA B[2], DIEP J[2], CHEUNG J[2], WU P[2], AL-ATIYAH R[1], SURANYI M[2], SPICER T[2], WONG J[2], TRAN G[1], HODGKINSON SJ[3], HALL BM[4], VERMA ND[1]

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Background and Aims Studies on renal transplant recipients with operational tolerance have identified changes in B cell subsets. We studied B cells in renal transplant patients with a graft surviving >10years (RT) on immunosuppression. Populations of $CD4^+$ and $CD8^+$ T cells, NK cells, B cells, and B cell subpopulations of RT (n=23) were compared to healthy volunteers (HV, n=13).

Methods T, B and NK cells were examined using a 6-colour TBNK reagent (BD) (CD3/CD4/CD8/CD45/CD19/CD16&CD56). Peripheral blood mononuclear cells (PBMC) isolated from the remaining blood were stained with monoclonal antibodies (CD19/CD21/CD24/CD27/CD38/CD45/IgD/IgM) to identify B cell subpopulations. Data was acquired on BD FACSCanto II using BD FACSDiva software (v8.0) and analysed using FlowJo.

Results TBNK staining revealed RT had significantly less lymphocytes and B cells compared to HV. Staining PBMC with a panel of B cell-related antibodies showed significant reduction in $CD19^+$ cells in RT compared to HV. There were less $CD21^{hi}$ and more $CD21^{lo}$ cells in RT than HV. Switched memory B cells and plasmablasts were higher in RT than HV. Transitional B cells in RT appeared lower than HV but was statistically insignificant. Upon examining Treg to B cells ratio, RT showed significantly higher proportions of activated Treg ($CD4^+CD25^+CD127^{lo}CD45RA^-Foxp3^{+/hi}$) to B cells, compared to HV. There were no significant differences between the two groups in naïve Treg to naïve T cell ratio, or highly activated Treg to activated effector T cells.

Conclusions Higher proportions of Treg to B cells may be clinically relevant and potentially demonstrate increased immunological suppression in long-surviving renal transplant recipients.

Abstract No. 19

EXAMINATION OF SUBSETS OF CD4+ LYMPHOCYTE SUBPOPULATIONS IN LONG-SURVIVING RENAL TRANSPLANT PATIENTS

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Background and Aims $CD4^+$cells can mediate renal transplant rejection or tolerance. Miyara et al. identified five populations (Pop) within $CD4^+$T cells based on CD45RA and CD25/Foxp3 expression. Pop I, II and III are Treg; naïve Pop I ($CD45RA^+Foxp3^+$), activated Pop II ($CD45RA^-Foxp3^{hi}$), and cytokine-secreting Pop III ($CD45RA^-Foxp3^+$), which includes activated effector cells. Pop IV are activated ($CD45RA^-Foxp3^-$), and Pop V are naïve T cells ($CD45RA^+Foxp3^-$). Changes within these lymphocyte subsets may indicate transplant tolerance or identify patients who can reduce immunosuppression. We examined Pop I-III of $CD4^+CD25^+CD127^{lo}$Treg and IV-V of $CD4^+$T cells in blood of renal graft recipients with grafts surviving >10years (RT, n=25) compared to healthy volunteers (HV, n=44).

Methods Peripheral blood mononuclear cells (PBMC) isolated from HV and RT blood were examined using flow cytometry for Treg (CD4/CD25/CD127/CD45RA/Foxp3), chemokine receptors (CXCR3, CCR4, CCR6, CCR7), and Treg activation/suppression-related molecules (CD39/HLA-DR/PD-1).

Results RT had less lymphocytes and Treg compared to HV. RT had less Pop I and Pop V but higher Pop IV than HV. There were significantly less $CXCR3^+$ cells in RT than HV in Pop I, II, III and IV. RT had fewer $CCR6^+$ cells compared to HV in Pop II, III and V. RT had less $CCR7^+$ cells in Pop I, IV and V, but higher in Pop II compared to HV. RT had significantly more Th2-like Treg in Pop II and III, and significantly less Th1/Th17-like Treg in Pop II and III compared to HV.

Conclusions Whether shift in Th-like Treg is a consequence of immunosuppression or associated with tolerance requires further investigation.

Abstract No. 20

GENETIC TESTING SHOWS HIGH FREQUENCY OF MENDELIAN DISORDERS IN PAEDIATRIC KIDNEY TRANSPLANT RECIPIENTS

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Testing and identification of underlying genetic aetiologies of end stage renal failure in children has been improved with high throughput genetic testing and better testing for copy number variants.

Aim: To identify the genetic aetiology of end stage kidney failure in the paediatric kidney transplant population in a clinical cohort.

Methods: We reviewed the charts and genetic testing results of 128 children less than 18 years at the time of transplant who had received kidney transplants between 2009-2023 at the Children's Hospital at Westmead.

Results: The clinical presentations included Congenital Abnormalities of Kidney and Urinary Tract (CAKUT) 32 patients, Nephrotic Syndrome (NS) 17 patients, polycystic kidney disease 11 patients, Tubular disorders 3 patients, Nephronophthisis 24 patients, glomerulonephritis 11 patients, VACTERL 4 patients and ESRF no obvious cause 2 patients, secondary ESRF in 12 patients including a number with Wilms tumours. Genetic causes were identified in 57 of them, including *NPHS1, NPHS2, ADCK4, PLCE1* and *TRPC6* in children with NS, *NPHP1, NPHP3, NPHP4, NPHP18, CEP290, CEP164, INVS*, *WDR35,* and *OFD1* in patients with nephronophthisis, *AGXT* and *CTNS* in patients with hyperoxaluria and cystinosis and CAKUT related mutations including *PAX2, GATA3,* and a number of copy number variations including Chr 6 duplication, Trisomy 21, deletion in the 18p11.32 microdeletion region and chromosomal translocations.

Conclusions: A high rate of genetic disorders was found in paediatric kidney transplant recipients as the underlying cause of their kidney failure. These results may have important prognostic and clinical significance for them and their families.

Abstract No. 21

THE ROLE OF TISSUE TYPING AND ANTIBODY ASSESSMENT IN FACILITATING AUSTRALIA'S FIRST UTERUS TRANSPLANT AND LIVE BIRTH

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Background: Women who experience uterine factor infertility (UFI) are unable to experience gestational parenthood and the condition affects 3-5% of the general population. Uterus transplantation provides an option for women to experience gestation, childbirth, and biological parenthood. In 2014, the world's first successful uterus transplant was performed which resulted in a live birth in Sweden. Australia's first successful uterus transplant at the Royal Hospital for Women, Sydney, culminated in a live birth in December 2023.

Methods: The first recipient in Australia to receive a uterus was a 30-year-old female, who underwent an emergency postpartum hysterectomy following complications from her initial pregnancy. Her mother served as the donor, with both recipient and donor were blood group compatible. The Australian Red Cross Lifeblood (ARCL) in New South Wales conducted comprehensive HLA typing and crossmatching. HLA typing was performed on recipient and donor using Next Generation Sequencing. HLA antibody testing was performed on the recipient's serum using Luminex LABScreen^{TM} technology. Additionally, flow cytometric crossmatches were performed using recipient's serum against donor's T and B cell lymphocytes.

Results: Recipient and donor were matched at one haplotype level for HLA with no detection of donor-specific antibodies (DSA) in the recipient's serum. T and B cell flow crossmatches were negative. Post-transplant antibody testing was negative at 1 month, and the patient has ongoing monitoring for DSA.

Conclusions: HLA tissue typing is crucial in assessing compatibility and monitoring DSA, which contributed to successful transplant and delivery. Since then, further unrelated recipient and donor pairs have had histocompatibility assessment to facilitate transplantation.

Abstract No. 22

FRAILTY PREDICTS UNPLANNED ADMISSIONS FOR LIVER TRANSPLANT CANDIDATES.

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Aims: Frailty is associated with mortality in liver transplant (LT) candidates, but the impact on morbidities is less clear. We investigated the impact of frailty (liver frailty index, LFI) on unplanned hospital admissions in this group.

Method: Between May 2018-September 2022 adults with cirrhosis being assessed for LT underwent frailty assessments during their initial dietitian appointment. Unplanned admissions were all admissions excluding booked surgeries/procedures (including paracentesis). Chi^2/Mann-Whitney U tests, Kaplan-Meier and competing risk analysis were performed to explore associations between frailty and unplanned admissions.

Results: In 266 patients (75% male, median age 58 [IQR 50-63], median MELD 16 [11-19]), the median LFI was 3.7 [3.3-4.1]. 19% of patients were robust, 68% pre-frail, and 14% frail. The proportion of robust, pre-frail and frail patients with unplanned admissions was 9%, 71%, and 20% respectively, ($p<0.001$), over a median of 82.5 [IQR 29-160] days. Frail patients experienced unplanned admissions sooner than robust and pre-frail ($p=0.00023$, Figure 1). After adjusting for age, sex, hepatocellular carcinoma presence, and MELD score, LFI was independently associated with higher risk of unplanned admissions. For every point increase in the LFI, there was a 48% increased risk of unplanned admissions (HR: 1.481, 95% CI: 1.035-2.120, $p=0.032$). Each point increase in the MELD was associated with an 11% increase in unplanned admission risk (HR: 1.106, 95% CI: 1.063-1.152, $p<0.001$).

Conclusion: Frailty is associated with an increased risk of unplanned admissions for LT candidates. Early routine assessment of frailty during LT evaluation should be considered to identify patients at greatest risk.

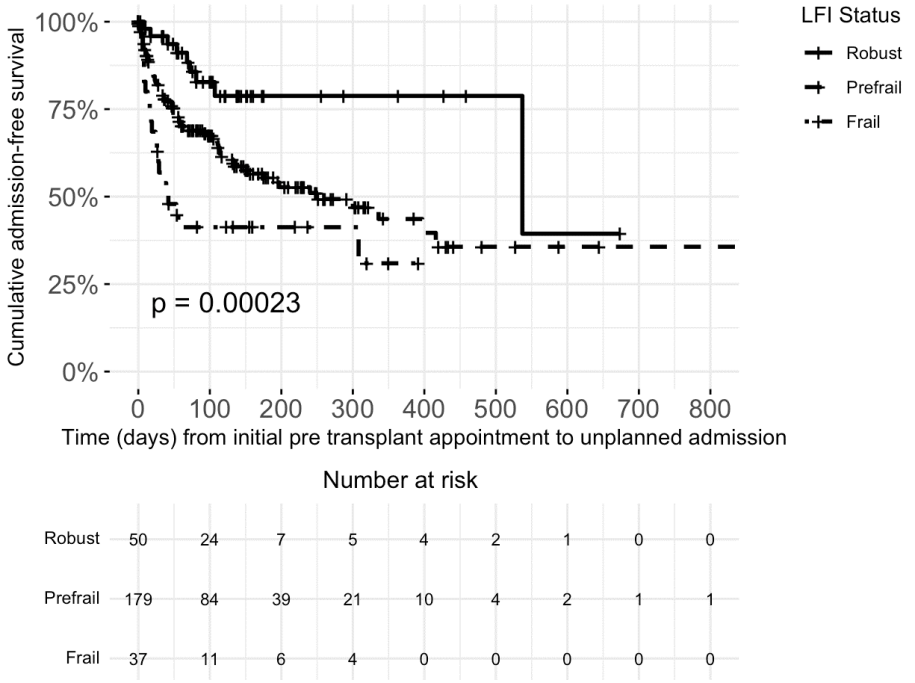

Figure 1 Kaplan-Meier Curves of unplanned admissions by LFI at first assessment (robust, pre-frail, frail)

Abstract No. 23

CARBAPENEMASE- PRODUCING ENTEROBACTERALES (CPE): AN INCREASING THREAT TO AUSTRALIAN LIVER TRANSPLANT RECIPIENTS

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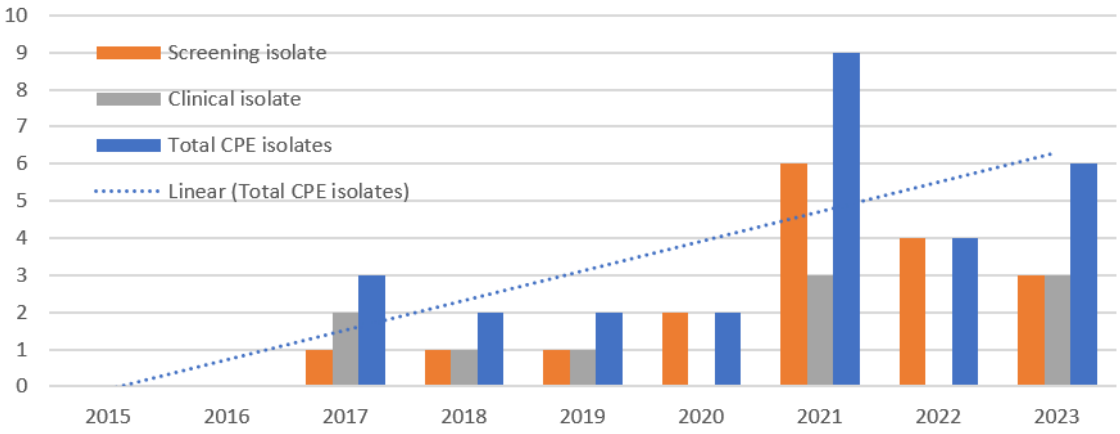
Introduction Multidrug-resistant organisms, including carbapenemase-producing Enterobacterales (CPE) are associated with high morbidity and mortality in liver transplant recipients (LTRs). In Australia, there is a paucity of data regarding CPE in LTRs, who are at increased risk for both CPE colonization and infection.

Methods Single-center, retrospective cohort study of CPE in LTRs January 2015 to August 2023. LTRs are routinely screened for CPE in intensive care unit, with further targeted screening based on epidemiologic risk. All CPE isolates undergo whole genome sequencing (WGS). CPE cases were identified using the WGS database, classified as colonization or infection, and analyzed using descriptive statistics.

Results There were 28 episodes of CPE isolation from 24 LTRs. Using standard definitions, 5 and 23 cases were community and healthcare-acquired, respectively. Ten episodes of CPE infection, involving the urinary tract (N=4, 40%), bloodstream (N=3, 30%), wound/abscess (N=2, 20%) and gastroenteritis (N=1, 10%) were found. The remaining 18 cases represented CPE colonization. *Klebsiella pneumoniae* was the most common CPE-harboring bacterial species (N= 12, 42.9%) with the New-Delhi metallo-β-lactamase (N=13, 46.4%) the most common CPE gene detected. CPE cases increased over time (Figure 1) from 5.1 to 12.2 per 10, 000 occupied bed days (OBDs). The overall rate of CPE was significantly greater in LTRs than the general hospital population (6.24 vs 0.95 cases per 10,000 OBDs; p=0.0075). Two patients (20%) died within 30 days of CPE infection diagnosis.

Conclusion Infection with CPE is an emerging risk for Australian LTRs. Further research is required to determine optimum treatment and prevention.

Figure 1: CPE colonization and infection in liver transplant recipients



Abstract No. 24

EARLY EXPERIENCE WITH HYPOTHERMIC OXYGENATED MACHINE PERFUSION IN KIDNEY TRANSPLANTATION IN VICTORIA

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Aims: To report on the early experience of hypothermic oxygenated machine perfusion (HOMP) in kidney transplantation in Victoria, Australia.

Methods: We evaluated perfusion, donor and recipient parameters, along with post-transplant outcomes, for HOMP cases between August 2023 and January 2024.

Results: 14 deceased donor kidneys (5 DCD and 9 DBD) underwent HOMP, 10 via a "back-to-base" model. Median KDPI was 62 (IQR 23-73, max 90) and EPTS 76 (IQR 65-86, max 98). Four kidneys had significant donor acute kidney injury. Four kidneys underwent HOMP overnight for complexity/logistical reasons. Four kidneys were at risk of non-utilisation: two had non-utilisation of the contralateral kidney and two were declined by most centres. The median cold ischemia time (CIT) was 16 (IQR 13-22, max 26) hours, duration of HOMP was 9 (IQR 7-14, max 19) hours, and proportion of CIT perfused was 61% (IQR 55-72%). HOMP resistive index improved in all cases (start 0.42 (IQR 0.36-0.48) vs end 0.20 (IQR 0.16-0.24), p=0.001). Seven recipients received post-transplant dialysis (median duration 9, max 12 days). Two recipients developed rejection. All recipients are off dialysis. eGFR at 1 and 3 months was 36 (IQR 27-61) and 48 (IQR 41-66) ml/min/1.73m^2, respectively. No machine-related issues were encountered. No complications were attributed to HOMP.

Conclusions: HOMP integrated well into transplant workflows. In addition to logistical benefits, HOMP supported transplantation of kidneys at risk of non-utilisation, raising the possibility of substantial cost offsets. Prioritising retrieval-commenced HOMP, instead of "back-to-base", is needed to maximise the proportion of CIT on HOMP.

Abstract No. 25

PREGNANCY AFTER KIDNEY TRANSPLANTATION: GLOBAL INSIGHTS BASED ON REGISTRY DATA FROM THREE CONTINENTS

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Aim: Limited cross-cultural data exists on pregnancy after kidney transplantation. We compared approaches to data capture and basic outcomes of pregnancies in female kidney transplant recipients (KTR) across three continents.

Methods: Data was extracted from annual reports, publications and directly from the Pregnancy After Renal Transplantation OUTcomes registry (PARTOUT, Netherlands), Australia and New Zealand Dialysis and Transplant Registry (ANZDATA) and Transplant Pregnancy Registry International (TPRI, United States and international).

Results: Each registry applied different methodologies for case capture. PARTOUT identified all pregnant KTR (1971-2017) across The Netherlands via the National Organ Transplant Registry and health professional consultation, conducting a once-off, highly granular retrospective medical record review. ANZDATA conducts annual surveys on all KTR, with pregnancy events voluntarily reported since inception and formally since 2001 via paper surveys or online, with expansion of data items in 2018. TPRI registration is voluntary via health providers or patient self-enrolment. Interviews with KTR occur at enrollment, after delivery and then every two years. Characteristics and basic outcomes are shown in Table 1.

Conclusions: Basic pregnancy outcomes in KTR were consistent across 3 registries, demonstrating pregnancy in female KTR can be successful but remains higher-risk. Understanding registry strengths and biases is essential when comparing outcomes across countries; sustainability of data collections remains a challenge. The development of global minimum datasets with shared definitions may increase the power to monitor trends and identify drivers of adverse outcomes in this high risk cohort of women.

Table 1: Characteristics of pregnancy, fetal and transplant outcomes from three registries.

	PARTOUT	**ANZDATA**	**TPRI**
Duration	1971-2017	1968-2021	1991-2022
Female kidney transplant recipients with pregnancies	202	594	1367
Pregnancies	301	1110	2455
Live births	93%	85.92%	75%
Preterm (<37 weeks)	50%	56%	52%
Gestational age (weeks)	35.6 (mean)	35 (median)	35.8 (mean)
Birth weight (g)	2383 (mean)	2360 (median)	2551 (mean)
Low birthweight (<2500 g)	49%	45%	52%
Immunosuppression during pregnancy	87-91% Prednisone 71-73% Azathioprine 48-52% Cyclosporine or Tacrolimus	77-80% Prednisone 64-74% Azathioprine 91% Cyclosporine or Tacrolimus	72% Azathioprine 40% Tacrolimus 38% Cyclosporine
Preeclampsia	34%	37%	30%
Long-term transplant outcome	23% graft loss with a median time of 6.44 years post-delivery	27% graft failures with a median maternal follow-up of 8.08 years (IQR, 3.35–12.52)	5.5% graft loss within 2 years post delivery: 67% report adequate function with a mean maternal follow-up of 14.4 years

Abstract No. 26

SEX DIFFERENCES IN HOSPITAL UTILISATION AFTER LIVING KIDNEY DONATION

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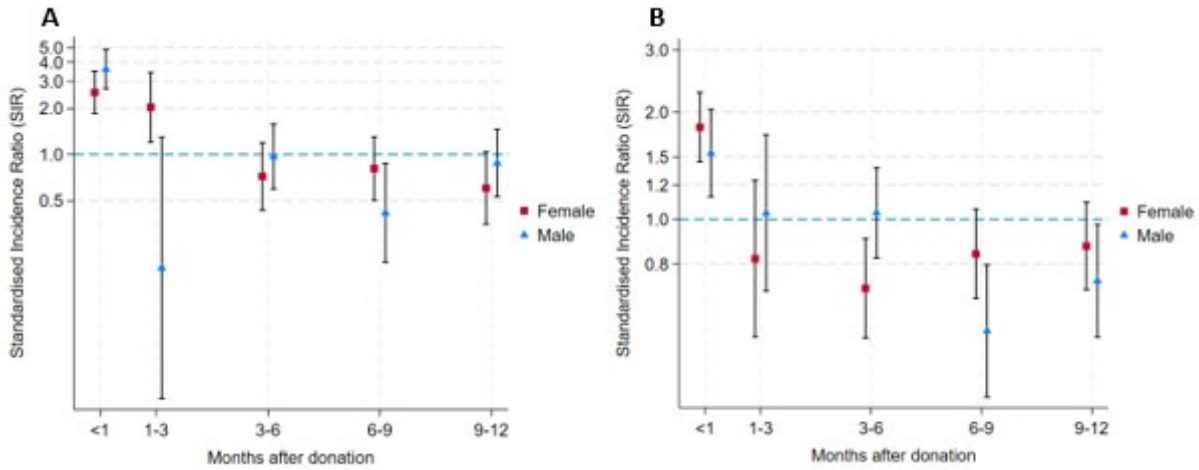
Aims: While kidney donors have comparable mortality compared to the general population, there is paucity of data evaluating health service utilisation after kidney donation. We aimed to evaluate the index admission length, presentations to emergency departments (ED), and hospital admissions in the 12 months following donation, with a focus on sex differences.

Methods: A population-based cohort study of NSW living kidney donors 2004-2019 using the Safety and Biovigilance in Organ Donation (SAFEBOD) dataset, which linked donors to administrative health databases. We estimated ED presentations and hospital admissions (excluding pregnancy-related admissions) standardised incidence ratios (SIR) compared to general population.

Results: Of 1426 living kidney donors, 812 (56.9%) were female and 614 (43.1%) male. Median length of stay for the donation admission was 4 days (IQR 4-5days) with no difference by sex (p=0.31). Compared to the general population, excess hospital utilisation was significant in the first month after donation (figure 1). In the first month, there were fewer excess ED presentations in females compared to males (SIR2.55 (95%CI 1.85-3.50) vs. 3.60(2.68-4.84), p<0.01). There was no difference by sex in hospital admissions (females SIR 1.82(1.45-2.27) vs. males 1.54(1.16-2.04), p=0.13).. By 12 months, the rate of excess ED presentations was not statistically different between females and males. At 12 months, there was a trend towards fewer hospital admissions compared to the general population, with no difference between sexes (SIR0.95(0.83-1.08) vs. 0.90(0.77-1.05) respectively (p=0.64)).

Conclusion: This study demonstrates significantly increased ED presentations and hospital admissions in the first month after donation for males and females.

Figure 1: Standardised incidence ratio for (A) ED presentations and (B) Hospital admissions, by sex and time after donation



Abstract No. 27

SEX DIFFERENCES IN RELATIVE CANCER SURVIVAL IN KIDNEY TRANSPLANT RECIPIENTS: A BI-NATIONAL STUDY, 1980-2019

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Aims: We sought to estimate the relative cancer survival in kidney transplant recipients and describe differences in trends between males and females.

Methods: We took all kidney transplant recipients with de-novo cancer and compared survival with the general population with cancer in Australia and New Zealand 1980-2019. Relative survival ratios (RSR) post-cancer diagnosis were estimated using the general population as the reference group, matched for sex, age, calendar year and country. Excess mortality ratios (EMR) were estimated using Poisson regression.

Results: There were 1,899 deaths in 3,253 kidney transplant recipients with de novo cancer in the cohort, 1,947 (60%) males and 1,306 (40%) females. Median follow-up was 14 years from the first transplant and 3.3 years from the first cancer diagnosis. In the general population with cancer, females experienced better relative cancer survival compared to males (Five-year RST 0.71 [95%CI:0.71-0.72] vs 0.63 [95%CI:0.63-0.63] respectively). Similarly, female kidney transplant recipients experienced better relative cancer survival compared to males (five-year RSR 0.59 [95%CI:0.56-0.62] vs 0.53 [95%CI:0.50-0.55] respectively). Excess mortality was 41% (adjusted EMR 1.41 [95%CI:1.30-1.54]) higher in female kidney transplant recipients with cancer than females in the general population with cancer and 26% higher in male recipients (adjusted EMR 1.26 [95%CI:1.18-1.36]) than males in the general population with cancer. Excess mortality has increased at a steeper rate in female recipients compared to male recipients in the past 30 years (Figure 1, p<0.001).

Conclusions: Female kidney transplant recipients with cancer had better relative survival than males but experienced higher survival deficits (excess mortality ratio) when compared with the general population with cancer.

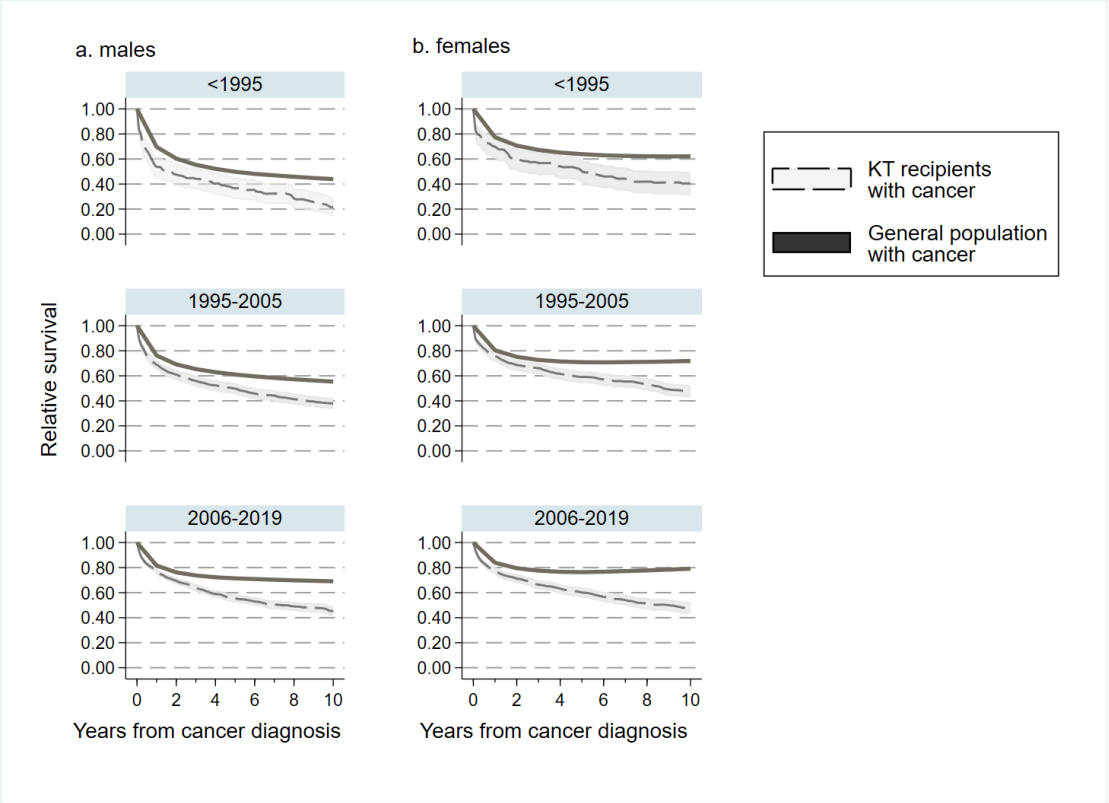

Figure 1: Relative survival ratio (RSR) post-cancer diagnosis stratified in a) males and b) females over calendar years (5-year groups) in the general population, kidney transplant recipients and dialysis patients. The reference population is the overall general population of Australia and New Zealand (RSR=1).

Abstract No. 28

SEX DIFFERENCES IN CARDIOVASCULAR RISK AND KIDNEY FUNCTION: SERUM CREATININE VERSUS CYSTATIN C

DE LA MATA N[1], LEES J[2], HEDLEY J[1], SULLIVAN M[2], ROSALES B[1], MARK P[2], WEBSTER A[1]

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Background: Risk of cardiovascular events increases as kidney function declines, and males have higher risk than females. It is unclear whether this sex difference persists at all stages of kidney disease, or with different biomarkers of kidney function.

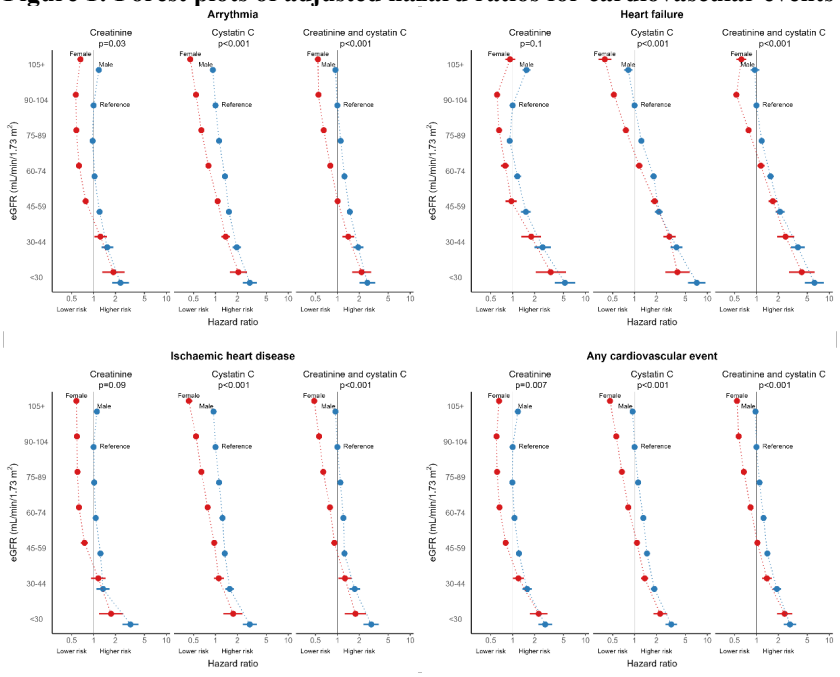
Aims: To compare risk of cardiovascular events/death by sex and kidney function.

Methods: We used data from the UK Biobank, a prospective cohort aged 40-69 in 2006-2010. We calculated eGFR using serum creatinine, cystatin C, or both. Cardiovascular events were arrythmia, heart failure, and ischaemic heart disease. We modelled time to first event and death using Cox regression, adjusted for age, smoking, diabetes, cancer, hypertension, hyperlipidaemia, total:HDL cholesterol, and blood pressure. We repeated this for each eGFR measure. All models included a sex-eGFR interaction.

Results: Among 503,325 participants, N=394,920 (78%) had no prior cardiovascular events and sufficient data for analysis (55% female). At normal kidney function (creatinine eGFR 90-104mL/min/1.73m^2), females had lower risk of cardiovascular events (HR 0.60, 95%CI 0.59-0.62) and death (HR 0.41, 95%CI 0.36-0.46). This advantage disappeared as kidney function declined. Females approaching dialysis or transplant (creatinine eGFR<30) had similar risk to males for cardiovascular events (HR 0.81, 95%CI 0.57-1.15, interaction p=0.007) and death (HR 1.19, 95%CI 0.62-2.30, interaction p=0.06). The sex-eGFR interaction was more apparent using cystatin C, and creatinine+cystatin C (all interaction p<0.001).

Conclusion: Females experience a steeper increase than males in risk of cardiovascular events/death as kidney function declines, which has implications for people progressing towards dialysis or transplant. Using creatinine eGFR only may obscure this effect.

Figure 1: Forest plots of adjusted hazard ratios for cardiovascular events by sex and eGFR



Abstract No. 29

THE IMPACT OF ISCHAEMIC TYPE BILIARY LESIONS ON HEALTH UTILITY AFTER DCD LIVER TRANSPLANTATION

HALLE-SMITH J[1], BURAK M[1], CLARKE G[1], HANN A[2], SUTHANANTHAN A[1], ROBERTS K[1]
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Aims To investigate the cost of ITBL to the health service so that potential savings with new technology could be explored.
Methods Consecutive DCD liver transplants between 2016-2018 were reviewed from our institutional database. To compare healthcare costs between patients who developed ITBL and the standard DCD cohort, ITBL patients were matched to patients who received a DCD static cold storage (SCS) graft during the same period. Matching was based on age, indication for transplant and UKELD at listing. For ITBL and matched patients, all hospital episodes after discharge from index transplant were reviewed. Cost codes for each procedure or episode were obtained from the NHS tariffs.
Results There were 115 patients included in the study, of which 19 developed ITBL (16.5%). Graft survival was significantly lower in the ITBL group (23.4 months vs. 72.8 months; p=0.001), with 9 (47%) of the patients requiring retransplantation. Matching of the ITBL and DCD SCS controls was satisfactory on the specified parameters. The total hospital costs were significantly higher amongst the ITBL group, with an average cost per patient of £97,304 (£3,116-£271,278) compared to £16,802 (£3,982 - £93,171) in the matched control group.
Conclusions The development of ITBL after DCD liver transplantation leads to significantly increased healthcare costs compared to matched DCD SCS controls. These costs should be taken into account by health service providers when deciding whether to fund technologies that may reduce the ITBL rate in DCD grafts, such as NRP and HOPE.

Figures 1a and 1b – plots to visualise readmission bed days and treatment costs for ITBL and matched no ITBL patients after DCD liver transplant

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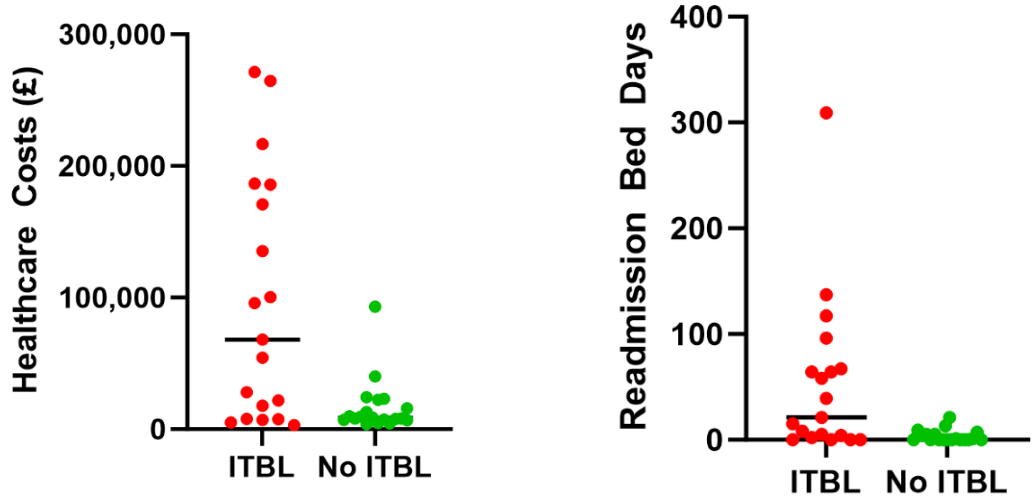

Abstract No. 30

STATUS OF LIVER TRANSPLANTATION FOR CHOLANGIOCARCINOMA AND MIXED-TYPE HEPATOCELLULAR CARCINOMA IN ANZ (COMIT-ANZ)

RIDDIOUGH G[1], KAT H[1], BYRNE M[2], KILBURN D[3], BROWN K[3], KRISHNAN A[3], GOH SK[4], MARSHALL-WEBB M[4], PULITANO C[5], CHAN K[6], PHILIPOFF A[7], NAZAAR A[8], LEE E[1]

[1]Department of Surgery, Austin Health, Victoria, [2]ANZLITR, Austin Hospital, Victoria, [3]Department of Surgery, Princess Alexandra Hospital, Brisbane, [4]Department of Surgery, Flinders Medical Centre, Adelaide, [5]Department of Surgery, Royal Prince Alfred Hospital, Sydney, [6]Transplant Surgery, Royal Prince Alfred Hospital, Sydney, [7]Department of Surgery, Sir Charles Gairdner Hospital, Perth, [8]Department of Surgery, Auckland City Hospital, New Zealand

Aims: Assess the outcomes and identify factors which predict long term survival for patients undergoing liver transplantation (LT) for cholangiocarcinoma (CCA) and mixed-type hepatocellular-cholangiocarcinoma (HCC-CCA) in Australia and New Zealand (ANZ).

Methods: A collaborative retrospective multi-centre study enrolled all transplant centres within ANZ. To our knowledge, this is the first study of this nature in ANZ. Data was collected by transplant fellows into a REDCaps Database. Data was retrieved and analysed centrally at the lead site, Austin Health. **Results:** 64 patients (48 males, 16 females) underwent LT in the setting of CCA or HCC-CAA in ANZ since records began in 1988. 16 patients were diagnosed with CCA prior to LT, the remaining (n=48) CCAs and HCC-CCAs were detected incidentally on explant histology. Overall, 48 (75%) patients had CCA, of which, 27 (56%) were intrahepatic CCAs (iCCA). Median overall survival (mOS) and median recurrence free survival (mRFS) for all-comers post LT for CCA/HCC-CCA was 36 and 31 months respectively, and for CCAs only 31 and 23 months respectively. mOS and mRFS for iCCAs was 41 and 38 months respectively, and for pCCAs was 23 and 16 months respectively. mOS and mRFS for single iCCAs <2cms (n=7) was 59 and 59 months respectively.

Conclusions: ILTS Guidelines 2020 support LT as a viable treatment for achieving mid-long term survival for "very early" iCCAs (single nodule <2cms) and for unresectable perihilar CCAs after neoadjuvant chemoradiation. Data presented here representing the entire ANZ experience in LT for CCA and HCC-CCAs supports application of these guidelines to the ANZ population.

Abstract No. 31

THE EVOLUTION OF LATE LIVER RETRANSPLANTATION

HANN A[1], NUTU A, LEMBACH H, ALFARAH J, CAINE G, SANABRIA-MATEOS R, DASARI B[2], OO Y[2], ARMSTRONG M, BARTLETT D, FERGUSON J, MURPHY N, BENNETT D, RAJORIYA N[2], ISAAC JL[2], MIRZA D, ROBERTS K, ISAAC JR, TRIPATHI D, PERERA T

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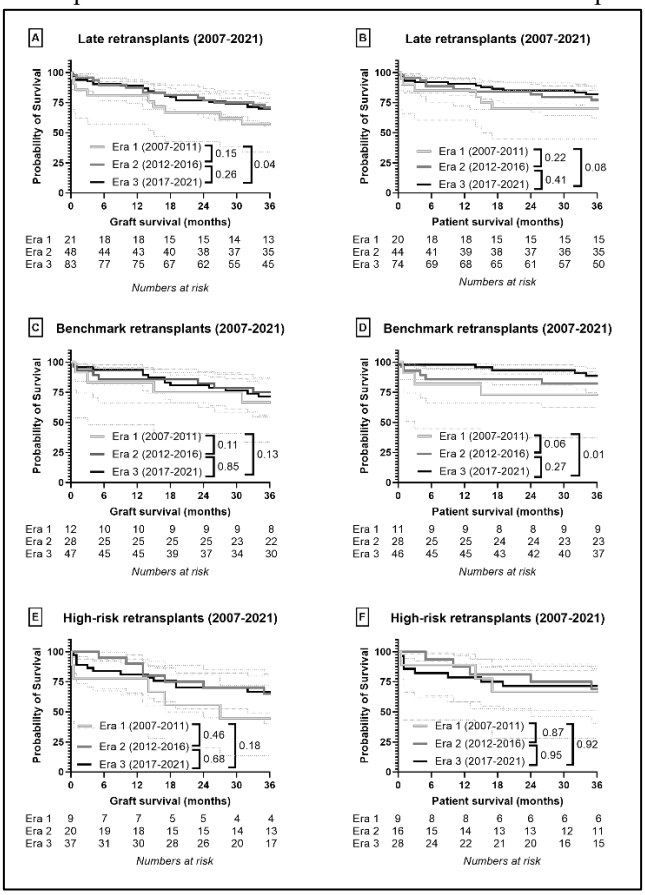
Background: Liver re-transplantation is indicated following late graft failure, however reported outcomes are inferior to primary transplant. Our aim was to describe how the practice and outcomes of late retransplant have evolved over the last 15 years. and factors associated with poor outcomes.

Methods: A single-centre retrospective study of patients that underwent late liver retransplant (>21days) with a graft from a deceased donor between 2007-2021. The study period was divided into three eras (Era 1:2007-2011, Era 2:2012-2016, Era 3:2017-2021). Recipients were classified as benchmark or high-risk, based on published benchmarking criteria. Patients with PVT, MELD ≥25, pre-transplant mechanical ventilation, receiving a DCD graft or undergoing repeat retransplant were considered high risk. The primary outcome was 1-year graft and patient survival. A multivariate analysis was performed to identify factors associated with graft loss within 1-year.

Results: Among 153 late retransplants, 1-year graft and patient survival was 133/153 (87%) and 121/135 (90%) respectively. Overall, 1-year patient survival has increased from 17/20 (85%) in era-1 to 67/74 (91%) in era-3 (Log rank p=0.08). Figure A&B demonstrates graft survival for benchmark recipients by era. Patient survival for benchmark retransplants improved over the 3 eras [Era-1:9/11(82%) vs. Era-2:24/28(86%) vs. Era-3:45/46(98%); p=0.01 (log rank)] (Figure 1B), but not in high-risk retransplants. (Figure C&D). On multivariate analysis, split grafts (OR: 9.99, 95% CI: 2.02-49.46, *P*=0.005) and portal vein conduits (OR: 5.480, 95% CI:1.657-18.130, *P*=0.005) were associated with graft loss at 1-year.

Conclusion: Excellent graft and patient survival can be achieved with late retransplant in the modern era.



Legend: Survival with grouping based on risk (A&B), Benchmark retransplants stratified by era (C&D), High risk transplants stratified by era (E&F).

Abstract No. 32

30 YEARS OF HISTORY, EVOLUTION, AND SURGICAL OUTCOMES OF PANCREAS TRANSPLANTS IN A SINGLE AUSTRALIAN CENTRE

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[1]National Pancreas Transplant Unit, Monash Medical Centre, Melbourne, [2]Renal Transplant Unit, Monash Medical Centre, Melbourne, [3]Department of Vascular and Transplantation Surgery, Monash Medical Centre, Melbourne

Background Pancreas transplants were performed successfully in 1966[1] at the University of Minnesota. The first pancreas transplant in Australia was performed in Monash National Pancreas transplant unit (NPTU). Currently Monash national pancreatic transplant center performs a third of Australia's pancreas transplants. The aim is to determine the evolution of surgical technique, explore and understand the rationale behind the change, as well as outcomes related to surgical technique of pancreatic transplants throughout the development of the national transplant program.

Methods Retrospective analysis of all pancreatic transplants done from 1984 to 2022.

All types of pancreatic transplants will be included (Simultaneous pancreas and kidney transplants (SPK), Pancreas after kidney (PAK), Pancreas transplants alone (PTA)) Demographic data collected include recipient age and gender. Immunosuppression regimen including induction immunosuppression and maintenance were also collected.

Surgical technique, Portal or systemic, exocrine drainage Bowel or bladder and cases that were converted to enteric from bladder drainage were also collected for the study.

Outcomes that were collected include graft associated complications such as graft thrombosis rate and ultimately, pancreas graft survival rate and length of Stay. The data were divided into two different periods to reflect the potential differences and evolution throughout the years, namely the initial period from 1984 to 2001, and the subsequent 20 years from 2002 to 2022.

Results 48 pancreatic transplants were done from 1984 to 2001, following that from 2002 to 2022 that number increased to 236 transplants in total. Surgical technique including pancreatic drainage have evolved from Bladder to enteric drainage. Venous drainage on the other hand have evolved from systemic to portal and currently back to systemic drainage. The rate of Early pancreatic allograft thrombosis (EPAT) in the institution was 20%(CIV), 23%(EIV) and 14%(SMV) from 1984-2001 and subsequently reduced to 5.9%(IVC), 23.3%(CIV), 26.1%(EIV), 13.3% (SMV) after altering the surgical technique. The average length of stay of patients in the first cohort from 1984 to 2001 was 18.1 days and the subsequent length of stay for patients from 2002 to 2022 was 15.5 days. Finally, pancreatic graft survival rates were 75.05% 1-year graft survival and 55.55 5-year graft survival from 1984 to 2001 and 93.5% 1-year graft survival and 80.6% 5-year graft survival from 2002-2022.

Conclusion Pancreatic transplants are medically complex and technically demanding procedures that should be done within a specialized unit. With over 30 years of experience, it is important for every patient to have good pre-operative workup with the involvement of a multidisciplinary team, meticulous intra-operative tissue handling and stringent post operative care to achieve the best outcomes for the patient.

Abstract No. 33

IMPROVED RECOVERY OF RAT HEARTS AFTER COLD STORAGE BY ACID SENSING ION CHANNEL INHIBITOR HI1A VARIES WITH PRESERVATION SOLUTION.

DUTTA S[1,2,3], GAO L[4], DOYLE A[4], PALPANT N[5], KING G[5], MACDONALD P[2,3,4], VILLANUEVA J[1,2]

[1]Transplantation Laboratory, Victor Chang Cardiac Research Institute, Sydney, [2]St Vincent's Clinical School, The University of New South Wales, [3]Department of Heart and Lung Transplantation, St Vincent's Hospital Sydney, [4]Transplantation Laboratory, Victor Chang Cardiac Research Institute, Sydney, [5]Institute for Molecular Bioscience, The University of Queensland, Infensa Bioscience Pty Ltd.

Aims: Most heart transplantations rely on cardioplegia solution and cold static storage (CSS) for organ preservation, however long ischaemic times result in poor outcomes. ASIC1a inhibitors have shown promise to reduce ischaemia-reperfusion injury. We investigated the impact of supplementation of cardioplegia with the ASIC1a inhibitor Hi1a on cardiac function following CSS.

Methods: Hearts were isolated from male Wistar rats (348-463g, n = 4-8/group), perfused ex-vivo with Krebs-Henseleit buffer at 37°C, and baseline haemodynamic measurements of aortic flow (AF) were obtained. Hearts were arrested with St Thomas's (STH), Celsior (Cel) or Custodiol (Cus) cardioplegia either alone, supplemented with 10nM Hi1a or 50nM Hi1a. Following 6-hour CSS (4°C), hearts were re-perfused ex-vivo. Haemodynamic measurements were obtained, and recovery expressed as percentage of pre-storage baseline (mean ± SEM).

Results: As shown in Figure 1, compared to unsupplemented Celsior (AF 14±5.0%) hearts stored in Celsior supplemented with either 10nM Hi1a (AF 54±12%, P = 0.028) or 50nM Hi1a (65±6.7%, P < 0.001) showed significantly improved recovery in a dose-dependent manner. Hearts stored in Custodiol trended towards worse recovery when supplemented with both 10nM and 50nM Hi1a. Hearts stored in STH had poor recovery of AF, with and without supplementation.

Conclusions: Supplementation of Celsior with Hi1a showed improved cardiac function after 6 hours cold ischaemic storage, showing benefit as a preconditioning agent. Further work is needed to examine reasons for differing efficacy in different cardioplegia solutions. ASIC1a inhibitors may improve acceptable ischaemic times for organ transplantation however compatibility with various cardioplegia solutions should be considered.

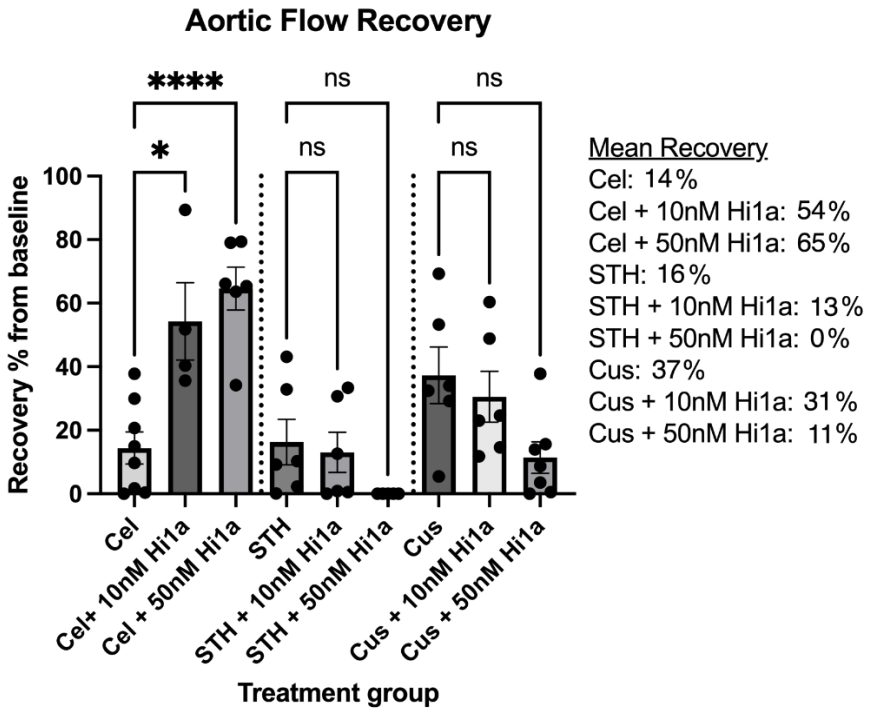

Figure 1: Mean myocardial functional recovery following 6hrs CSS, expressed as a percentage of baseline aortic flow. Error bar represents standard error of the mean.

Abstract No. 34

TRANSCRIPTOMICS CHANGES AS A MARKER OF LIVER TRANSPLANT VIABILITY DURING NORMOTHERMIC PERFUSION.

SOLAL C[1], REILING J[2], SHAH S[1]

[1]Institute for Molecular Biosciences, University of Queensland, [2]Princess Alexandra Hospital, Brisbane

Background and Aim: Normothermic machine perfusion, an alternative organ preservation method, has, over the last few years, increased the utility rate of marginal donor livers worldwide. Currently, empirically defined perfusion and biochemical criteria are used to determine graft viability during NMP. However, a greater understanding of the changes occurring during NMP is required to validate those parameters. In this study, we investigate transcriptomic changes observed within viable and non-viable livers.

Methods: For 14 livers included in this study, biopsies were collected at the start and end of cold ischemic time as well as after 3 and 6 hours of perfusion. Biopsies were then used to generate RNA-sequencing data. Liver undergoing NMP were stratified based on currently accepted viability criteria (lactate clearance, glucose usage…) and used to investigate molecular changes occurring during perfusion. Differentially expressed genes analysis was then performed to compare each viability group to cold ischemic time while accounting for the longitudinal aspect of the data collection.

Results: An active transcriptome was identified within viable livers (2413 DEGs), while non-viable livers displayed a comparatively inert transcriptome (572 DEGs). While all viable livers passed the currently defined viability criteria, one liver transcriptome behaved identically to non-viable livers, highlighting that gene expression characterises a different aspect of viability during normothermic perfusion. Finally, gene expression was successfully used to predict liver viability within an out-of-sample cohort.

Conclusion: This study highlights that gene expression can be used to stratify the liver undergoing NMP and should be investigated as a potential addition to the currently defined viability criteria.

Abstract No. 35

INSIGHTS FROM INTEGRATED MULTIOMICS SHOW SPONTANEOUS LIVER DEFATTING DURING LONG-TERM NORMOTHERMIC MACHINE PERFUSION

NIU A, HUANG J, LAU N, LY M, BABEKUHL D, RISBEY C, YOUSIF P, DENNIS C, LIU, MCKENZIE C, KENCH J, MCCAUGHAN G, CRAWFORD M, PULITANO C

Department of Transplant Surgery, Royal Prince Alfred Hospital, Sydney

Background: Experimental studies have demonstrated defatting of steatotic livers during ex-situ long-term normothermic machine perfusion (LT-NMP) with the use of pharmacological cocktails. However the impact of isolated LT-NMP and qualitative changes in lipid species remains yet to be clarified. This study aims to employ a multiomics approach to evaluate the changes in lipid profiles that occur in human livers perfused on LT-NMP for >1 week.

Methods: Twenty partial human liver grafts were perfused using a modified red cell-based NMP system, consisting of a dialysis filter, oxygenator and infusions to allow for extended ex-situ survival. Liver viability was demonstrated through vascular haemodynamics, lactate clearance, glucose metabolism and bile production. Microvesicular (MiS) and macrovesicular (MaS) steatosis was determined on histopathology. A multiomics approach including lipidomics, metabolomics and next generation sequencing was used to identify key molecular pathways associated with defatting.

Results: Fourteen initially steatotic grafts on histopathology were included. The average perfusion time was 6.4 days, during which 6/8 (75%) grafts showed a reduction in MaS, whilst 8/14 (57%) showed a reduction in MiS. The majority achieved defatting after a perfusion of 3 days. Lipidomic analysis demonstrated a reduction in short chain saturated and monosaturated fatty acids, whilst triglycerides and polyunsaturated fatty acids tended to accumulate.

Conclusion: We demonstrate that LT-NMP can spontaneously reduce the steatotic content of fatty livers, without needing additional defatting agents. Studies of human liver defatting on LT-NMP should focus not only on the change in quantity but also quality of lipids, including presence of toxic lipid species.

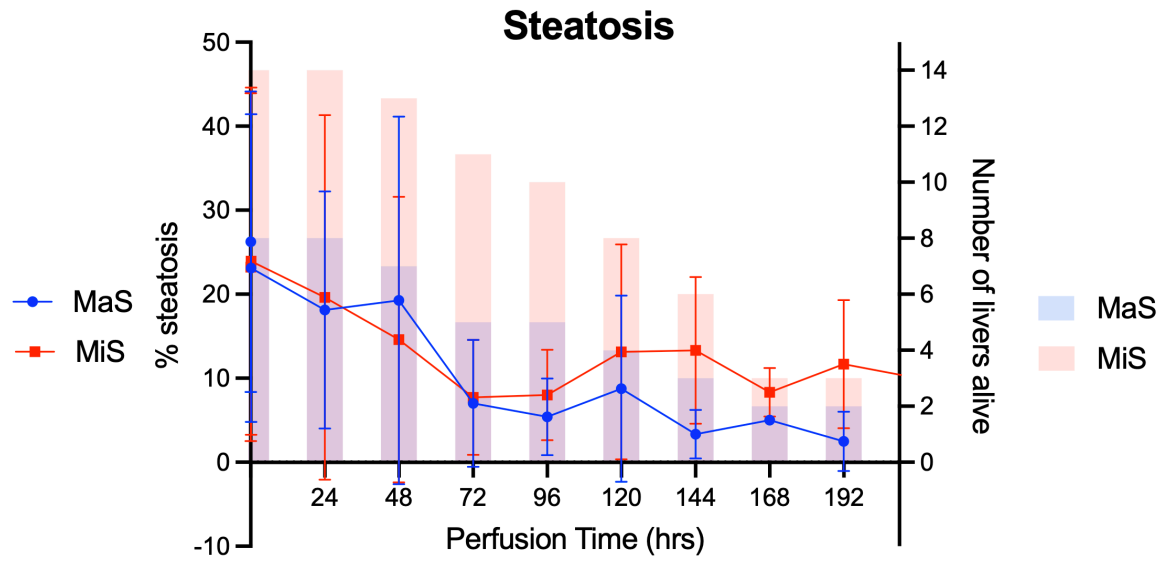

Figure 1. Change in Steatosis. Line graph showing change in % microvesicular (MiS) and macrovesicular (MaS) steatosis over time, plotted against a bar graph of number grafts alive at each time point for the respective MiS (n= 14) and MaS (n=8) groups.

Abstract No. 36

IMPROVING DONOR HEART PRESERVATION WITH FUNNEL WEB SPIDER VENOM AND THE ANTI-DIABETIC DRUG EMPAGLIFLOZIN

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[1]Transplantation Laboratory, Victor Chang Cardiac Research Institute, Sydney, [2]Institute for Molecular Biosciences, University of Queensland, [3]Institute for Biomolecular Sciences, University of Queensland, [4]Transplantation Laboratory; Heart and Lung Transplant Unit, Victor Chang Cardiac Research Institute, Sydney; St Vincent's Hospital Sydney

Background: Supplementation of donor heart preservation solutions can improve post-transplant function. Hi1a, an acid-sensing ion channel inhibitor derived from the funnel web spider; and the anti-diabetic drug empagliflozin (EMPA) boosts rodent donor heart functional recovery when used individually.

Aim: Test the efficacy of combining Hi1a and EMPA during donor heart preservation.

Methods: Male Wistar rat (340-420g;n=4-8) hearts were excised and perfused (KHB, 37°C, Langendorff 10min, Working 15min). Hearts were arrested with Celsior ± 10nM Hi1a, 10µM EMPA, or 10nM Hi1a+10µM EMPA, stored for 6h at 4°C, and reperfused (Langendorff 15min, Working 30min). Aortic flow (AF), coronary flow (CF) and cardiac output (CO) were measured. Cardiac recovery was calculated as a percentage of pre-storage baseline value. Coronary effluent was assessed for lactate dehydrogenase (LDH) release and left ventricle tissue collected for H&E and western blot (phosphorylated-STAT3, p-AMPKα, p-ERK1/2).

Results: Compared to unsupplemented hearts, EMPA-supplementation significantly increased AF recovery (49±8% vs 14±5%, p=0.005) and CO recovery (57±6% vs 36±4%, p=0.01) with similar CF recovery across all groups. Hi1a-supplementation significantly improved AF (54±12%, p=0.005) and CO (62±9%, p=0.01) recovery. Combined EMPA+Hi1a supplementation further increased AF and CO recovery (77±6% and 77±3% respectively, p<0.0001), however increased LDH release was detected after 30mins working reperfusion compared to controls (p=0.03). A trend for reduced contraction bands in Hi1a-supplemented hearts was observed. EMPA-supplementation and Hi1a-supplementation increased p-AMPKα phosphorylation however the EMPA+Hi1a supplementation reduced p-AMPKα. There were no differences in ERK1/2 and STAT3 phosphorylation.

Conclusion: Donor heart preservation with EMPA+Hi1a improves cardiac recovery after prolonged cold storage presenting a novel donor organ preservation strategy.

Abstract No. 37

EVALUATING THE POTENTIAL OF M101 AS A NOVEL OXYGEN CARRIER PRODUCTION IN LIVER GRAFT PRESERVATION

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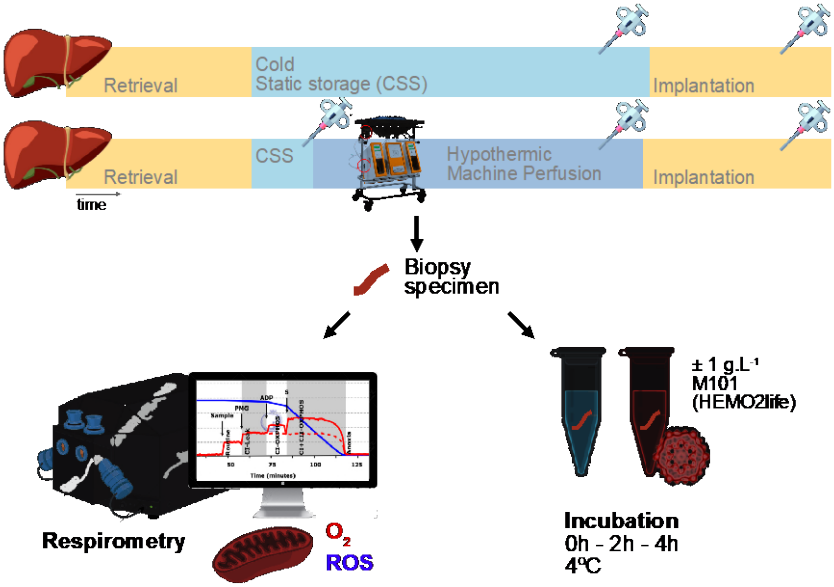
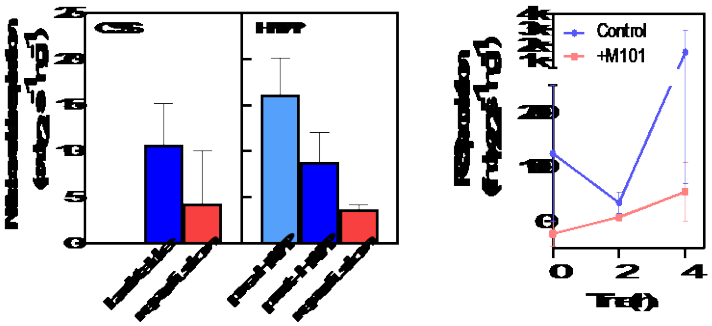
Aims. The preservation of mitochondrial metabolism and the suppression of reactive oxygen species (ROS) are critical objectives in minimizing ischemia-reperfusion injuries in liver graft preservation. M101 (HEMO2life®, Hemarina Ltd, France) is a novel oxygen-carrier (40x the oxygen of tetrameric human haemoglobin) with anti-oxidant activity extracted from marine lugworm haemolymph that has the potential to achieve both of these objectives when added to organ preservation solutions.

Methods. Using fluorimetry-coupled respirometry, we measured *in vitro* mitochondrial respiration and ROS production in liver biopsies at the end of graft preservation and post-reperfusion, under cold static storage (CSS), and hypothermic machine perfusion (HMP). We also investigated the impact of preserving liver biopsies with 1 $g.L^{-1}$ M101.

Results. Overall, mitochondrial respiration was reduced after CSS and HMP preservation, with a ~3-fold decrease in inferred ATP production capacity at the end of preservation, and this remained low at the time of reperfusion. ROS production was increased after reperfusion in livers preserved under CSS ($F_{(1, 40)} = 4.486$; $P = 0.04$), but not under HMP ($P = 0.13$). While M101 did not restore *in vitro* mitochondrial respiration in samples tested post-preservation and post-reperfusion, M101 preserved mitochondrial respiration in samples measured pre-preservation and incubated for >2h at 4ºC *in vitro* ($F_{(1.071, 9.643)} = 7.406$; $P = 0.02$). Moreover, M101 fully suppressed ROS production.

Conclusion. M101 preserved respiration and supressed ROS production. Clinical studies are needed to assess the safety and efficacy of M101 as an additive to preservation solutions used for CSS and HMP.





Abstract No. 38

TREATMENT WITH A SPECIFIC INHIBITOR OF THE COMPLEMENT LECTIN PATHWAY PROTECTS AGAINST RENAL ISCHEMIA-REPERFUSION INJURY IN MICE

BONGONI A[1], MCRAE J[1], SALVARIS E[1], FISICARO N[1], KISS B[2], PÁL G[2], GÁL P[2], COWAN P[1,3]

[1]Immunology Research Centre, St Vincent's Hospital Melbourne, [2]Department of Biochemistry, Eötvös Loránd University Budapest-Hungary, EvolVeritas Biotechnology Ltd, [3]Department of Medicine, St Vincent's Hospital Melbourne, University of Melbourne

Background: Complement is a potent mediator of ischemia-reperfusion injury (IRI), which significantly affects function and survival of transplanted kidneys. Complement is activated by the classical, alternative and lectin pathways. Mannan-binding lectin–associated serine proteinase (MASP)-2 is essential for lectin pathway activation, which contributes to IRI and is a potential drug target. We constructed a stable homodimer EVO24L comprising a MASP-2 inhibitor recombinantly fused to a human IgG Fc.

Aims: To test EVO24L for the suppression of complement-mediated IR-induced organ damage in a mouse model of renal IRI.

Methods: 10-12 week-old male C57BL/6 mice were subjected to right nephrectomy and left renal ischemia for 22 min (IRI), or nephrectomy only (Sham). Mice (n=8/group) were treated with 2x EVO24L or vehicle control: i.p. 2 h pre-ischemia (600 mg/kg) and i.v. immediately post-reperfusion (300 mg/kg). Mice were euthanized 24 hr post-reperfusion, and serum and plasma samples were collected to assess renal function (creatinine, urea) and complement activation (C5a). Kidneys were harvested to analyse histopathology (tubular injury), complement C9 deposition and immune cell infiltration.

Results: Compared to Sham, severe renal injury was induced following IR in vehicle-treated mice as indicated by significantly increased creatinine and urea, C5a, tubular injury, C9 deposition, and cellular infiltration. EVO24L treatment protected against IR-induced damage, with significantly lowered renal dysfunction, tubular injury, complement activation and cell infiltration.

Conclusion: Complement lectin pathway inhibition using EVO24L protected against kidney IRI. Blockade of lectin pathway activation by EVO24L is thus a promising therapeutic approach to reduce IRI and improve organ transplant function.

	Sham	IRI / Vehicle	IRI / EVO24L	p value (Vehicle vs. EVO24L)
Creatinine (μM)	25.2 ± 5.2	170.2 ± 73.1	64.0 ± 42.1	0.01
Urea (mg/dL)	60.1 ± 5.2	344.2 ± 114.6	160.9 ± 144.7	0.02
Tubular injury (%)	0.0	49.2 ± 15.7	16.5 ± 23.2	0.01
Plasma C5a (ng/mL)	1.5 ± 1.0	23.0 ± 8.3	13.5 ± 5.5	0.015
C9 deposition (RawIntDen)	$2.8 \pm 1.7 \times 10^5$	$7.7 \pm 2.6 \times 10^7$	$4.5 \pm 1.8 \times 10^7$	0.008
Neutrophils (counts/HPF)	0 ± 1	49.0 ± 16.0	34.0 ± 9.0	0.04
Macrophages (counts/HPF)	0 ± 1	50.0 ± 12.0	33.0 ± 8.0	0.02

Abstract No. 39

RENAL OUTCOMES OF NRP-DCD RECIPIENTS IN THE IMMEDIATE POST-OPERATIVE PERIOD: A COMPARISON WITH MATCHED DCD-SCS RECIPIENTS

CLARKE G, HALLE-SMITH J, MANGCO J, PAPAMICHAIL M, RAZA S, NUTU A, SANABRIA-MATEOS R, DASARI B, BARTLETT D, PERERA T, ROBERTS K, MERGENTAL H, SUTHANANTHAN A

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Introduction: Normothermic regional perfusion (NRP) is a novel technique of organ recovery and assessment following circulatory death (DCD). Whilst renal dysfunction is more prevalent following DCD liver transplantation, we postulate this is mitigated following NRP-DCD. We investigated the effects of DCD-NRP on patients renal function in the immediate post-operative period.

Methods: A retrospective cohort study was performed for all patients who underwent DCD-NRP liver transplantation at Queen Elizabeth Hospital Birmingham between January 2022 and January 2024. DCD-NRP recipients were 2:1 matched with DCD-SCS recipients between 2010–2020. Recipients were matched with regard to the UK DCD risk score. Donor and recipient risk factors, and recipient renal and liver biochemistry were collected.

Results: Eighteen patients received a DCD-NRP liver transplant, matched to 36 patients receiving DCD-SCS organ. In the DCD-NRP cohort, there was 100% graft and patient survival, with no incidence of ischaemic cholangiopathy. DCD-NRP cohort had a reduced peak creatinine (145% vs. 162%, p=0.0071) and reduced GFR change (-26% vs. -29%, p=0.0151), with corresponding reduction in rates of acute kidney injury (Figure 1). Median MEAF score in DCD-NRP cohort was also reduced (3.5 vs. 3.9, p=0.5).

Discussion: In our early experience, we found that patients who received DCD-NRP organs had a reduced renal hit compared to DCD-SCS recipients. Whilst there is a trend towards a reduced MEAF score in DCD-NRP recipients, further numbers will be required to assess this further. NRP remains a powerful technique in assessing and optimising DCD livers, allowing safe expansion of the donor pool.

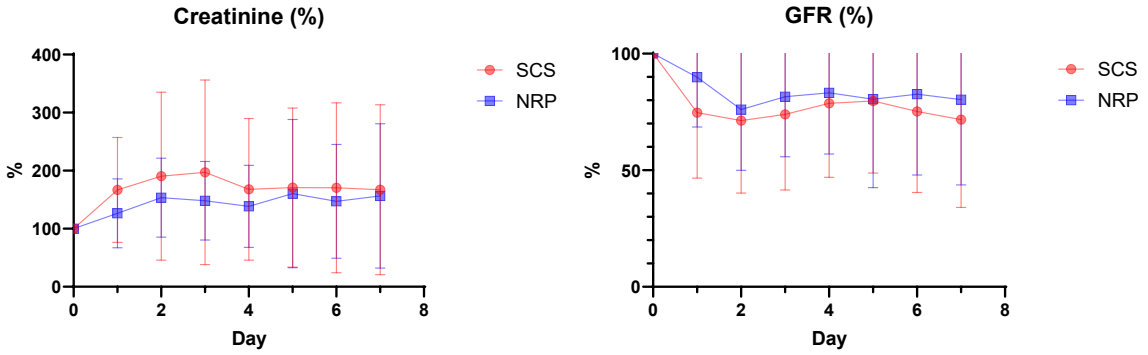

Figure 1

Abstract No. 40

SHORT COURSE TOTAL LYMPHOID IRRADIATION POST HEART TRANSPLANT FOR RECALCITRANT REJECTION – A SINGLE CENTRE EXPERIENCE

LEE F[1], FAZACKERLEY C[1], KIRUPANANTHER H[2], VAZ C[2], TRUONG L[3], DOWNING J[3], D'ORSOGNA L[4], LIM T[5], SHAH A[1], LAM K[1]

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Aims: A retrospective review of patients who received a short course of total lymphoid irradiation (TLI) post heart transplantation (HTx) for refractory cardiac rejection in Western Australia.
Methods: Information was obtained from electronic medical records and the transplant database.
Results: From 2001-2023, 21 HTx recipients (mean age ± std 44.2±12.8 years; 47.6% female) received TLI. Five patients were highly sensitized pre-HTx (calculated panel-reactive antibody >80%). Eleven patients had a left ventricular assist device pre-HTx. Induction immunosuppression (n=12), which only became routine in the post-2010 era, comprised of basiliximab or antithymocyte globulin. Maintenance immunosuppression mostly consisted of mycophenolate, prednisolone and a calcineurin inhibitor. Other immunotherapy included plasmapheresis (n=11), intravenous immunoglobulin (n=6), and rituximab (n=8). Patients received 4.5Gy of TLI in four fractions over 4 consecutive days (median of 178 days post-cardiac transplant; IQR 44-914 days). TLI was well tolerated with no persistent lymphopenias. Eleven patients had no significant cellular or antibody mediated rejection detected post TLI (median follow-up 407 [IQR 190-2414] days). Thirteen patients, all transplanted pre-2010, have since deceased (median graft survival 11.9 [IQR 4.8-12.1] years, mean follow-up 8.2 years). One patient died of metastatic colon cancer. Two patients received a second TLI course and both patients underwent re-HTx for graft dysfunction.
Conclusions: We report the largest case series of patients in Australia who received TLI post HTx. Short-course TLI is well tolerated, and an alternative option for patients with cardiac rejection refractory to routine immunotherapy. Further studies are required to assess the longer-term efficacy of this treatment.

Abstract No. 41

GIVING YOUNG PEOPLE THE RESOURCES THEY NEED TO MAKE DECISIONS SURROUNDING ORGAN AND TISSUE DONATION

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Aims: Develop and disseminate education videos addressing young peoples' knowledge gaps surrounding organ donation.
Methods: Thematic analysis of focus groups with young people was performed in 2022. This identified both knowledge gaps young people had, and preferences on organ and tissue donation messaging.
Results: Nine short educational videos were produced in consultation with a youth working group. A young transplant recipient within the target demographic hosted the videos covering topics including; what is organ and tissue donation, what is the register, how to register, myths and the importance of conversations. Additional interview style videos were made sharing the stories of a young donor family and transplant recipient. In collaboration with a university media team, a campaign was created to disseminate these resources through university social media channels and displayed call to action graphics digital screens across 5 regional and metropolitan campuses. Ten days into the 40 day campaign, over 58,500 people were reached and over 1,200 have clicked through to "learn more." After the campaign, metrics including number of people reached, click through rate, video website visits and video views will be reported. The number of people who register directly on the DonateLife website throughout this campaign will also be reported.
Conclusion: The generation of educational resources informed by research on young people may fill the knowledge gaps young people have about organ and tissue donation. University partnership allows campaigns to be targeted to where young people visit frequently, increasing the awareness and promoting discussions surrounding organ and tissue donation.

Abstract No. 42

INFECTION TRANSMISSION RISK FROM KIDNEY DONORS WITH ACTIVE HEPATITIS B: A SYSTEMATIC REVIEW AND META ANALYSIS OF OBSERVATIONAL DATA

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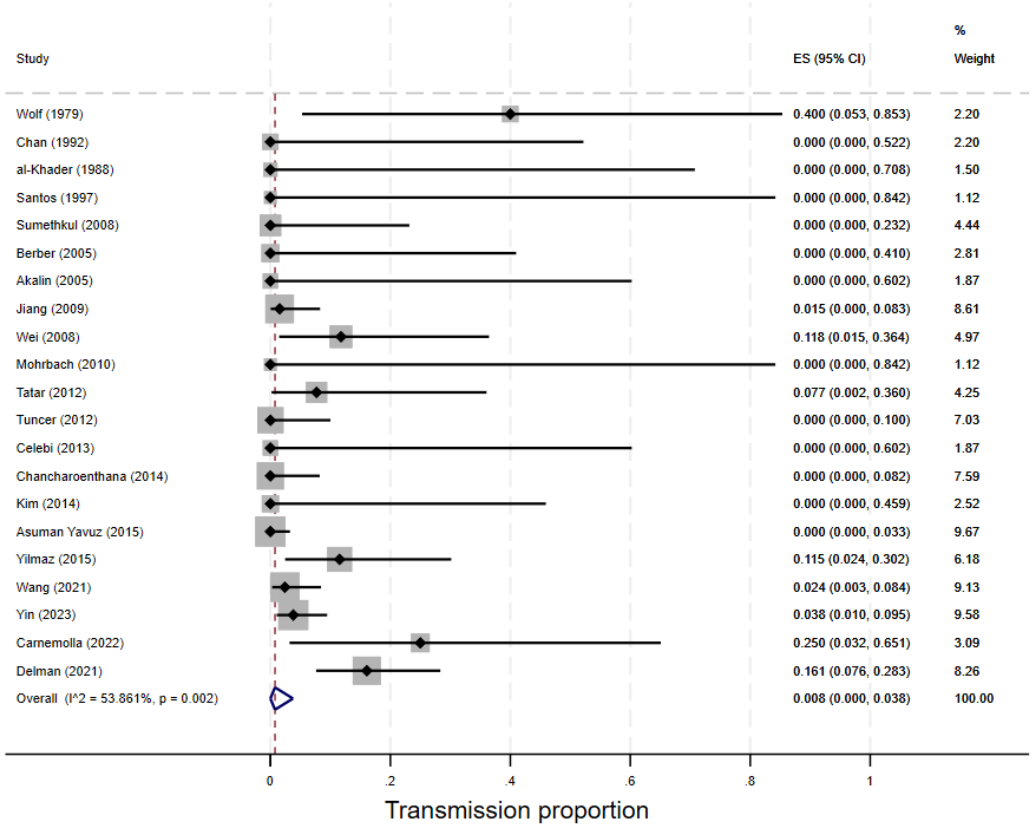
Aims: Potential kidney donors with active hepatitis B (HBV), defined as positive surface antigen (HBsAg) and/or nucleic acid test (NAT), are usually declined for HBsAg-negative recipients. With vaccination and antivirals, transplantation could be safe. We aimed to quantify the transmission risk.

Methods: Systematic review and meta-analysis, searching MEDLINE for "hepatitis B" and "kidney transplantation". We included cohorts of kidney transplantation from donors with active HBV to HBsAg-negative recipients. Transmission was defined as HBsAg or HBV NAT positivity post-transplant. Transmission proportions were pooled using meta-analysis with random effects, employing Freeman-Turkey double arcsine transformation and exact 95% confidence intervals.

Results: After screening 3,143 records, 21 cohorts were included. Among 606 donors, most were living (57%); all had positive HBsAg but most had negative NAT (55%). Among 614 recipients, most had protective surface antibody (HbsAb, 86%) titres, and many were core antibody positive (48%). Prophylaxis varied in strategy (8 cohorts universal, 6 none), type (hepatitis B immunoglobulin 37% recipients, antivirals 44%) and duration. There were 26/614 HBV transmissions (4.2%), fewer where all recipients had protective HBsAb (1.3%) or all donors had negative NAT (0.6%). There were 2 deaths due to HBV (0.3%): both occurred off prophylaxis (one never given, one post short course). The pooled transmission rate was 0.8% (95%CI: 0.00-3.8%, Figure 1) although there was substantial heterogeneity between studies (I^2=53.9%). This may be explained by differences in case ascertainment, prophylaxis or donor/recipient factors.

Conclusion: Given low transmission rates, donation could be considered from kidney donors with active hepatitis B in controlled circumstances.

Figure 1: Forest plot of HBV transmissions from observational studies of donors with active HBV to susceptible recipients



Abstract No. 43

PRE-TRANSPLANT ANGIOTENSIN TYPE I RECEPTOR ANTIBODIES ARE ASSOCIATED WITH ACUTE KIDNEY INJURY POST-LUNG TRANSPLANT

DARIE A[1], HIHO S[2], ENNIS S[1], LEVVEY B[1], SHINGLES H[1], PARASKEVA M[1], LEVIN K[1], WESTALL G[1], SULLIVAN L[2], SNELL G[1]

[1]Lung Transplant Service, Alfred Hospital, Melbourne, [2]Australian Red Cross Blood Service, Australia

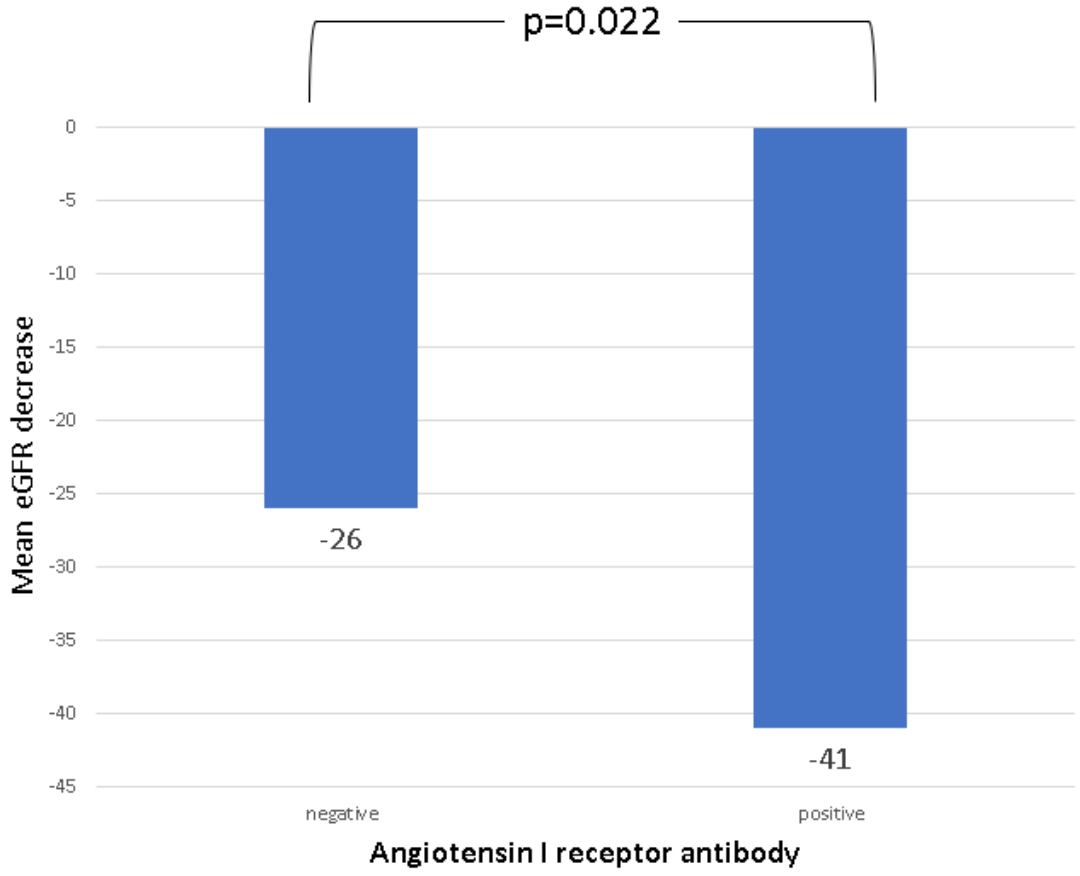
Introduction Antibodies to angiotensin type 1 receptor (AT1Rabs) have been linked to poorer graft outcome in both kidney (KTx) and lung transplant (LTx) recipients. In KTx, a decline in kidney function in the presence of AT1Rabs might solely reflect graft rejection, whereas this association in LTx would imply an alternate immunogenic process leading to an acute kidney injury (AKI).

Methods In this single-centre observational study we explored the association between pre-LTx AT1Rabs and post-LTx AKI in 85 adult patients undergoing LTx July 2014- December 2023. AT1Rabs >17 U/ml were considered positive. Kidney function was assessed using the CKD-EPI formula from LTx until discharge. AKI was defined as a sharp increase (within 48 hours) in serum creatinine of ≥26.5 mmol/L.

Results The mean age of the patients at LTx was 58 ± 10yrs and 60% were male. The mean concentration of serum AT1Rabs was 13±8 and 15/85 (18%) of the subjects had a positive titer. AKI occurred in 40/85 (47%) of cases post-LTx and was more prevalent in the AT1Rabs positive cohort (40% vs 73%, p=0.023). Accordingly, the decrease in kidney function was more pronounced in the AT1Rabs population (-26 ± 23 vs -41 ± 26 mL/min/1.73m^2, p=0.022) (Figure 1). Positive AT1Rabs were associated with a four-fold higher risk of developing AKI (OR 3.88, CI 1.1-13.4, p=0.032).

Conclusions Pre-LTx AT1Rabs are associated with AKI following LTx and might also be relevant as a mechanism of injury following KTx.

Figure 1. eGFR decrease post-LTx



Abstract No. 44

DYNAMIC OF ANGIOTENSIN TYPE I RECEPTOR ANTIBODIES IS ASSOCIATED WITH POOR GRAFT FUNCTION FOLLOWING LUNG TRANSPLANT

DARIE A[1], LEVVEY B[1], SHINGLES H[1], PARASKEVA M[1], LEVIN K[1], ENNIS S[1], HIHO S[2], SULLIVAN L[2], WESTALL G[1], SNELL G[1]

[1]Lung Transplant Service, Alfred Hospital, Melbourne, [2]Australian Red Cross Blood Service, Australia

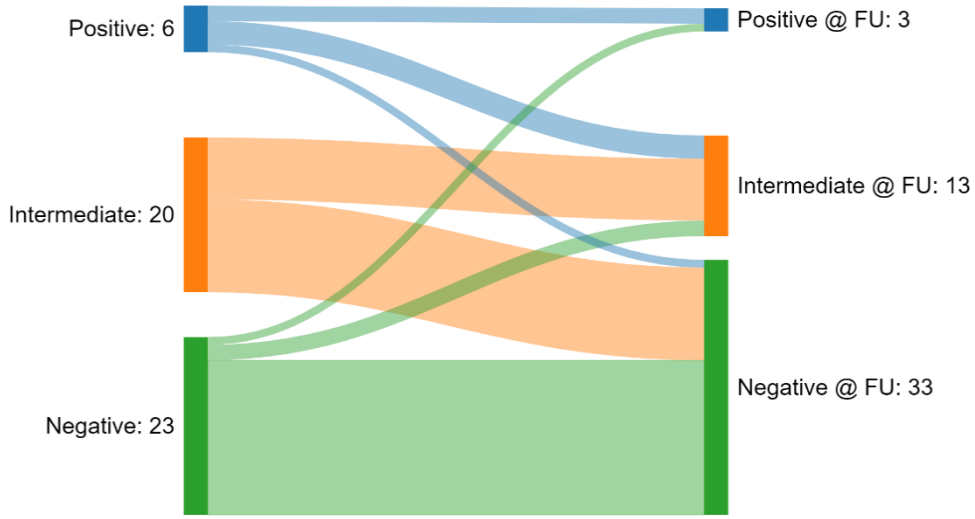
Introduction Lung transplantation (LTx) saves the lives of patients with end-stage lung disease, but the longevity of transplanted lungs is much lower than that of other transplanted organs. Antibodies to angiotensin type 1 receptor (AT1Rabs) have been linked to poorer graft outcome.

Methods In this single-centre, longitudinal, observational study we assessed 49 patients that underwent LTx July 2014 and October 2015 at The Alfred. AT1Rabs levels were measured pre-LTx and one-year post-LTx. AT1Rabs levels ≤10 U/ml were considered negative, >10 U/ml and ≤17U/ml intermediate, and >17 U/ml positive.

Results The mean age at LTx was 59±9 and 53% were male. The mean follow up time was 7±3 years. There was a significant decrease in AT1Rabs levels after LTx and implementation of immunosuppressive therapy (12.3 U/l vs 9.8 U/l, p<0.001). The change in AT1Rabs levels between negative, intermediate and positive can be defined as increasing, stable or decreasing (Figure1):6% of patients had an increase in AT1Rabs levels, whereas 61% were stable and 33% had a decrease. A risk category increase was associated with a lower FEV1% predicted value at 12 months compared to patients with stable or decreasing risk category (60%vs92%vs82%, p=0.039). Additionally, a risk category increase was associated with baseline lung allograft dysfunction (p=0.025).

Conclusions An increase in risk according to AT1Rabs levels is associated with poor graft function following LTX.

Figure 1. Dynamic of AT1Rabs after LTx. FU, Follow up



Abstract No. 45

NEPHROLOGIST VIEWS ON DECEASED DONOR KIDNEY TRANSPLANT OFFER PROCESSES: A QUALITATIVE STUDY

WEIGHTMAN A[1], DUNCANSON E[2], COGHLAN S[3], CLAYTON P[2]

[1]School of Medicine, University of Adelaide, [2]ANZDATA, South Australia, [3]School of Computing and Information Systems, University of Melbourne

Background: Assessment of kidney transplant offers can be difficult, requiring a nuanced consideration of the specific risks and benefits for the recipient. To date, there has been limited research into this decision-making process from the perspective of the doctors involved.

Aims: To explore the experiences and considerations of nephrologists at the time of deceased donor kidney transplant offers.

Methods: Semi-structured interviews were conducted with 14 nephrologists from five hospitals across South Australia and the Northern Territory. Transcripts underwent thematic analysis.

Results: Four key themes were identified: necessity of trust (including subthemes of faith in the system, decision making as a team and sharing the journey with the patient), good enough offers (pragmatism as an asset, balancing competing risks, acceptance of uncertainty), value based tensions (respecting patient autonomy, protecting donors and their families, awareness of social justice obligations) and doctor as the ultimate decision maker (burden of decision making, the art of transplant medicine, preparation as an essential part of the offer process).

Conclusion: Nephrologists are keenly aware of the many competing interests to be balanced at the time of kidney transplant offer and are comfortable with their role as principal decision maker in this process. However, they were less clear about the ideal level of patient involvement in this process, with many nephrologists identifying the tension between respecting patient autonomy and ensuring optimal patient outcomes, at an individual and societal level. The study demonstrates a need for further research to explore these issues from the patient perspective.

Abstract No. 46

THE IMPACT OF DONOR AND RECIPIENT DIABETES ON PATIENT AND GRAFT SURVIVAL IN RENAL TRANSPLANT RECIPIENTS

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[1]Central and Northern Adelaide Renal and Transplantation Service, The University of Adelaide, Royal Adelaide Hospital, [2]ANZDATA, South Australia, [3]Royal Prince Alfred Hospital, Sydney

Aims: The use of deceased kidney donors with diabetes is increasing in the context of the growing demand for organs for transplantation. We aimed to assess graft and patient survival when the donor, recipient or both have diabetes.

Methods: Data from the Australia and New Zealand Dialysis and Transplant Registry (ANZDATA) were used to analyse first-time recipients of deceased-donor kidneys between 2004-2022. A Cox proportional hazards model compared the primary outcomes of death censored graft survival (DCGS) and overall patient survival across four combinations of donor/recipient diabetic status.

Results: There were 11,343 recipients amongst the four groups; n=7381 donor/recipient both non-diabetic, n=3249 recipient only diabetes, n=524 donor only diabetes and n=189 donor/recipient both diabetic. The mean age at transplant was 51 years (SD 12.6); 79.4% were deceased by brain death donors. Unadjusted DCGS was worse if both donor and recipient were diabetic (figure 1); this difference was maintained after adjustment (HR 1.707; CI 1.157-2.520; p =0.007). There was no difference in DCGS if donor only diabetes (HR 0.950; CI 0.757-1.192; p=0.658). Patient survival was poorest if both had diabetes (HR 1.779; CI 1.334-2.371; p = 0.000), followed by diabetic recipients with a non-diabetic donor (HR 1.383; CI 1.188-1.609; p=0.000).

Conclusions: These data support the use of diabetic donor kidneys for non-diabetic recipients, with no difference identified in graft survival. Diabetic donor/recipient combinations may lead to shorter graft and patient survival, therefore allocation in these circumstances must be approached with caution.

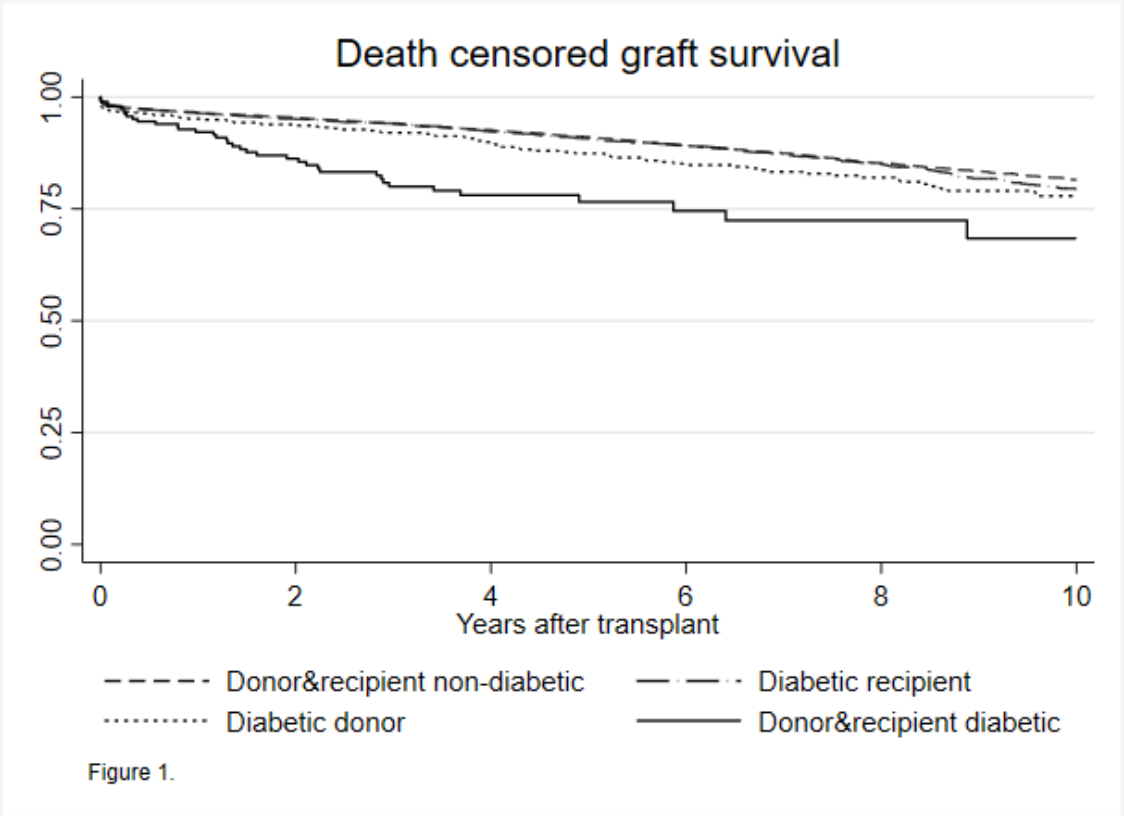


Figure 1.

Abstract No. 47

SKIN CANCER MORTALITY IN KIDNEY TRANSPLANT RECIPIENTS: AN AUSTRALIAN COHORT STUDY USING LINKED HEALTH DATA, 1980-2019

FORCEY D[1], ROSALES B[1], DE LA MATA N[1], KELLY P[1], WYLD M[1,2], WYBURN K[3], WEBSTER A[1,2,4]

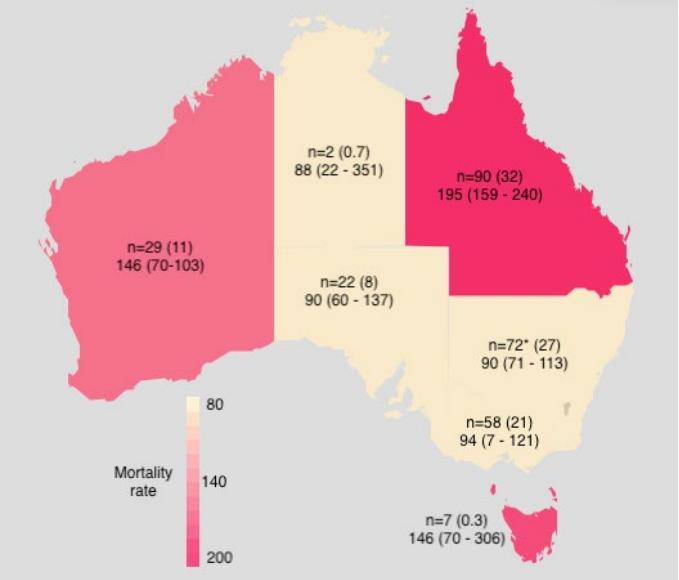
[1]School of Public Health, University of Sydney, [2]Renal Medicine and Transplantation, University of Sydney, Westmead Hospital, [3]Nephrology and Renal Transplant, Royal Prince Alfred Hospital, Sydney, University of Sydney Medical School, [4]NHMRC Clinical Trials Centre, Westmead Hospital, Sydney

Aims: We sought to describe skin cancer mortality in Australian kidney transplant recipients and any differences by age, sex, initial state of registration on kidney replacement therapy and era.

Methods: This population-based cohort study of Australian kidney transplant recipients analysed data from the Australian and New Zealand Dialysis and Transplantation Registry from 01/01/1980 to 31/12/2019. Date and underlying cause of death were ascertained by data linkage with the National Death Index at the Australian Institute of Health and Welfare and classified using ICD10AM codes.

Results: Of the 20,954 transplant recipients with a total follow-up of 241,047 person-years (py), there were 280 deaths from skin cancer, 85 from melanoma and 195 from keratinocyte cancer. Skin cancer mortality rate was 116 per 100,000py (95% CI 103- 131) and rates fell each decade from 1980 to 2019. Caucasians account for 97% (n=271) of skin cancer deaths. Median time from first kidney transplant to death was 8 years (IQR 4-12 years) for melanoma and 12 years (IQR 7-18 years) for keratinocyte cancer. The mortality rate from skin cancer was highest in males (143 per 100,000py, 95% CI 124 – 163, compared to 76 per 100,000py, 95% CI 61 – 96 among females), those aged 50-59 years (463 per 100,000py, 95% CI 366 – 586), and among those in Queensland, followed by Western Australia and Tasmania (Figure 1).

Conclusions: Australian kidney transplant recipients have high rates of skin cancer mortality. Sex, age and state-based differences in skin cancer mortality may have implications for post-transplant screening programs and policy.



n deaths (%, of total number of deaths from skin cancer during study period, n=280), #Mortality rate per 100,000 population (95% CI) of Australian kidney transplant recipients (n=20,954), *Data combined for New South Wales and the Australian Capital Territory

Abstract No. 49

INTEGRATING ARTIFICIAL INTELLIGENCE IN ORGAN TRANSPLANTATION DIAGNOSTICS: A COMPREHENSIVE EVALUATION USING THE PROMAD ATLAS

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Introduction: Advances in sequencing technologies have revolutionized our understanding of molecular markers in disease, particularly in organ transplantation. The PROMAD atlas, encompassing over 14,000 biopsy and 2,000 blood samples from various transplants, sets the stage for exploring artificial intelligence (AI)'s role in diagnosing allograft dysfunction. This study evaluates AI's diagnostic potential using PROMAD's extensive dataset.

Methods: We developed two transcriptomic biomarkers from PROMAD's 233 omics datasets for detecting allograft dysfunction in both biopsy and blood samples. These biomarkers were validated in a prospective cohort study at Westmead Hospital. Additionally, we utilized transformer architecture AI models to predict allograft dysfunction from histology slides, aiming to refine diagnostic processes.

Results: Our results demonstrate that a machine-learning model integrating information from multiple organs outperforms models trained solely on individual organs. Specifically, the pan-organ model achieved a mean area under the curve of 0.84 in predicting rejection across 2,000 peripheral blood samples. Our biopsy-based biomarker outperformed BHOT in predicting DGF, rejection and fibrosis in a prospectively recruited cohort. Similarly, our histology-based AI model showed promising comparability to more expensive omics-based biomarkers in diagnostic performance across DGF, rejection and fibrosis in our prospective cohort.

Conclusion: This study highlights AI's transformative potential in organ transplantation diagnostics, offering a novel, highly accurate approach to predicting allograft dysfunction. By making our diagnostic tools publicly available, we provide a valuable resource for integrating AI into clinical practice, paving the way for improved patient outcomes.

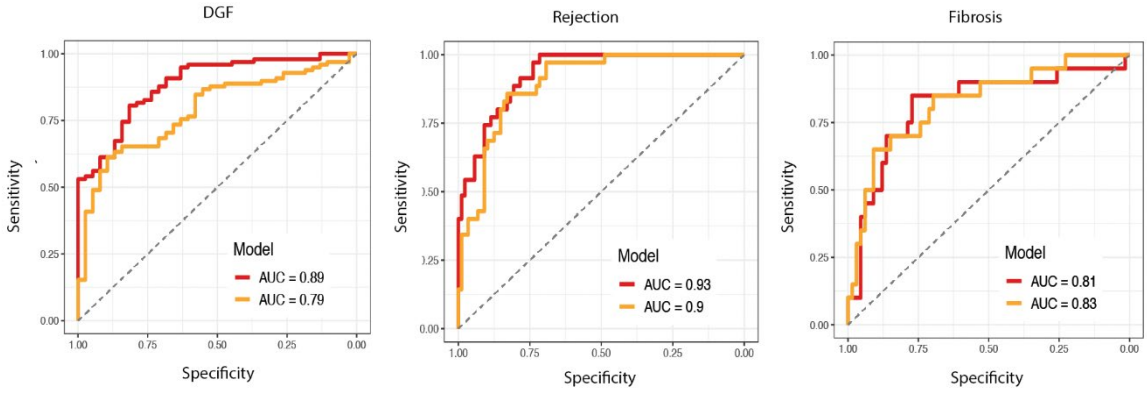

Figure 1: ROC curves comparing BHOT (orange) and the data-derived panel from PROMAD (red) in predicting **A.** delayed graft function (DGF), **B**. biopsy-proven acute rejection, **C**. biopsy-proven fibrosis using the Australian Chronic Allograft Dysfunction (AUSCAD) as an external validation cohort.

Abstract No. 50

IS LONG-TERM (>7 DAYS) EX-SITU NORMOTHERMIC MACHINE PERFUSION CAPABLE OF INDUCING REGENERATION IN HUMAN LIVERS?

NIU A, HUANG J, CHEN J, LAU N, LY M, RISBEY C, BABEKUHL D, YOUSIF P, HANSON K, DENNIS C, LIU K, MCKENZIE C, KENCH J, CRAWFORD M, MCCAUGHAN G, PULITANO C

Transplant Surgery, Royal Prince Alfred Hospital, Sydney

Background: Ex-situ normothermic perfusion offers a unique platform for regenerative therapy, opening the potential to cultivate livers from partial grafts for transplantation. Knowledge from hepatectomies suggest regenerative changes take place over at least 7 days, with an initial shift from glucose to lipid as the primary substrate for energy production. This study aims to assess liver regeneration during long-term normothermic machine perfusion (LT-NMP) using a multiomics approach.

Methods: Partial human liver grafts were perfused using our LT-NMP protocol. Nine grafts surviving >7 days were included. Liver viability was determined through haemodynamic parameters, bile production, glucose metabolism and lactate clearance. Liver regeneration was assessed via volumetric analysis of hepatocyte size and immunochemistry. Key signaling pathways associated with regeneration were identified through lipidomics, metabolomics, and next generation sequencing. Microvesicular and macrovesicular steatosis were assessed histologically.

Results: Throughout perfusion, 5 grafts displayed an increase in hepatocyte size. Progressive accumulation of microvesicular steatosis was observed after 7 days, reflective of a transient regeneration-associated steatosis (TRAS). Metabolomic and lipidomic analyses demonstrated an accumulation of intracellular triglycerides and membrane phospholipids and a reduction in free carnitine, suggesting a shift towards lipid utilisation for membrane synthesis, over mitochondrial β-oxidation. RNA sequencing identified novel gene expression.

Conclusion: Our results suggest that TRAS occurs during LT-NMP (>7 days). We observed lipid accumulation and changes in lipid metabolism, suggesting a coordinated response within regenerating hepatocytes to reserve lipids for membrane synthesis and cellular proliferation. These findings unveil the potential for hepatocellular regeneration during LT-NMP, fostering the future of liver transplantation.

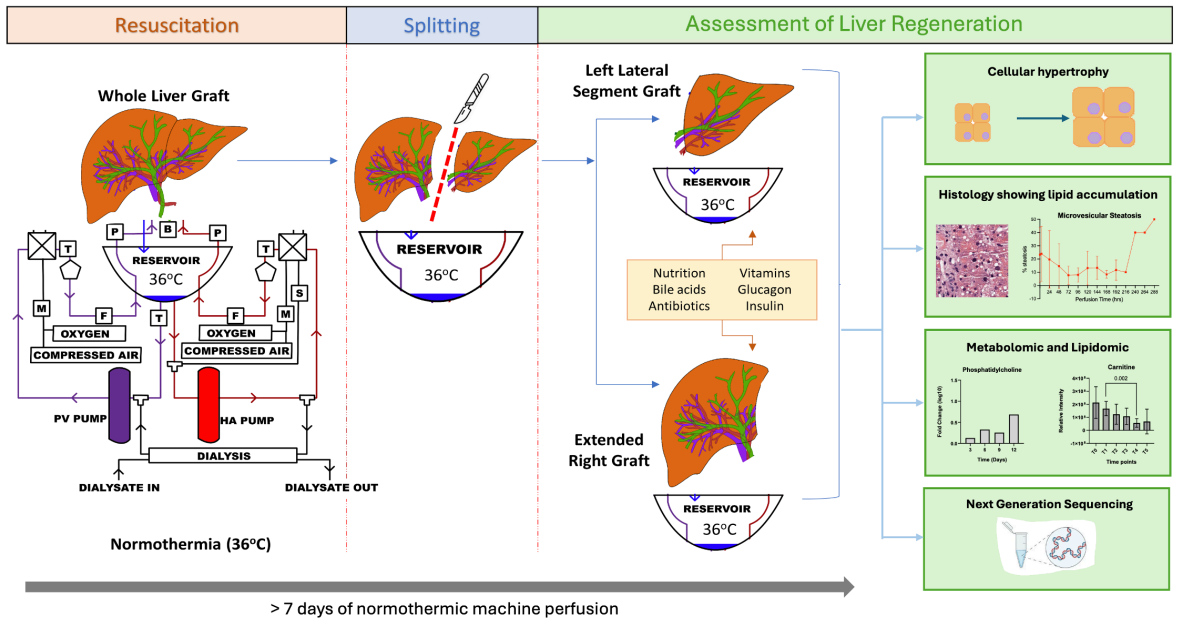

Figure 1. Summary of experimental design and results of long-term normothermic machine perfusion suggesting potential liver regeneration.

Abstract No. 51

INULIN SUPPLEMENTATION IMPROVES GLYCAEMIC CONTROL IN ACUTE KIDNEY TRANSPLANT RECIPIENTS – RESULTS FROM THE DIGEST TRIAL

SINGER J[1], GILBERT A[1], YING T[1], MACIA L[2], WU H[1], CHADBAN SJ[1]

[1]Department of Renal Medicine, Royal Prince Alfred Hospital, Sydney, [2]Faculty of Medicine and Health, University of Sydney, Sydney

Aims: Dysglycaemia following kidney transplantation is common, with both new onset diabetes after transplant (NODAT) and impaired glucose tolerance (IGT) conferring increased risks of cardiovascular disease and death. The gut microbiome is associated with the development of metabolic disease, and prebiotic enhancement of the microbiota has been shown to improve glycaemic parameters, although this has not been studied in KTRs.

Methods: We conducted a single centre, open-label, randomised trial, where 40 acute KTRs were randomised at 28 days post-transplant to a 4-week period of inulin supplementation (20 g/day) or standard care. Glycameic metrics were captured using continuous ambulatory glucose monitoring (CGM) and changes in gut microbiota through 16s rRNA sequencing.

Results: Participants were male (27/40, 68%), age 49 ± 14 years (mean/SD), with diabetes present in 9 (22%) pre-transplant, and 16 (40%) post-transplant. Inulin was feasible, tolerable, and safe in the early post-transplant period. In non-diabetic KTRs, inulin improved glycaemic measures at week 8 with a reduction in mean glucose (5.7 vs 6.4; mmol/L, p = 0.019), time above target range (>7.8 mmol/L, 9.7 vs 23.0; %, p = 0.04), and reduced glucose variability (mean amplitude of glycaemic excursions (MAGE), 2.2 vs 3.4; mmol/L, p = 0.04).

Conclusions: Inulin supplementation is a feasible intervention that improves dysglycaemia in the early post-transplant period. Larger clinical trials are now indicated to assess its role in preventing NODAT.

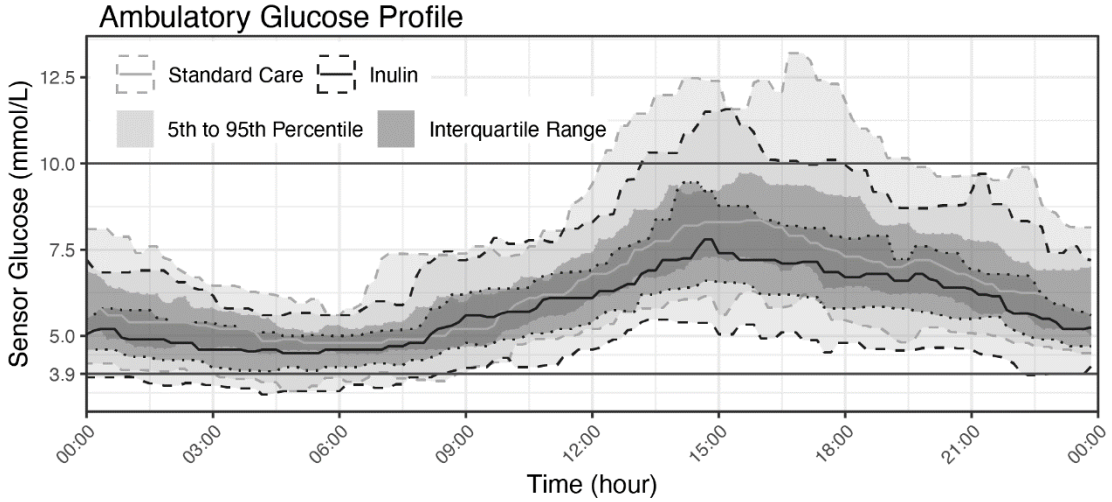

Figure 1: Ambulatory glucose profiles of non-diabetic KTRs during the fourth week of inulin supplementation of standard care.

Abstract No. 52

DRUG REPURPOSING IN THE CONTEXT OF ACUTE KIDNEY INJURIES

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Introduction: Acute kidney injury (AKI) continues to be a major clinical concern, involving a fifth of all adult hospital admissions. A lack of treatment other than standard-of-care, there is a substantial unmet clinical need to determine alternative therapy.

Methods: We identified publicly available RNA sequencing datasets of ischemia reperfusion injury (IRI) in mice and developed a customised bioinformatics pipeline to determine differentially expressed genes (DEG) and conserved pathways. These were mapped onto drug databases to find potential therapeutic agents. Male, C57BL/6 mice underwent bilateral renal IRI (20 minutes/36°c) and were treated peri-operatively with relevant drugs. Analysis of renal function, histology and biomolecular phenotyping was performed 24-hours post-operatively.

Results: We curated a list of 24 DEG in IRI and mapped these against KEGG and Gene Ontology databases, revealing changes in metabolic processes as the most crucial gene disturbances. We mapped this data to 22 drug databases, identifying perhexiline, disulfiram and MCC950 as potential drug repurposing candidates. Administration of either drug prior to IRI was protective against injury, demonstrating lower serum creatinine, histological injury and cell death (TUNEL staining). Disulfiram, but not perhexiline, limited pro-inflammatory cytokine transcripts in kidney tissue. Perhexiline decreased fatty acid accumulation (Oil Red O staining) and upregulated expression of anti-apoptotic factors, including Bcl-xL. MCC950 had no impact on the severity of IRI.

Conclusion: Bioinformatics analyses enabled us to characterise novel transcriptomic features of AKI and identify several drugs - perhexiline and disulfiram - that can be effectively repurposed for testing in AKI models and subsequent clinical application.

Abstract No. 53

THE IMPACT OF FEMALE SEX AND INTERSECTIONAL DISADVANTAGE ON ACCESS TO DECEASED KIDNEY TRANSPLANTATION IN AUSTRALIA

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Aims: We sought to determine if there are sex-based disparities in access to the deceased donor waitlist and/or transplantation, and how intersectional disadvantages such as minority ethnicity, low socio-economic position, cause of kidney failure, and high co-morbidity burden may interact with such disparities, in contemporary Australia.

Methods: A cohort study using the ANZDATA registry (2006-2021) to explore the associations between sex and intersectional disadvantage and outcomes including waitlisting, deceased donor transplantation, and death. Cox proportional hazards models, two-way interaction models and competing risk analysis adjusted for baseline characteristics were used.

Results: 41,227 patients commenced dialysis during the study period, of which 15,454 (38%) were female, and were followed for 122,400 person-years. In our fully adjusted model, females were 19% less likely to be waitlisted (Hazard Ratio[HR]-0.81;95%CI:0.77-0.84), than their male peers. The sex-based disparity in transplant waitlisting was larger for females with intersectional disadvantage including older age (females >45yrs HR-0.78;95%CI:0.74-0.83 compared to their male peers), ethnic minorities (eg. female Aboriginal and Torres Strait Islander HR-0.57;95%CI:0.48-0.68, female Asian HR-0.76;95%CI:0.69-0.84), low socio-economic position (HR-0.76; 95%CI: 0.69-0.83), diabetic kidney disease as the cause of kidney failure (HR-0.63;95%CI:0.57-0.69), and having ≥3 co-morbidities (HR-0.69;95%CI:0.57-0.84). There was no significant difference in deceased transplantation rates once waitlisted, or death on the waitlist for any groups.

Conclusions: Females have significantly less access to kidney transplant waitlisting than their male peers, and this sex-based disparity is amplified for females with intersectional disadvantage. Once waitlisted, there are no sex-based disparities in rates of deceased donor transplantation or death.

Abstract No. 54

A STANDARDISED METHOD OF MULTI-VISCERAL ORGAN RETRIEVAL FOR TESTING EX VIVO MACHINE PERFUSION IN A LARGE ANIMAL MODEL

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Aim: To develop a replicable method for assessing the quality of ex vivo machine perfusion (EVMP) of multi-visceral abdominal blocks by various novel function tests.

Methods: Twelve Yorkshire pigs were procured before random allocation to one of three preservation groups: static cold storage, normothermic machine perfusion with blood and isothermic machine perfusion with an acellular perfusate (n = 4 for all groups). Following induction of anaesthesia, midline laparotomy gained access to the animals' abdomen. Multi-visceral blocks composed of the liver, both kidneys, pancreas and proximal 100 cm of small bowel were surgically retrieved, with complete thoraco-abdominal mobilisation of the aorta and vena cava. Four units of autologous blood was collected from the supra-hepatic vena cava, prior to cross clamping of the aorta.

Results: Successful short term preservation was achieved for five hours, with en bloc organ function outcomes comparable in respective techniques. For the MP groups there were no statistical differences seen in any of the composite measures including acid base, arterial-venous oxygen differential and tissue ATP analyses. The insulin stimulating effect of GLP-1 demonstrated active small bowel and pancreatic function following luminal stimulation. Fluorescein angiography provided qualitative information of the vascular integrity of the blocks.

Conclusion: Multi-visceral transplantation saves lives. However, there are currently limited models for investigating the quality of preservation in multi-visceral abdominal blocks. This study provides proof of concept that multi-visceral blocks can be feasibly preserved for five hours by ex vivo machine perfusion under different conditions.

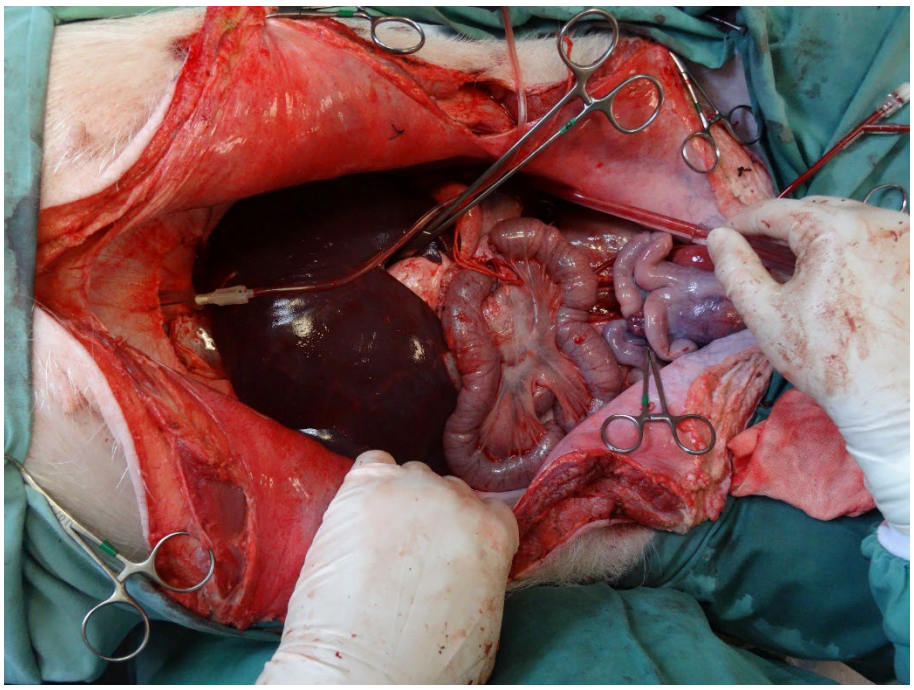

Fig 1: Abdominal block *in situ* following aortic cross clamp

Abstract No. 55

INTRAGRAFT MRNA CHANGES WITH INTRAVENOUS IMMUNOGLOBULIN VERSUS STANDARD CARE IN CHRONIC ANTIBODY MEDIATED REJECTION-VIPAR RCT

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Background: Intragraft gene transcripts have prognostic significance in antibody-mediated rejection (AMR). Mechanism of action of intravenous immunoglobulin (IVIg) and its impact on gene expression in chronic AMR (cAMR) is unknown.

Aims: To assess intragraft gene transcript changes associated with IVIg therapy.

Methods: The VIPAR study compared clinical and histological outcomes in 30 kidney transplant recipients with cAMR randomised 1:1 to 6 months of IVIg versus no-IVIg. mRNA extracted from allograft biopsies taken at 0,3,6 and 12-months post-diagnosis was analysed using NanoString (B-HOT panel). Gene transcript differential expression (DE) was assessed using paired and time-course analyses. DE was defined as >1.5x gene fold change between groups with an adjusted p-value<0.05.

Results: The VIPAR study demonstrated reduced deterioration in allograft injury and eGFR with IVIg relative to no-IVIg. Paired analysis (combined 3,6,12months) revealed 59 downregulated genes in allografts from IVIg-treated relative to no-IVIg-treated patients. Nine of the top 12 DE genes were B-cell related (Table). These genes most commonly associated with haematopoietic, adaptive immune system and T-cell receptor signalling pathways. 12-month time-course analysis demonstrated different profiles for the IVIg relative to no-IVIg group for 21 genes, with one increasing (LTBR) and 20 decreasing including B-cell (PAX5, CD22, SPIB, FCRL2, MS4A1, AICDA, TCL1A, IL4), T-cell/NK cell (CCR4, TNFSF14, CD244,IL4), pro-inflammatory (LTA, CXCL2) and pro-fibrotic (JUN) transcripts. Whilst 13 potentially injurious genes were upregulated in the timecourse analysis of the no-IVIg group, 22 genes were significantly downregulated in the IVIg group.

Conclusion: IVIg impacts intragraft B-cell, T-cell, pro-inflammatory and pro-fibrotic gene expression, providing a mechanistic insight into its therapeutic benefits in cAMR.

Table. Top-12 downregulated DE genes in IVIg vs. no-IVIg paired analysis

Gene name	Immune cell-type association	Action/pathway
Paired Box Gene 5 (PAX5)	B-cell	B-cell development and differentiation
Natriuretic peptide precursor B (NPPB)	Nil	Cardio-renal/tissue homeostasis
Cluster of Differentiation (CD22)	B-cell	B-cell activation, B-cell to B-cell interaction, regulates B-cell receptor signalling
Spi-B transcription Factor (SPIB)	B-cell, Dendritic Cell	Plasmacytoid dendritic cells (IFN producing) development, B-cell receptor signalling
c-c motif chemokine receptor 4 (CCR4)	T-cells (T-reg mainly), NK cells	Chemokine signalling, leucocyte chemotaxis, T-cell activation
TCL1 family AKT coactivator A (TCL1A)	B-cell, Dendritic Cell	B & T-Cell proliferation, regulation and survival
Fc receptor-like 2 (FCRL2)	B-cell	B-Cell receptor signalling, B-cell activation & regulation
CXCR5	B-cell	Chemokine signalling, B-cell migration
Membrane spanning 4, subfamily 4-member 1 (MS4A1/CD20)	B-cell	B-cell development, differentiation and activation
Lymphotoxin Alpha (LTA)	T-cell, B-cell, NK-cell, Monocytes, Dendritic cells	TNF family cytokine produced by lymphocytes, mediates inflammatory response.
Interleukin 4 (IL4)	T-cells, B-cell granulocytes,	Cytokine that promotes and regulates B-cell development, antibody production, inflammation and T-cell response
TNF superfamily member 14 (TNFSF14)	T-cells, NK cells, macrophages, granulocytes	T-cell proliferation and IFN-gamma signalling

Abstract No. 56

CHARACTERISING PANCREATIC ORGANOIDS FROM HEREDITARY PANCREATITIS PATIENTS

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Introduction: Hereditary pancreatitis (HP) is an inflammatory genetic condition typically caused by uncontrolled activation of trypsin within the pancreas. Animal models struggle to recapitulate this disease due to discrepancies in key HP genes such as *PRSS1* and *SPINK1*. Pancreatic organoids provide the opportunity to better study this condition, allowing for modelling of patient specific mutations. We have grown organoids both from healthy pancreas and from *PRSS1* mutant HP samples.

Methods: Pancreatic organoids were derived from samples taken from islet isolations, with HP samples originating from patients undergoing total pancreatectomy with islet auto transplantation (TPIAT). These organoids were embedded within a Matrigel matrix and cultured with a complex organoid growth medium. Phase contrast microscopy images were taken to track organoid growth over time. Organoids were further characterized via qPCR and immunohistochemistry to determine whether they maintained an acinar phenotype and gene expression relevant to HP.

Results: Organoids were successfully grown from HP samples and displayed growth comparable to those of normal pancreas. Characterization of these organoids showed expression of acinar genes including *PRSS1* and amylase, alongside the presence of ductal genes such as *KRT19*, indicating the beginnings of acinar to ductal metaplasia (ADM)

Conclusions: We have demonstrated one of the first instances of growing organoids from HP patient samples, displaying that they maintain the expression of relevant acinar genes. These organoid models have the potential to provide a platform for deeper research into HP, including a better understanding of unique patient gene mutations and the development of new treatments.

Abstract No. 57

THE EPIDEMIOLOGY OF HEREDITARY PANCREATITIS IN AUSTRALIA AND ITS EFFECT ON PATIENT OF TOTAL PANCREATECTOMY WITH ISLET AUTO-TRANSPLANTATION (TPIAT)

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Introduction: Hereditary pancreatitis (HP) is an inflammatory genetic condition typically caused by uncontrolled activation of trypsin within the pancreas. Animal models struggle to recapitulate this disease due to discrepancies in key HP genes such as *PRSS1* and *SPINK1*. Pancreatic organoids provide the opportunity to better study this condition, allowing for modelling of patient specific mutations. We have grown organoids both from healthy pancreas and from *PRSS1* mutant HP samples.

Methods: Pancreatic organoids were derived from samples taken from islet isolations, with HP samples originating from patients undergoing total pancreatectomy with islet auto transplantation (TPIAT). These organoids were embedded within a Matrigel matrix and cultured with a complex organoid growth medium. Phase contrast microscopy images were taken to track organoid growth over time. Organoids were further characterized via qPCR and immunohistochemistry to determine whether they maintained an acinar phenotype and gene expression relevant to HP.

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Conclusions: We have demonstrated one of the first instances of growing organoids from HP patient samples, displaying that they maintain the expression of relevant acinar genes. These organoid models have the potential to provide a platform for deeper research into HP, including a better understanding of unique patient gene mutations and the development of new treatments.

Abstract No. 58

TRENDS IN HOSPITAL UTILISATION AMONG CHILDREN BORN TO TRANSPLANTED MOTHERS IN THEIR FIRST DECADE OF CHILDHOOD

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Aims: We investigated hospital utilisation in the initial decade for children of transplanted mothers (C-Tx) versus those of mothers who had not received kidney replacement therapy (C-non-KRT).

Methods: We utilised linked Australia and New Zealand Dialysis and Transplant Registry, perinatal (births ≥20 weeks gestation, 1991-2013) and hospital admission datasets (until 2018) in SA, WA, ACT and NSW.

Results: Of 1,865,425 babies with 6,063,327 hospital admissions, the C-Tx had 37 birth and 551 subsequent admissions (n=99 babies), with a median follow-up duration of 2.5 years [IQR: 0.9-5.3] (vs 2.9 years [1.1-5.4] C-non-KRT, p=0.03). C-Tx had longer birth admissions (median 6 days, IQR: 4-16) than the C-non-KRT (3 days, 2-5, p<0.001). Almost 70% of C-Tx (vs 34% C-non-KRT) had perinatal-related admissions, associated with gestational issues, respiratory/cardiovascular diseases, haemorrhagic/haematological conditions, endocrine/metabolic disorders, infections and pregnancy complications, ~3-5 times higher than C-non-KRT (p<0.05) (Table 1). Subsequent admissions for respiratory, nervous system, and endocrine/metabolic diseases were more common in C-Tx (7-29%) than the C-non-KRT (4-24%), p<0.05. Prematurity (57% C-Tx vs 8% C-non-KRT) and pre-eclampsia (30% Tx vs 6% non-KRT), as key determinants of neonatal health, were explored. Preterm C-Tx had increased respiratory-related subsequent admissions (41%) than other preterm children (26%, p<0.001). Among women with pregnancy-induced hypertension (including pre-eclampsia), C-Tx had more perinatal conditions (80% vs 51%), endocrine/metabolic diseases (8% vs 4%), and respiratory diseases (35% vs 23%), p<0.05.

Conclusions: This first Australian study of post-birth outcomes in C-Tx revealed extended hospital stays and increased perinatal/respiratory illnesses. These children may require ongoing follow-up in childhood

Table 1. Major disease domains in birth and subsequent hospital admissions for children of transplanted and Non-KRT mothers

Birth admissions		**Transplant N=137 babies Number (%)**	**Non-KRT N=1,501,666 babies**	**p-value**
Perinatal conditions		93 (67.9)	508,782 (33.9)	<0.001
Gestational and fetal growth		71 (51.8)	165,746 (11.0)	<0.001
Respiratory and cardiovascular		56 (40.9)	180,720 (12.0)	<0.001
Haemorrhagic/haematological		40 (29.2)	118,484 (7.9)	<0.001
Endocrine and metabolic		26 (19.0)	73,346 (4.9)	<0.001
Infections		14 (10.2)	50,235 (3.3)	<0.001
Pregnancy, labour and delivery complications		13 (9.5)	73,200 (4.9)	0.02
Digestive system		7 (5.1)	4,904 (0.3)	-
Integumentary system		7 (5.1)	74,108 (4.9)	-
Birth trauma		3 (2.2)	47, 811 (3.2)	-
Other		24 (17.5)	114,489 (7.6)	<0.001
Congenital malformations, deformations and chromosomal abnormalities		15 (10.9)	130,959 (8.7)	0.36
Subsequent admissions		**Transplant[b] N=99 babies N=551 admissions**	**Non-KRT[b] N=1,214,490 babies N=4,542,166 admissions**	
Respiratory system diseases	Babies	34 (36.2)	490,614 (41.7)	0.30
	Admissions	128 (28.8)	909,525 (24.5)	0.04
Infectious and parasitic diseases	Babies	33 (35.1)	352,781 (30.0)	0.31
	Admissions	63 (14.2)	550,493 (14.8)	0.74
Nervous system diseases	Babies	4 (4.3)	92,401 (7.8)	-
	Admissions	68 (15.3)	160,053 (4.3)	<0.001
Endocrine, nutrition and metabolic diseases	Babies	8 (8.5)	98,901 (8.4)	-
	Admissions	33 (7.4)	148,945 (4.0)	0.001
Digestive system diseases	Babies	20 (21.3)	212,595 (18.1)	0.42
	Admissions	40 (9.0)	300,215 (8.1)	0.49
Perinatal diseases	Babies	21 (22.3)	95,475 (8.1)	<0.001
	Admissions	27 (6.1)	119,005 (3.2)	0.001
Eye, adnexa, ear and mastoid process diseases	Babies	16 (17.0)	207,703 (17.6)	1.0
	Admissions	23 (5.2)	318,821 (8.6)	<0.01
Congenital malformations, deformations and chromosomal abnormalities	Babies	12 (12.8)	86,619 (7.4)	0.07
	Admissions	16 (3.6)	171,771 (4.6)	0.36
Genitourinary system diseases	Babies	11 (11.7)	88,089 (7.5)	0.12
	Admissions	13 (2.9)	130,637 (3.5)	0.61
Other	Babies	57 (60.6)	681,422 (57.9)	0.60
	Admissions	183 (41.1)	1,461,456 (39.3)	0.44

[a]Diagnostic codes missing for 65 babies in non-KRT

[b]Diagnostic codes missing for 5 babies (106 admissions) in transplant and 37,095 babies (824,944) admissions non-KRT

[-]P-values only reported if event rate ≥10

Abstract No. 59

KIDNEY TRANSPLANT WAITLIST OUTCOMES AFTER DECLINE OF FIRST DECEASED DONOR KIDNEY OFFER: A DATA LINKAGE STUDY 2006-2019

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Aims: Deceased donor kidney offers may be declined over concerns around quality, donor characteristics, and biovigilance. We aimed to describe patient outcomes after an offer is declined and investigate the impact of patient characteristics on the rate of decline and subsequent outcomes.

Methods: We used linked data from the NSW Biovigilance Register (SAFEBOD) for all people entering the kidney transplant waitlist in NSW, 2006−2019. Rates of decline of first offer and subsequent outcomes were examined. Time from decline to transplantation was estimated, by patient characteristics, using Kaplan-Meier curves.

Results: Of 2305 people waitlisted, 1760 (76.4%) received at least one offer, of which 1129 (64.1%) were declined. Rates of offer decline varied significantly by age (18-44 years, 70.0%; over 65, 58.5%,p=0.01), ethnicity (Asian, 79.3%; Australia and New Zealand, 79.3%, p<0.001), blood group (B, 84.2%; AB, 57.7%,p<0.001) and sensitisation (PRA<10, 61.3%; PRA≥85, 75.8%,p<0.001). Most patients (n=995, 88.1%) received at least one subsequent offer, and 755 (66.9%) subsequently received a deceased donor transplant (Figure 1). Median time from decline to transplantation was 6.0 months (IQR 2.0-14.9). There was no significant difference in KDPI between declined and subsequently accepted kidneys. Univariable analyses suggested differences in time from initial decline to transplantation by blood group, age, ethnicity and sensitisation.

Conclusions: Rates of declining deceased donor kidney offers varied significantly by age, ethnicity, blood group and sensitisation. There was no evidence of quality difference between declined and later accepted kidneys. Further investigation is needed to better understand the impact of declining a deceased donor kidney for different patient groups.

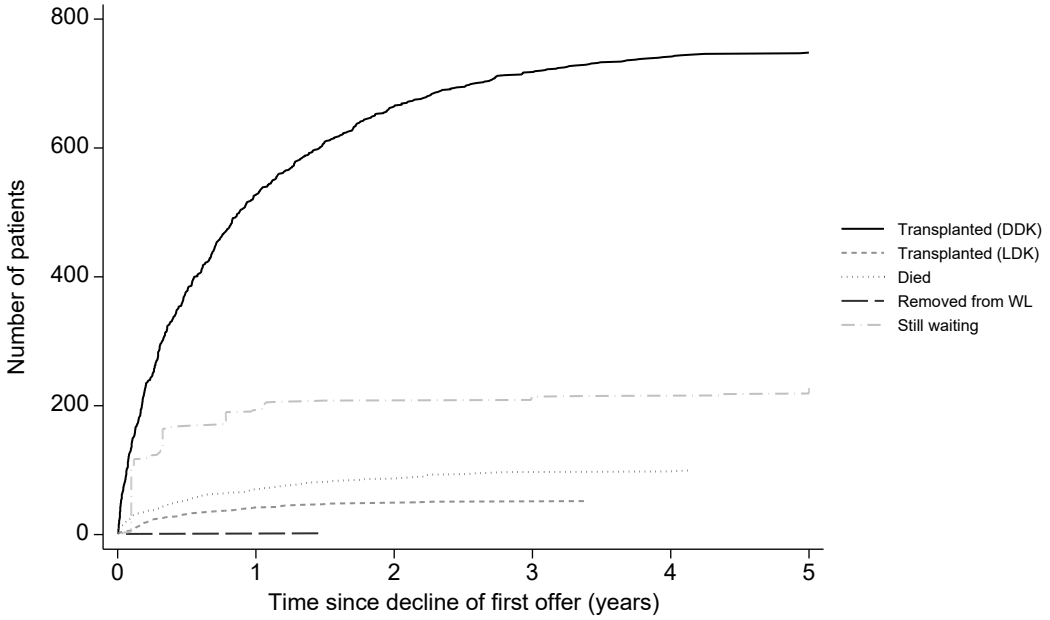

Figure 1. Cumulative frequency distribution of five year outcomes for people entering the kidney waitlist in NSW, 2006-2019, whose first deceased donor kidney offer was declined (n = 1129).

Abstract No. 60

COMMON CANCER TRANSMISSION ANDAMP; NON-TRANSMISSION IN DECEASED ORGAN DONORS ANDAMP; TRANSPLANT RECIPIENTS: NSW DATA-LINKAGE STUDY 2010-2018

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Aims: We aimed to estimate the transmission risk of common cancers (colorectal, breast and prostate) in deceased organ donation and identify missed opportunities for donation in an Australian cohort.

Methods: We analysed Organ and Tissue Donation Service referral data from actual deceased organ donors, transplant recipients, and potential donors forgone in NSW from 2010 to 2018, linked to the Central Cancer Registry (CCR) from 1972 to 2018. We categorised colorectal, breast, and prostate cancers using ICD-O-3 classification and stratified transmission risk according to the TSANZ Clinical Guidelines.

Results: Of 5,624 people referred for consideration for organ donation, 933 (17%) proceeded to donate. Of these, six (<1%) had a history of any common cancer registered in the CCR, including one high-risk breast cancer (>10%) and five prostate cancers with varying risk levels. There was no evidence of "Probable/Proven" transmission in the nine recipients from the donors with common cancer (Table 1). We identified 169 potential donors forgone who were suspected of a history of common cancer. Of these, six (4%) had no cancer registered in the CCR, and 39 (23%) had registered cancers classified as minimal-to-low (0.1%-<2%) risk. Including these donors would have increased the donor pool by 4.8% from 2010 to 2018.

Conclusions: We did not find any transmissions from donors with identified common cancers, indicating that organs from these donors are suitable for transplantation. Continuous review of transmission and non-transmission events in organ donation could ensure risk assessments remain up-to-date.

Table 2. Probable/Proven transmission from deceased organ donors with breast or prostate cancer

Risk category[a]	Cancer type	Total donors with history of common cancer	Donors with P/P transmission[b] ÷ Total donors with history of common cancer	Total recipients from donors at risk	Recipients with P/P transmission[b] ÷ Total recipients from donors at risk	
					Kid-ney	Total
Breast						
High (≥10%)	Cancer pathology, treatment history and/or receptor status unavailable	1	0/1	2	0/2	0/2
TOTAL		**1**	**0/1**	**2**	**0/2**	**0/2**
Prostate						
	Prostate cancer with Gleason score ≤6 (Grade group 1, AJCC Stage I) diagnosed at the time of retrieval or in the donor history	1	0/1	1	0/1	0/1
Minimal (<0.1%)	Past history of organ confined, margin negative, node negative prostate cancer with Gleason score 7 (Grade group 2/3, AJCC Stage II), with cancer-free survival >3 years	2	0/2	2	0/2	0/2
Low (0.1 - <2%)	Organ confined, node negative tumours with Gleason score 7 (Grade group 2/3, AJCC Stage II), in the donor history or diagnosed at the time of retrieval	1	0/1	2	0/2	0/2
High (≥10%)	Extra-prostatic tumour extension, absent of nodal involvement or distant metastases (AJCC Stage III) in the donor history or diagnosed at the time of retrieval	1	0/1	2	0/2	0/2
TOTAL		**5**	**0/5**	**7**	**0/7**	**0/7**

Footnote: (a) Donor cancer transmission risk were categorised based on the current TSANZ Clinical Guidelines, where donors had more than one cancer, the worst-case scenario was taken. (b) Donors and recipients were assessed for "probable/proven" (P/P) transmission using criteria adapted from SabTO, DTAC and the WHO NOTIFY project.

Abstract No. 61

SEROLOGICAL RESPONSES AND CLINICAL OUTCOMES TO 3-DOSE COVID-19 VACCINATION IN KIDNEY TRANSPLANT AND DIALYSIS RECIPIENTS.

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Background: Kidney transplant recipients (KTRs) and people receiving dialysis have a higher risk of severe COVID-19 disease and may be less protected post-vaccination due to blunted vaccine responses.

Aim: To assess serological responses and predictors of sero-response to a 3-dose SARS-CoV-2 vaccination schedule in KTRs and people on dialysis, and to determine the relationship between responses and breakthrough infection.

Methods: Plasma from 30 renal transplant recipients and 17 people receiving dialysis was tested for anti-Spike receptor binding domain (RBD) IgG and neutralizing antibodies (NAb) to the ancestral strain and Omicron BA.2 variant after dose 2 and 3 of vaccination.

Results: After three doses, KTRs achieved lower anti-RBD IgG levels and NAb titres than people receiving dialysis ($p<0.05$; Figure). Seropositive cross-reactive Omicron neutralization levels were achieved in 11/27 (40.7%) KTRs and 11/14 (78.6%) dialysis recipients, respectively. ChADOx-1 containing vaccine schedules, higher mycophenolate dose (>1gm/day), and lower absolute B-cell counts predicted poor serological responses in KTRs. More KTRs subsequently contracted SARS-CoV-2 infection (14/30; 47%) than dialysis recipients (5/17; 29%) and had more severe disease. Those with SARS-CoV-2 breakthrough infections had lower inter-dose incremental change in anti-RBD IgG levels (4.45 µg/ml (0.5 – 41.5) versus 41.2 µg/ml (11.1-87.8)) and ancestral NAb titres (IC50: 2.5 (-5.7 – 136.7) versus 133.5 (14-524.1)), $p<0.05$.

Conclusion: Serological responses to SARs-CoV-2 vaccination in KTRs lag behind their dialysis counterparts. KTRs remained at high-risk of breakthrough infection after their primary vaccination schedule underlining their need for booster doses, strict infection control practices and close surveillance.

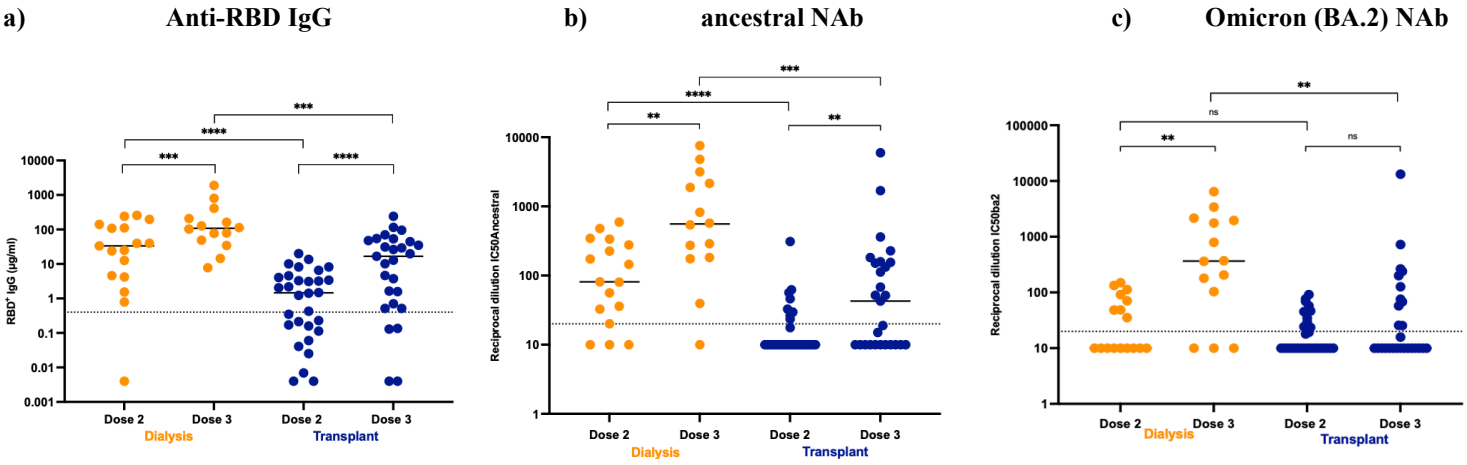

Figure. Transplant and dialysis a) Anti-RBD IgG levels b) Ancestral NAb c) Omicron (BA.2)) levels at dose 2 and 3. Positive cut-off thresholds for Anti-RBD IgG levels and reciprocal dilution IC50 NAb titres are >0.4µg/ml and >20 (reciprocal dilution IC50) respectively. ns ≥0.05, ✱ = p <0.05, ✱✱ p <0.01, ✱✱✱ p <0.001, ✱✱✱✱ p <0.000

Abstract No. 62

EXPOSURE TO ANAEROBIC ANTIBIOTICS AND RISK OF ALLOGRAFT REJECTION FOLLOWING LIVER TRANSPLANT

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Aims The gut microbiota has been associated with allograft rejection following liver transplant (LTx). Antibiotics (Abx) alter the gut microbiota and may represent an independent risk factor for rejection. We sought to explore the association between Abx exposure during the 30 days preceding and 365 days following LTx at a single tertiary health center in Melbourne, Australia between January 2015 – June 2022.

Methods We classified and grouped Abx as having an anaerobic spectrum of activity or not. Peri-LTx piperacillin-tazobactam and post-LTx prophylaxis with trimethoprim-sulfamethoxazole were excluded. Abx post-transplant were assessed as time-varying covariates. Rejection at 1 year was assessed using Cox proportional hazards models, unadjusted and adjusting for other confounders.

Results During the study period, 462 patients underwent LTx with 20.8% (96/462) experiencing rejection at 1 year. In univariate analyses there was no association between any pre-LTx Abx and incidence of rejection. In contrast, exposure to any anti-anaerobe Abx following LTx was associated with a significant increase in the incidence of rejection (SHR 2.25; 95% CI 1.40 to 3.62; p=0.001). After adjustment for potential confounders identified in univariate analyses (CMV-status, cold-ischemia time, MELD, CCI and liver disease), exposure to any anaerobe-targeting Abx remained significantly associated with increased risk of rejection at 1 year in multivariable analyses (SHR 2.34; 95% CI 1.41 to 3.86; p=0.001).

Conclusions Exposure to anaerobe-targeting Abx following transplant was an independent risk factor for rejection. This effect may be mediated by Abx-induced disruption of the gut microbiota and serves as a reminder of the value of antimicrobial stewardship programs in the peri-transplant setting.

Abstract No. 63

BK NEPROPATHY IN KIDNEY TRANSPLANTATION WHERE ALEMTUZUMAB IS USED AS AN INDUCTION AGENT -PREVALANCE MANAGEMENT GRAFTOUTCOME

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AIMS Following kidney transplantation, BK virus-associated nephropathy (BKVAN) occurs in 1 to 10% of kidney transplant recipients (KTR) and represents a major cause of graft loss[1]. There is limited data on BKVAN epidemiology after Alemtuzumab induction[2]. We conducted a retrospective study including all kidney transplant recipients with a biopsy-proven diagnosis of BKVAN between 2007 and 2022 in Hammersmith hospital, to determine the incidence and outcomes of BKVAN.

RESULTS Eighty-nine cases of BKVAN were identified among 2,831 kidney transplantations (3.1% prevalence). At the end of follow up, 40.5% of our patients with a diagnosis of BKVAN were noted to have graft failure. Survival without return to dialysis with stable graft function was seen in 59.5% of patients during follow-up. Steroid had a definite role in the treatment of BKVAN and was beneficial with graft survival (5/16, 32% p=0.03) especially in those patients whose histology showed interstitial inflammation changes of greater than 20 %. Patients with BKVAN on MMF at diagnosis had better allograft survival (42.3% vs 26.9% p=0.03), than patients on CNI alone. The raised viral load > 4 log 10/ml is associated with extensive histological lesions with interstitial inflammation changes more than 20% (p=0.01) and persistence of BK virus infection (p=0.03). The risk factors for graft loss were augmentation of immunosuppression for rejection episodes (n=18/28,64% p=0.01), persistent BK Viremia (63.3% vs 36.7% p=0.01), rejection post-BK nephropathy (64% vs 35% p=0.03), moderate to severe IFTA in repeat biopsy (74%vs 26%) and mean increase in creatinine from baseline (42.51 vs 27.33 umol/L, p=0.001).

CONCLUSION Our study demonstrates that augmented immunosuppression for rejection, higher viral loads, reduced renal function, increased IFTA, non-resolution of viraemia and rejection are the main factors of graft loss in patients with BKVAN. In addition, the use of steroids and IVIG in addition to immunosuppression reduction may have a protective role, particularly in those patients with prominent interstitial inflammation.

References:

1. Kant S, Dasgupta A, Bagnasco S, Brennan DC. BK Virus Nephropathy in Kidney Transplantation: A State-of-the-Art Review. Viruses. 2022 Jul 25;14(8):1616.

2. Korneffel K, Gehring B, Rospert D, Rees M, Ortiz J. BK Virus in Renal Transplant Patients Using Alemtuzumab for Induction Immunosuppression. Exp Clin Transplant. 2020 Oct;18(5):557-563. doi: 10.6002/ect.2019.0041. Epub 2019 Jul 19.

Table: Outcome of BK nephropathy

Factors affecting Graft function	Stable Graft n(%)	Graft failure n(%)	P value
Immunosupression at diagnosis			
Az + Tacrolimus	25 (48)	15(43)	
Az + MMF+Tacrolimus	17 (32)	18(45)	0.35
IL2 +MMF+ Tacrolimus	10 (19)	4 (10)	
Mean peak plasma viral load (SD)	93948.13 (172626.49)	121280.68 (233595.67)	0.8
HLA mismatch			
0-2	12	9	
3-4	33	23	0.8
5-6	8	4	
Augmentation of Immunosuppression			
Yes	10(36)	18(64)	
No	36(59)	25(41)	0.01
Increase in creatinine from baseline (umol/L)	14.5 (3.75-26.5)	32 (14.5-61)	0.001
Histology severity			
A	15 (32.6)	9 (20.9)	
B1	7 (15.2)	7 (16.3)	0.6
B2	13 (28.3)	13(30.2)	
B3	9 (19.6)	13(30.2)	
C	2 (4.3)	1 (2.3)	
Resolution of Virus			
Yes	41 (78)	18 (48)	0.003
No	11 (22)	19 (52)	
Addition of steroids			
Yes	5(31)	11(68)	
No	46(63)	26(37)	0.04
IFTA in repeat biopsy (n=63)			
Mild (0-25%)	18	7	0.04
Moderate to severe (25% and above)	7	20	
Post BK rejection (among repeat biopsy) n=64			
Yes (%)	7(36)	12(64)	0.03
No (%)	30(65)	16(36)	

Abstract No. 64

KIDNEY TRANSPLANTATION OF HEPATITIS C VIRAEMIC DONORS TO HEPATITIS C NEGATIVE RECIPIENTS: A SINGLE-CENTRE AUSTRALIAN EXPERIENCE

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Aim: The introduction of direct acting antivirals (DAA) targeting HCV has permitted transplantation of hepatitis C NAT positive (HCV+) kidneys into HCV negative (HCV-) recipients, and is a strategy that may help expand the deceased donor organ pool and shorten waitlist times. We present a single-centre case series of eight HCV- recipients who received kidney transplants from HCV viraemic deceased donors.

Methods: Most recipients were enrolled in the REPLACE study, an open-label pilot clinical trial aimed to examine the safety and feasibility of such donations in Australia. HCV- recipients receiving HCV+ kidneys were treated with 12 weeks of the DAA glecaprevir/pibrentasvir after confirmed transmission of HCV infection under a hepatologist's supervision. Patients were followed up at 4, 12, and 24 weeks post-treatment, with the primary endpoint being sustained virological response (SVR), defined as undetectable serum HCV RNA levels 12 weeks post-treatment. There were no significant drug-drug interactions during follow-up.

Results: Seven out of eight (88%) patients completed the follow-up, with one death occurring at 13 weeks post-transplant, secondary to an ischaemic cardiac event. All patients achieved SVR following DAA therapy with excellent graft function at 12 and 24 weeks post-treatment, with median serum creatinine of 140umol/L (IQR 83-155) and 151umol/L (IQR 90-151) respectively. Recipient outcomes are summarised in Table 1.

Conclusions: Our results demonstrate the early safety and efficacy of utilising HCV+ kidney transplants in HCV- recipients. Long-term follow-up is ongoing. It is important to educate clinicians and patients on the benefits of this strategy to help increase donation rates and improve patient outcomes.

Table 1. Characteristics and outcomes of HCV- recipients of HCV+ kidneys.

Patient	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Age (years)	63	60	41	49	58	55	33	68
Sex	Female	Male	Male	Male	Male	Male	Female	Male
Underlying kidney disease	Membranous nephropathy	Hypertension/ diabetic nephropathy	IgA nephropathy	Diabetic nephropathy	Diabetic nephropathy	IgA nephropathy	Diabetic nephropathy	Multiple myeloma
Blood group	A+	A+	A+	O+	O+	O+	O+	O+
Wait time on dialysis (years)	3	3	10	3	11	5.5	5	6.5
HCV genotype	3	3	6a/6b	1A	1A	3	3	N/A
Time to develop viraemia (days)	22	7	7	7	10	9	7	7
Viral load at initiation of DAA (IU/mL)	809	713	46,300	745,000	189,000	12,000,000	4,220,000	349,000
DGF	No	No	No	Yes	Yes	No	No	No
Acute rejection	No	No	No	No	Borderline	No	No	Borderline
Adverse event(s) related to DAA	No	No	No	No	No	No	No	No
DAA-drug interactions	No	No	No	No	No	No	No	No
Deceased	No	No	No	No	Yes	No	No	No
sCr at 12 weeks post-treatment (umol/L)	83	168	141	140	N/A	80	83	197
sCr at 24 weeks post-treatment (umol/L)	90	165	137	101	N/A	90	90	186
SVR	Yes	Yes	Yes	Yes	N/A	Yes	Yes	Yes

DAA, direct acting antivirals; DGF, delayed graft function; HCV, hepatitis C; sCr, serum creatinine; SVR, sustained virological response; N/A, not available.

Abstract No. 65

DELIVERY OF REGULATORY T-CELL THERAPY VIA EX-SITU MACHINE PERFUSION OF THE LIVER

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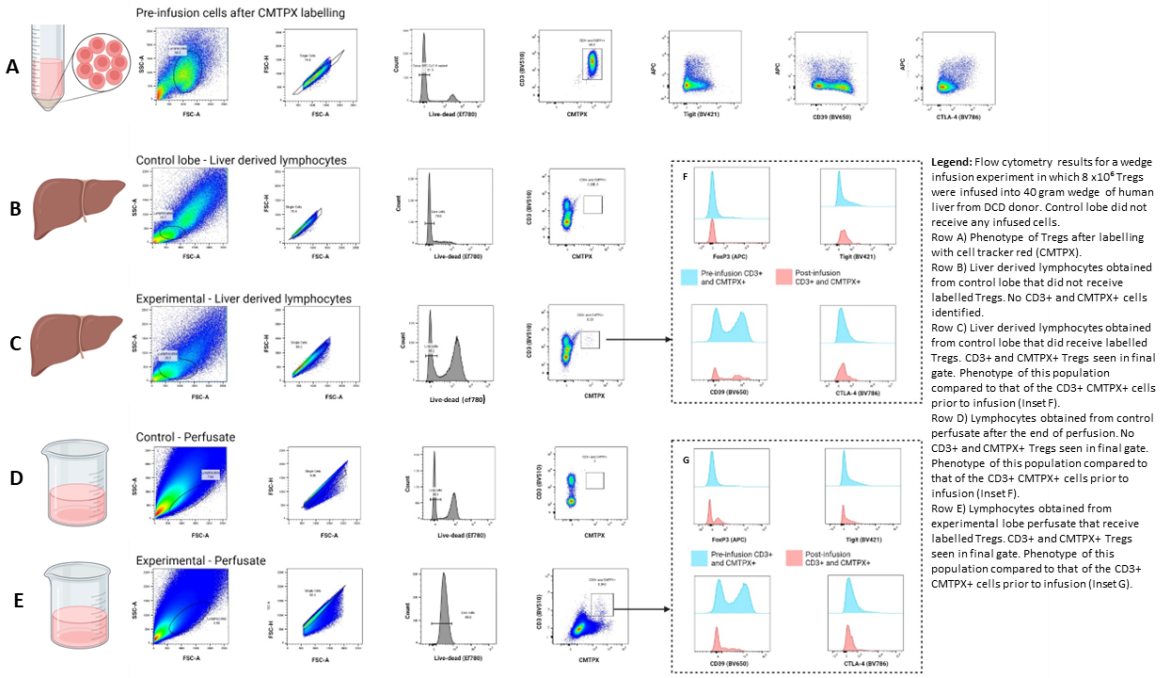
Introduction: Delivery of Tregs directly to the liver via ex-situ normothermic machine perfusion (NMP) avoids the need for cell signaling and migration within the circulation. Our aim was to determine if Tregs administered to the liver via ex-situ machine perfusion remain within the parenchyma, and maintain phenotype.

Methods: Human Tregs were isolated via flouresence-activated cell sorting and expanded. Two ex-situ machine perfusion models were utilized; a custom-built wedge perfusion model (WPM) that had an experimental and control lobe, and a whole liver perfusion model (Liver assist, XVIVO). Tregs were labelled with cell tracker red (CMTPX) prior to infusion and then administered via the machine perfusion circuit. CMTPX labelled Treg localization was assessed with confocal microscopy. After the perfusion, the perfusate was collected and the lymphocytes isolated. Mechanical dissociation of the liver tissue was performed and lymphocytes from within the tissue isolated. The suppressive phenotype (CD39, TIGIT, CTLA-4 expression) of the CMTPX labelled cells was assessed.

Results: Five WPM and two whole liver experiments were performed. Between 3-8x10^6 labelled Tregs were infused with the WPM and between 30-50x10^6 cells were infused into the whole liver model (Phenotype in figure A). Confocal microscopy identified the labelled Tregs within the parenchyma at the end of the wedge perfusion, and at 4 hours following infusion into the whole liver. The CMTPX positive Tregs obtained back the liver tissue and perfusate following infusion using the WPM (Figure B-E) demonstrated the expression of TIGIT and CTLA4 remained stable, however CD39 reduced.

Discussion: Tregs administered ex-situ appear to migrate from the vascular compartment and engraft into the organ, with minimal phenotypic change.



Legend: Flow cytometry results for a wedge infusion experiment in which 8 x10^6 Tregs were infused into 40 gram wedge of human liver from DCD donor. Control lobe did not receive any infused cells.
Row A) Phenotype of Tregs after labelling with cell tracker red (CMTPX).
Row B) Liver derived lymphocytes obtained from control lobe that did not receive labelled Tregs. No CD3+ and CMTPX+ cells identified.
Row C) Liver derived lymphocytes obtained from control lobe that did receive labelled Tregs. CD3+ and CMTPX+ Tregs seen in final gate. Phenotype of this population compared to that of the CD3+ CMTPX+ cells prior to infusion (Inset F).
Row D) Lymphocytes obtained from control perfusate after the end of perfusion. No CD3+ and CMTPX+ Tregs seen in final gate. Phenotype of this population compared to that of the CD3+ CMTPX+ cells prior to infusion (Inset F).
Row E) Lymphocytes obtained from experimental lobe perfusate that receive labelled Tregs. CD3+ and CMTPX+ Tregs seen in final gate. Phenotype of this population compared to that of the CD3+ CMTPX+ cells prior to infusion (Inset G).

Abstract No. 66

LIVER MACHINE PRESERVATION AT ROOM TEMPERATURE USING AN OXYGENATED, ACELLULAR PERFUSATE: A PILOT STUDY

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Introduction: Static Cold Storage (SCS) is the simple and cost-effective gold standard of liver preservation. Normothermic Machine Preservation (NMP) is emerging, but it is not widely used due to complexity and lack of long-term data. Oxygenated, acellular, machine perfusion at room temperature (IMP) is a novel method that aims to overcome the limitations of both its predecessors. The aim of this pilot study was to determine if IMP was feasible and non-inferior to SCS and NMP for deceased donor porcine livers.

Methods: Organs were retrieved from 12 pigs (mean weight 74.6kg) following ethics approval. Pigs were randomised into three preservation groups (n=4) and preserved for 5 hours. Metabolic activity was assessed by comparing arterial blood glucose (AGL) with hepatic venous glucose (VGL), and monitoring tissue ATP levels. Histology was scored by a blinded histopathologist, using a composite injury score derived from various hepatocellular characteristics.

Results and Discussion:

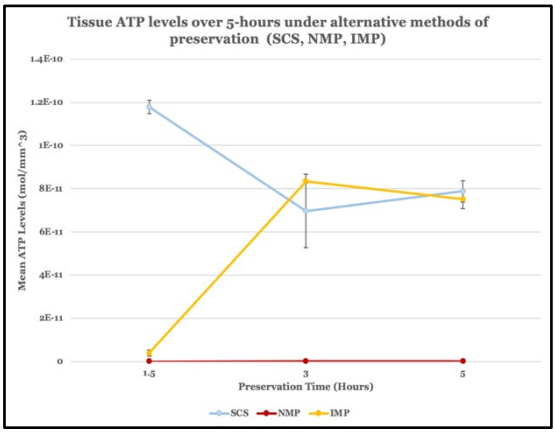

Figure 1:
Biopsies were taken at regular intervals and frozen for ATP analysis. The graph shows that mean SCS ATP levels decreased from hours 1.5 to 5 of preservation, whilst increasing in IMP. A two-way ANOVA analysis yielded a P-value of 0.966 ($p>0.05$), suggesting no statistically significant difference.

Mean Arterial Glucose (AGL) vs Mean Hepatic Venous Glucose (VGL) in IMP vs. NMP			
Hours (Preservation)	**Mean IMP AGL (mmol/L)**	**Mean IMP VG (mmol/L)**	**Difference (AGL - VGL)**
1.0	8.425	12.525	-4.1
5.0	22.15	22.05	0.1
Hours (Preservation)	**Mean NMP AGL (mmol/L)**	**Mean NMP VG (mmol/L)**	**Difference (AGL - VGL)**
1.0	17.65	34.95	-17.3
5.0	17.75	31.3	-13.55

Figure 2: The change from VGL exceeding AGL at 1-hour compared to AGL being higher than VGL at 5-hours suggests conversion from glycolytic to glycogenotic pathways in the liver.

In NMP, there was persistent anaerobic metabolism indicated by higher VGL throughout. No statistically significant difference was observed with $p=0.33$.

For the H&E histology, a score of 0-2 was considered mild damage, 3-5 moderate, and >6 severe. All three groups had a composite score between 0-2, suggesting mild damage at end-preservation. Once again, two-way ANOVA suggested no statistically significant difference between groups. These results indicate that IMP is indeed possible and appear non-inferior to SCS and NMP in liver preservation.

Abstract No. 67

PHYSIOLOGICAL ASSESSMENT OF SMALL BOWEL GRAFT VIABILITY UNDER DIFFERENT EX VIVO MACHINE PERFUSION (EVMP) CONDITIONS

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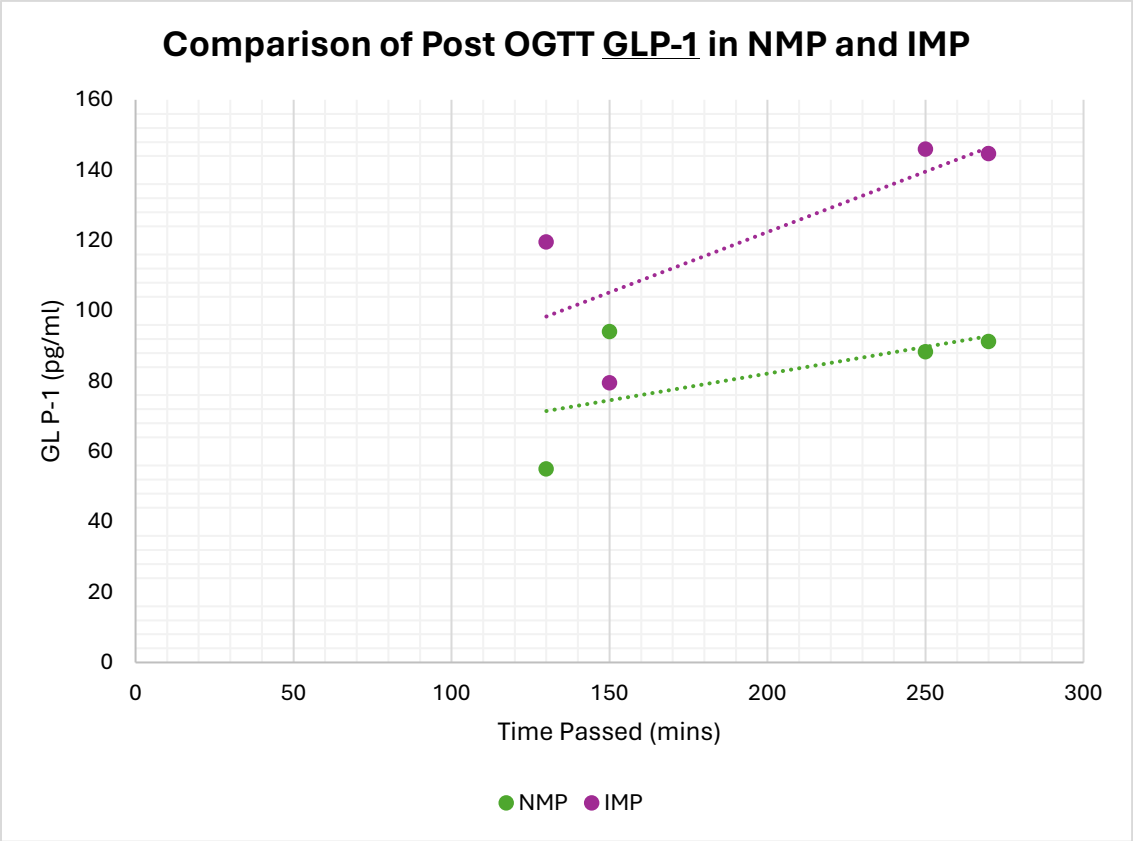
Aims: To assess integrity of the physiological inter-relationships in the gastro – hepatic – pancreatic and small bowel axis during EVMP by measuring entero-insular response to luminal glucose stimulation as a marker of viability.

Methods: Eight large white pigs were ethically procured before random assignment to either normothermic blood EVMP (n = 4) or isothermic acellular EVMP (n = 4) groups. Abdominal blocks consisting of both kidneys, liver, pancreas and proximal 100cm of small bowel were surgically retrieved before integration into the MP rig. Luminal glucose stimulation tests were performed at two and four hours out of the allocated five hour preservation period. Serial venous glucose, GLP-1 and insulin readings were taken following stimulation. After five hours of preservation, fluorescein dye was injected into the circuit.

Results: A temporal response to glucose stimulation demonstrated sustained entero-insular axis physiology throughout normothermic blood and isothermic acellular EVMP. Mean GLP-1 post infusion for isothermic acellular EVMP was 122.4 pg/ml compared to normothermic blood EVMP at 82.14 pg/ml. Fluorescein angiography provided qualitative information of the vascular integrity of mesenteric arcades.

Conclusions: Maintenance of physiology is the best assessment for small bowel viability and EVMP offers the ability to bench test function in real time. The modified luminal glucose stimulation test is a feasible en-bloc method to compare EVMP quality under different conditions with the goal of improving efficiency and cost effectiveness of the process.



Abstract No. 68

A BLUE PETER APPROACH TO MACHINE PERFUSION FOR ORGAN PRESERVATION

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Aims: This study aimed to investigate whether it was feasible and cost-effective to convert a dialysis machine into an ex-vivo normothermic machine preservation device.

Methods: Composite abdominal organ blocks were retrieved from 12 beating heart porcine donors. Autologous whole blood was collected. Following a cold ischaemic period of 30 minutes, organ blocks were cannulated and connected to a Baxter Prismaflex^{TM} Dialysis System and preserved for 5 hours. Oxygenated dialysate was pumped through the dialysate cartridge at 1500ml/hr and blood at 395ml/min. Serial blood gas samples were taken for assessment of blood oxygenation, oxygen consumption, carbon dioxide production and arterial pH maintenance. Plasma samples were taken for measurement of platelet-activating factor to assess reperfusion injury and hyperoxia.

Results: Oxygenation over the dialysis cartridge membrane achieved significantly higher PaO_2 as compared to room air oxygenation ($p<0.05$). Evidence of oxygen consumption and carbon dioxide production was observed, with a baseline approximately three times that of normal resting tissue oxygen consumption. The ability to control metabolic homeostasis was displayed through maintenance of arterial pH, and correction of venous pH abrogation. Quantitative platelet-activating factor measurement showed no statistically significant difference ($p>0.05$) as compared to the reference standard of static cold storage after 5 hours of preservation.

Conclusions: The successful conversion of a dialysis machine for organ preservation breaks down barriers to machine perfusion. A novel ability to dynamically control and correct homeostatic conditions was displayed. This opens the door to possibly improving the condition of organs ex vivo and to new therapeutic approaches.

Abstract No. 69

THE ROLE OF GASDERMIN D AND PYROPTOSIS IN ACUTE KIDNEY INJURY AND LONG-TERM KIDNEY DAMAGE AFTER TRANSPLANTATION

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Background: Gasdermin D (GSDMD) is a critical pore forming protein involved in pyroptosis, a highly inflammatory form of programmed cell death,. and may be involved in the pathogenesis of acute kidney injury (AKI) following ischemic reperfusion injury during kidney transplantation. This may potentially cause a rapid decline in renal function, fibrosis, and graft loss. Additionally, GSDMD-induced pore formation in the plasma membrane causes the release of pro-inflammatory cytokines, exacerbating tissue injury. GSDMD mutant mice derived by ENU mutagenesis at ANU have defective GSDMS function.

Aim: To investigate the role of pyroptosis in donor graft kidney injury using GSDMD mutant donor mice.

Methods: 8–12-week-old male GSDMD deficient mice (C57BL/6JANU-GSDMD ^{M1ANU}) or C57BL/6 control mice were used as kidney donors for C57BL/6 recipient mice. The donor graft kidneys either underwent cold storage after saline perfusion on ice for 4 hours to replicate the effects of ischemia-reperfusion injury (IRI)-induced AKI or were transplanted immmediately.

Results: GSDMD deficient donor kidneys had better outcomes with GSDMD+ WT donor kidneys having significantly greater cell infiltrate ($p<0.01$) renal tubular damage ($p<0.05$) and glomerular damage ($p<0.05$) with a trend to greater fibrosis in the WT donor kidneys.

Conclusion: Pyroptosis plays a role in acute donor kidney injury associated with cold ischaemia time. The therapeutic targeting of GSDMD in donor kidneys to prevent injury may potentially limit kidney injury and improve donor graft outcomes.

Abstract No. 70

T CELL RECEPTORS AND THE TRANSCRIPTOMIC PROFILE OF T CELLS IN TRANSPLANT TOLERANCE

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Background: We demonstrated that co-stimulatory blockade using CTLA4-Fc and MR-1 antibodies induced islet xenograft tolerance.

Aims: To assess T cell receptors (TCR) and the transcriptomic profile of T cells in transplant tolerance at a single cell level.

Methods: Foxp3^{GFP} mouse-recipients were transplanted with pig islets and received short-term CTLA4-Fc/MR1 to induce tolerance. After confirming islet-graft function by serum porcine C-peptide, at 100 days post-transplantation, samples of (1) spleen, (2) kidney-draining-lymph-node (DLN) and (3) grafts in tolerant-mice (n = 5); and (4) spleen and (5) DLN of control mice (without transplantation/treatment) (n = 5) were collected. One reaction/group of sorted CD3^{+} cells containing 5 bio-samples with Totalseq anti-mouse hashtag antibodies was performed by10xChromium ScRNA-seq 5' gene expression (5 reactions in total).

Results: 7621-16989 single cells/group passed QC filters and individual mouse cells within each group were identified. Transcriptomic profile showed 97%-99.7% of sorted cells were T cells containing naïve/resting and memory CD4+ and CD8+ T, NKT, Tregs, and γδ T cells. A high Treg proportion was confirmed in tolerant mice. Interestingly, a high proportion of NKT cells (15 TRBV families) was observed in tolerant grafts. 74%-91.1% of T cells expressed TCR alpha (TRA), 77.8%-91.1% of T cells expressed TCR beta (TRB), and 71.6%-75.9% expressed both TRA and TRB. While all 22 TRBV families were detected on Tregs of tolerant mice, a high proportion of Tregs that expressed TRBV29 was identified in both lymphoid organs and grafts of tolerant mice.

In conclusion: We established a method to evaluate TCRs and the transcriptomic profile of T cells in transplant tolerance at a single cell level and further analysis can be done for identification of antigen specific Tregs.

Tabel 1. The percentage of T cells expressed TCR alpha and beta chains in 5 sample groups.

	Sample/Reaction Group	% of T cells expressed TRA	% of T cells expressed TRB	% of T cells expressed TRB & TRB
1	Spleen - Tolerance	91.1	77.8	75.9
2	DLN -Tolerance	78	90	75.7
3	Graft -Tolerance	74.8	88.4	72.5
4	Spleen - Control	73.4	89.6	71.6
5	DLN - Control	79	91.3	76.6

Abstract No. 71

SUCCESSFUL OUTCOMES FROM KIDNEY TRANSPLANTATION AFTER SIMULTANEOUS LUNG-KIDNEY TRANSPLANTATION- A SINGLE CENTRE EXPERIENCE

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Introduction Increasing numbers of lung transplant candidates have poor renal reserve which limits accessibility to life saving transplantation. This study analysed the outcomes of simultaneous lung kidney transplantation at single centre.

Methods A retrospective single centre review of all patients ≥18 who underwent LTx between January 2010 and December 2023 at Alfred Health, Melbourne, Australia. We identified a total of 11 simultaneous lung-kidney transplantations (Table 1). All patients had been co-managed by the Lung Transplantation Service and Department of Renal Medicine at The Alfred Hospital. We recorded and analysed patient's demographics, donation type, complications and clinical outcomes including lung and renal allograft function and compared these to the lung transplant only group. The study was approved by The Alfred Hospital Ethics Committee.

Results A total of 11 patients underwent simultaneous deceased donor lung-kidney transplantation out of a total of 1043 lung transplantations. Median age was 46 years (38-59), with a slight female predominance (58%). Indications for combined lung-kidney transplantation are included in Table 1. Median survival was not different between the lung-kidney and the isolated lung transplant group [1239 (231-1987) vs. 1703 (729-2774) days (p=0.24)]. Maximum forced expiratory capacity achieved by 12 months was not significantly different between groups (p=0.15), (Table 2).

Conclusion Simultaneous lung kidney transplantation is a possible strategy for patients with combined end stage lung and kidney disease, which is associated with longer post operative intensive care stay but comparative and acceptable overall survival and lung function and 12 months.

Table 1: *Patient Characteristics and Clinical Information: Simultaneous Lung-Kidney Transplantation (LTx-KTx) compared to all Lung Transplants*

	Combined LTx-KTx (n=11)	**All Lung Transplants (n=1043)**	**P value**
Native Lung Disease			
- Cystic Fibrosis	3 (27.3%)		
- Non CF bronchiectasis	1 (9.1%)		
- Interstitial Lung Disease	2 (18.2%)		
- Lymphangioleiomyomatosis	1 (9.1%)		
- Graft versus host disease	1 (9.1%)		
- Chronic lung allograft dysfunction (CLAD)	3 (27.3%)		
Native Kidney Disease			
- Renovascular disease	3 (27.3%)		
- Angiolipomas	1 (9.1%)		
- Nodular sclerosing glomerulopathy	2 (18.2%)		
- CNI toxicity	2 (18.2%)		
- Diabetic nephropathy	1 (9.1%)		
- Post infectious GN/C3GN	1 (9.1%)		
- BMT engraftment syndrome	1 (9.1%)		
Age at transplant	46 (38-59)	58 (44-64)	0.41
Wait List Time (median, IQR)	84 (56-329)	86 (34-209)	0.63
Intensive Care Hours (median, IQR)	213 (188-761)	118 (73-210)	0.01
Hospital total length of stay from time of tx (median, IQR)	24 (21-33)	21 (16-33)	0.15
Survival (median, IQR)	1239 (231-1987)	1703 (729-2774)	0.24
FEV1 (% predicted) at 12 months*(mean, SD)	72.15 (19)	82.88 (23)	0.15

**Results available on 583 patients*

Abstract No. 72

DO THE ORGANMATCH NON-RENAL MATCHING ALGORITHMS IDENTIFY COMPATIBLE RECIPIENTS FOR TRANSPLANT?

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Aims In 2022 the Kidney/Pancreas, Lung and Heart matching algorithms were developed in conjunction with the transplant advisory committees for each of the organs. These algorithms were implemented in OrganMatch in September 2022, December 2022 and February 2023 respectively and were developed to produce an initial list of potential recipients for the transplant units to evaluate for selection for transplant. Implementation of the algorithms aimed to enhance the existing process for selection of recipients when crossmatched with deceased organ donors and facilitate a more efficient process for issuing VXM results.

A review of the deceased donors from 2023 was performed to identify the recipients that were excluded for matching by the algorithm but still received a transplant from the non-matched donor. This allowed assessment of the success of the non-renal algorithms to identify the recipient that was transplanted.

Method Australian Deceased donors in 2023 were reviewed and the recipients that received a Kidney/Pancreas, Heart or Lung transplant were identified. For these recipients, the matching algorithms were reviewed to determine if the algorithm included them. If they were excluded by the algorithm further investigation was undertaken as to the reason.

Note the Heart Algorithm was implemented in February 2023 so the data for heart recipients in January 2023 was excluded.

Results

Organ	Number of donors	Number of patients transplanted outside algorithm	Percentage of donor pool
Lung	396	22	6%
Heart	217	22	10%
Kidney/Pancreas	149	2	1%

	Reasons for Exclusion								
	Outside PHMR*	Outside AHR**	SAG expired	UA	Patient on hold	Patient not ready	Patient too young for PHM calculation	Urgent Patient	Patient blood group
Heart	5	N/A	7	1	3	2	2	2	0
Lung	N/A	13	4	1	0	4	0	0	0
Kidney/Pancreas	N/A	N/A	0	0	0	1	0	0	1

*Predicted Heart Mass Ratio

**Acceptable Height Range

Conclusion The non renal matching algorithms have been successful in identifying the compatible transplanted recipient 94% of the time (716 out of 762 cases) in 2023.

The matching algorithms are working as expected. There still needs to be flexibility for the transplant units to select recipients outside the algorithm due to exceptional circumstances which would account for the 6% of cases.

Abstract No. 73

MICROBIAL DIVERSITY. ANTIBIOTIC PROPHYLAXIS AND THEIR INFLUENCE ON TIME TO EXTUBATION IN LUNG TRANSPLANT RECIPIENTS

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Aims To identify microbial diversity of donor lungs via donor bronchial swabs (DBS) and recipient posttransplant bronchial washings (BWs). Assess whether Lung Transplant Recipients (LTR) received appropriate antibiotic prophylaxis based on swabs and washings, and explore correlation between culture positivity, initial antibiotics and ICU stay.

Methods A Retrospective analysis of 83 consecutive LTR at Auckland City Hospital documented baseline demographics, initial antimicrobial choice & positive microbiology results with primary outcomes being time to extubation and ICU length of stay (LOS).

Results 66% of DBS were culture positive, with a trend seen in longer extubation times compared to negative culture donors. Methicillin-susceptible *Staphylococcus aureus* accounted for 46% of DBS whilst Gram Negative Organisms (GNOs) were recorded in 19%. The most chosen antibiotic was Cefazolin, and antibiotic prophylaxis was deemed appropriate in 83% based on DBS. Post-transplant BWs were performed in 51% of LTR at a mean of three days post-transplant; GNOs were identified on 40% of samples. This group exhibited a trend towards longer extubation times (168 vs 96 hours p=0.265) and significantly longer LOS compared to LTR without GNOs (24 vs 9 days p=0.022) [Figure 1]. Of the positive BWs, 32% exhibited insufficient coverage with initial antibiotic prophylaxis, resulting in significantly longer ICU LOS (33 vs 11 days, p=0.026).

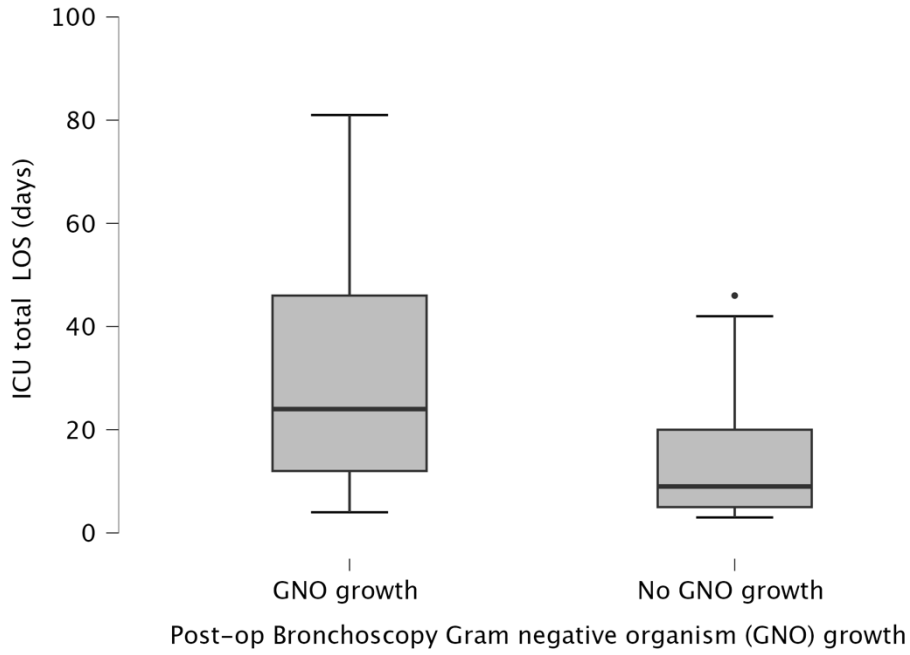

Figure 1

Conclusions

Initial antibiotic choice remained appropriate based on DBS. GNO growth trended towards longer extubation times and significantly longer LOS. Colonisation and infection with new nosocomial GNOs occurred early in the post-transplant period. Prompt bronchial washings could help guide appropriate antimicrobial therapy, thereby reducing time to extubation and ICU LOS.

Abstract No. 74

EVALUATING THE ACCURACY OF ANZDATA RECORDED CAUSE OF DEATH AMONGST TRANSPLANT RECIPIENTS

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Aim: To determine the accuracy of cause of death (COD) recorded by ANZDATA, by assessing concordance with blinded clinicians.

Methods: Kidney transplant recipients (KTR) transplanted and managed by Sydney Local Health District clinicians until their death were studied. Pre-death medical data was extracted from clinical records and provided to a consultant panel. Primary and secondary causes of death were determined by 3 nephrologists and 2 cardiologist independently. Cohens Kappa statistic was calculated to assess concordance with the cause of death recorded on ANZDATA.

Results: Between 2010 – 2020, 121 patients met inclusion criteria. Mean age at death was 63 years, 60.5% were male, and 77.6% were deceased donor recipients. 76 (63%) had clinical information relating to their death available. Agreement for the primary cause of death was moderate (52%, kappa 0.466) and was highest for cancer (88.2%). The greatest discrepancy related to 'withdrawal' or 'CKD' which accounted for 13.2% of deaths in ANZDATA and 5.3% of deaths on panel assessment. Cardiovascular, cancer and infection each comprised 30% of clinician-adjudicated primary causes of death, compared to 35%, 23% and 16% respectively on ANZDATA over a similar time frame. The most common secondary cause of death was infection, which was a contributing factor in 47.8% of cardiovascular and 60.8% of cancer deaths.

Conclusion: Death in a KTR is often complex with multiple contributing causes. Given only moderate agreement between ANZDATA recorded and clinician-adjudicated primary COD, recording contributing causes of death may improve the accuracy and quality of data in the ANZDATA registry.

Abstract No. 75

LUNG TRANSPLANTATION FOR SHORT-TELOMERE INTERSTITIAL LUNG DISEASE: OUTCOMES FROM AUSTRALIA

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Introduction Lung transplantation outcomes in patients with short-telomere interstitial lung disease (ILD) are presently conflicting. We sought to characterize the demographics and outcomes of an Australian cohort of short-telomere patients undergoing lung transplantation for ILD.

Methods We performed a single-centre retrospective cohort study. We included all lung transplant recipients at the Queensland Lung Transplant Service, Australia, whom had had their peripheral blood telomere length measured via Flow-FISH and had undergone transplantation for ILD.

Results A total of 52 lung transplant recipients were included, with 31 patients (59.6%) demonstrated to have a short telomere length (defined as peripheral blood telomere length equivocal to or below the 10th centile). Short-telomere recipients were demographically similar to normal-telomere recipients, with no significant difference in age at time of transplant, gender, or underlying pre-transplant ILD diagnosis. Short telomere length was not found to be associated with shorter time to any cytopenia, shorter time to clinically significant neutropenia (defined as neutrophil count <1.00 and/or requiring granulocyte colony stimulating factor), or cytomegalovirus viremia. Additionally, telomere length was not associated with either duration of cytopenia or duration of significant neutropenia post-transplant. No significant difference in time to chronic lung allograft dysfunction (CLAD) or death was found in short-telomere recipients compared to recipients with normal telomere length. **Conclusion** In our single-centre Australian cohort, within the limits of sample size, short-telomere patients undergoing lung transplantation for ILD had similar outcomes to those with normal telomere length, with similar rates and severity of post-transplant bone marrow suppression and overall CLAD-free survival.

Abstract No. 76

HOW BIG IS OUR BLIND SPOT? ESTIMATING THE BURDEN OF ORGAN FAILURE UNMET BY TRANSPLANTATION IN THE USA

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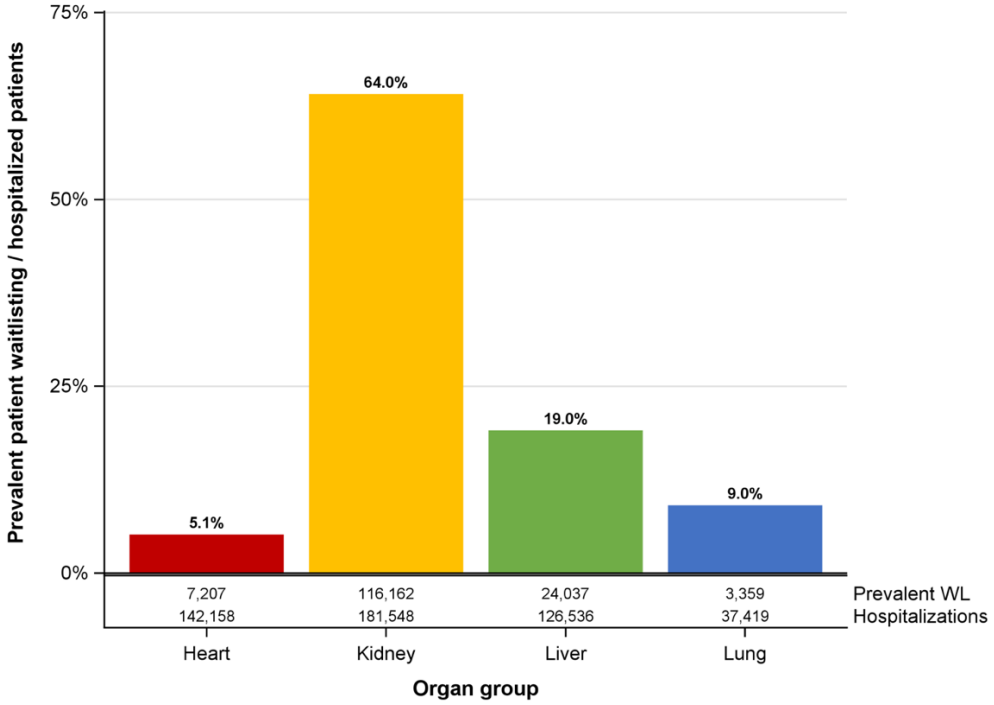
Aim Solid organ transplantation is highly valued by patients and society. Questions have been raised whether the current transplant system is fit to serve the needs of organ failure patients. We sought to identify the number of patients who may be eligible for solid organ transplantation and compare this to the transplant waiting list.

Methods Patients registered in the National Readmissions Database (NRD) and Scientific Registry of Transplant Recipients (SRTR) between 2016-2019 were included. Patients potentially eligible for solid organ transplantation were identified in the NRD by hospital discharge coding identifying organ failure and absence of transplant contraindications. We compared the number of potentially eligible patients with patients waitlisted for transplantation.

Results The estimated population size of eligible solid organ transplant patients in the United States was a yearly average of 142,158 heart, 37,419 lung, 126,536 liver and 181,548 kidney failure patients, figure 1. The organ transplant waiting list represented 5% of heart, 9% of lung, 19% of liver and 64% of kidney failure patients. Younger patients, men, privately insured patients, and metropolitan patients were more likely to appear on the waiting list.

Conclusion The burden of organ failure is not captured by the solid organ transplant waiting list and should not be used to estimate demand for transplantation. Moves to accurately identify and track patients with organ failure before they enter the organ transplant waiting list are required. This will support improved understanding of the patient experience, monitor system performance, and ensure appropriate allocation of system & research funding.

Figure 1 – Prevalent patients waitlisted for solid organ transplantation as a proportion of estimated organ failure population size between 2016-2019, by organ group.



Abstract No. 77

ANTI-INTERLEUKIN-6 ANTIBODY TREATMENT IS PROTECTIVE IN A MOUSE MODEL OF KIDNEY ISCHEMIA-REPERFUSION INJURY

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Background. Ischemia-reperfusion injury (IRI) is a common cause of acute kidney injury (AKI) in a variety of settings, including kidney transplantation. There are currently no effective clinical therapies for IRI. Inflammation and tubular cell apoptosis are important in the pathophysiology of IR-induced renal dysfunction and progressive chronic kidney disease. Interleukin (IL)-6 is a pleiotropic cytokine that regulates immune responses, and IL-6 blockade is under investigation as a treatment for chronic antibody-mediated rejection. However, IL-6 blockade has produced mixed results in attenuating renal IRI/AKI.

Aim: To test ALD518, an anti-IL-6 monoclonal antibody, in a mouse model of warm renal IRI.

Methods: Male 10-12 week old C57BL/6 mice underwent right nephrectomy followed by clamping of the left renal pedicle for 22 min (IRI), or nephrectomy only (Sham). Mice (n=8/group) were treated with 40 mg/kg ALD518 or isotype-matched control, either i.p. 30 min pre-ischemia or i.v. immediately post-ischemia. Mice were sacrificed 24 hrs after reperfusion, and blood and kidney samples were collected to assess renal function (serum creatinine, urea), complement activation (plasma C5a) and deposition (C9), and cellular infiltration.

Results: IR caused significant kidney injury and inflammation indicated by increased serum creatinine, urea, complement activation/deposition, and cell infiltration, as compared to sham control. Treatment with ALD518 preserved kidney function and reduced complement activation and cellular infiltration.

Conclusion: ALD518 significantly protected against kidney IRI when given before or after IR, indicating that IL-6 blockade is a promising approach to attenuate IRI in kidney transplantation.

		30 min pre-ischemia		Immediately post-ischemia	
	Sham	IRI / Isotype control	IRI / ALD518	IRI / Isotype control	IRI / ALD518
Serum Creatinine (μM)	<18.0	268.3 ± 23.3 ††††	163.5 ± 61.2 *	203.1 ± 45.51 ††††	74.4 ± 43.4 *
Urea (mg/dL)	54 ± 2	560.2 ± 43.6 ††††	453 ± 127.8	520.3 ± 44.2 ††††	342.3 ± 65.7 *
Plasma C5a (ng/mL)	1.0 ± 0.3	27.9 ± 3.9 ††††	18.7 ± 4.2 *	30.1 ± 4.6 ††††	20.3 ± 4.5 *
C9 deposition (RawIntDen)	$2.7 \pm 0.2 \times 10^6$	$5.9 \pm 0.8 \times 10^7$ ††††	$4.4 \pm 1.1 \times 10^7$	$6.4 \pm 1.2 \times 10^7$ ††††	$5.0 \pm 1.2 \times 10^7$ *
Neutrophils (counts/HPF)	0 ± 1	55 ± 9 ††††	35 ± 9 *	54 ± 10 ††††	33 ± 8 *
Macrophages (counts/HPF)	0 ± 1	54 ± 10 ††††	37 ± 10 *	53 ± 11 ††††	32 ± 9 *

††††$p<0.0001$ versus Sham; *$p<0.05$ versus isotype control.

Abstract No. 78

WHOLE BLOOD VERSUS PLASMA TACROLIMUS TROUGH CONCENTRATIONS DURING PREGNANCY AND THEIR IMPACT ON OUTCOMES

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Aims: Whole blood trough concentrations (WBC_0) of tacrolimus (Tac) are unreliable in pregnant women due to physiological changes in unbound Tac and may underestimate exposure, leading to overdosing. We aimed to determine if plasma trough Tac concentrations (PC_0) may be a better measure in pregnant kidney transplant recipients.

Methods: We developed and utilised a new assay to measure Tac PC_0 and compared it with WBC_0, and their impact on maternal and neonatal outcomes.

Results: Of 9 participants (6 kidney transplants, 3 lupus nephritis), 6 experienced pregnancy-related hypertensive disorders. Six babies (75%) were born preterm (<37 weeks gestation) and five (83%) had low birthweights (<2500g). Median (range) WBC_0 (n=97) and PC_0 (n=88) were 5400 (1600-23100) and 880 (275-4270) ng/L, respectively. WBC_0 and PC_0 had a positive association (R^2=0.51; p<0.001), with PC_0 approximately 15% of WBC_0. The PC_0/WBC_0 ratio correlated with albumin (p<0.05) and trimester (p<0.01). It was higher during pregnancy, consistent with a trend for higher or unchanged PC_0 (p=0.07) and lower WBC_0 during pregnancy (Fig 1). Higher maternal serum creatinine was associated with dose (p<0.05) and trimester (p<0.001). Mean infant birthweight decreased by 60 g (95% CI: 90-30; p<0.0001, adjusted p<0.001) or 223g (95% CI: 442-23g; p=0.03, adjusted p>0.05) for every 100 ng/L increase in WBC_0 or PC_0, respectively. WBC_0 was also associated with gestational age (p=0.03, adjusted p>0.05). There was no association between other maternal outcomes and WBC_0 or PC_0.

Conclusions: PC_0 may be an alternative measure in pregnant kidney transplant recipients.

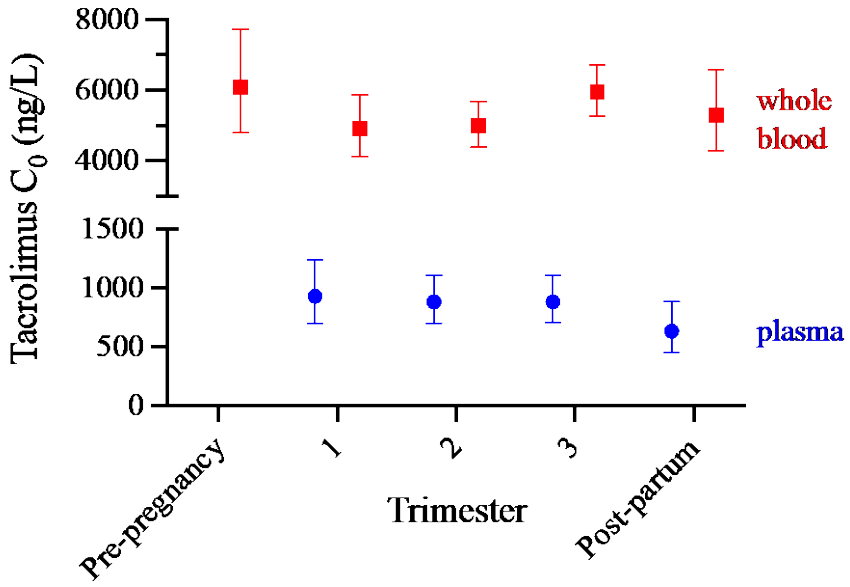

Fig 1. Changes in whole blood versus plasma tacrolimus concentrations from pre-pregnancy to post-partum.

Abstract No. 80

SHORT-TERM MACHINE PRESERVATION AT ROOM TEMPERATURE IS NOT INFERIOR TO STATIC COLD STORAGE FOR DECEASED DONOR KIDNEYS

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Aims: This study aimed to establish whether short-term machine preservation with acellular oxygenated perfusate at room temperature (IMP) is inferior to SCS for deceased donor kidneys in a large animal model.
Methods: Following local ethics approval, organs were retrieved from 8 adult female Landrace pigs (mean 74.6kg) using a novel en-bloc technique. 8 kidneys were preserved with SCS and 8 with IMP for 5 hours as part of a multi-visceral block. Core biopsies were taken at 90-minute intervals, snap-frozen and stored at -80°C. ATP from core biopsies was extracted using a validated boiling water extraction method2 and measured using a luciferase bioluminescent assay (FLAA, Sigma-Aldrich) with a TD-20/20 luminometer (Turner Designs). A two-way ANOVA test was conducted with significance set at $p<0.05$. Blinded histological analysis by an expert histopathologist was performed on biopsies using a novel scoring system for evidence of preservation-related ultrastructural damage.
Results: Baseline ATP levels were $3.21x10^{-10}$ mol in the SCS group, compared to $1.58x10^{-10}$ mol for IMP. During preservation, the ATP concentration rose in the IMP group to $2.49x10^{-10}$ mol. The ATP levels in SCS remained relatively stable during preservation reaching $3.96x10^{-10}$ mol after 5 hours. A two-way ANOVA test of ATP levels after preservation was conducted, yielding a P-value of 0.37, indicating no significant statistical difference, thus implying non-inferiority. Histopathological scores were identical between groups.
Conclusions: IMP is non-inferior in preserving cellular ATP levels compared with SCS. More work is required to demonstrate if these findings correlate to improved organ function following transplant.

Abstract No. 81

5-YEAR GRAFT SURVIVAL AND INCIDENCE OF CMV AND BK VIREMIA IN KIDNEY TRANSPLANTATION IN CENTRAL AUSTRALIA

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Aim To explore the relationship between induction agents, cytomegalovirus (CMV) and polyomavirus (BK) viremia rates and its effect on graft survival in renal transplant recipients from 1980 to 2021. To examine if First Nations Australian status was a risk factor for CMV or BK viremia post-renal transplant in Central Australia, which has a large population of high-risk transplant patients.
Background First Nations Australians experience elevated infection and graft failure rates post-renal transplant. Research gaps exist, especially concerning Anti-thymocyte Globulin (ATG) as an induction agent and its impact on CMV/BK viremia rates and graft survival in remote Australia.
Method This single-centre retrospective cohort study included 101 renal transplant patients categorised into pre-2015 and post-2015 groups based on the induction agent used.
Results CMV viremia significantly increased post-2015, with ethnicity as an independent risk factor for CMV viremia in First Nations Australians. While BK viremia was higher post-2015 and among First Nations Australians, statistical significance was not observed. Multivariate analysis showed no independent association of CMV/BK viremia with increased graft loss. However, 5-year graft survival significantly improved post-2015, supporting continued ATG use in high-risk and First Nations Australian populations.
Conclusion Although higher CMV and BK viremia rates were observed post-2015, only CMV infections were significant. First Nations Australian status was a CMV viremia risk factor, but both CMV and BK viremia did not significantly impact 5-year graft survival. Increased 5-year graft survival post-2015 supports ongoing ATG use in high-risk populations, underscoring the need for further research into post-renal transplantation viremia screening and treatment.

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Abstract No. 82

ACTIVATION OF HUMAN CD4+CD25+CD127LO TREG WITH ALLOANTIGEN AND RIL-2 INDUCES IFNGR

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Aims In rats, $CD4^+CD25^+$Treg activated with rIL-2/alloantigen (alloAg), express more Foxp3 and CD25 in addition to IFN-g (IFNGR) and IL-12 (IL-12Rb2) receptors, making them more potent suppressors of specific-alloactivation. Here we examined activation of human alloAg-specific $CD4^+CD25^+CD127^{lo}Foxp3^+$Treg.

Methods $CD4^+CD127^{lo}CD25^+$Treg isolated by FACS from healthy volunteers' blood were cultured for 4 days with rIL-2 and irradiated alloAg. Cells were examined using flow cytometry for shifts in Treg subpopulations; resting Pop I ($Foxp3^+CD25^+CD45RA^+$), activated Pop II ($Foxp3^{hi}CD25^{hi}CD45RA^-$), Treg and activated effector T cell Pop III ($Foxp3^+CD25^+CD45RA^-$) and chemokine receptors; CXCR3 (Th1), CCR6 (Th17), CCR4 (Th2). Cells were stained for *foxp3* and *ifngr* using RNAscope.

Results tTreg cultured alone had less Pop II than fresh tTreg (1.3% vs 8.6%). Culture with alloAg preserved Pop II (12% vs 8.6%). IL-2 increased Pop II (5/8 experiments), similar to alloAg/rIL-2 (6/8 experiments). Pop II in unfractionated Treg cultured with IL-2 or alloAg or alloAg/IL-2, showed similar CXCR3 expression. RNAscope showed Treg cultured alone or with IL-2 had less $foxp3^+$ cells than fresh Treg but remained $ifngr^-$. Treg with alloAg had single $foxp3^+$ and $ifngr^+$ cells, while Treg with alloAg/rIL-2 also had $foxp3^+ifngr^+$ cells. Enriched Pop I cells cultured alone lost Foxp3 expression. Culture with alloAg/rIL-2 produced $Foxp3^{hi}CD25^+CD45RA^+$ cells that remain $CXCR3^-CCR6^-$. Pop II cells cultured alone died, but with rIL-2 or with alloAg, Foxp3, CD25 and CCR6 expression increased, while maintaining CCR4 and CXCR3 expression. Pop III had some cells expressing less Foxp3 while others increased Foxp3 and CD25 expression, shifting to Pop II.

Conclusion Human tTreg stimulated with alloAg and rIL-2 induced IFNGR.

Abstract No. 83

GANCICLOVIR-RESISTANT CYTOMEGALOVIRUS DISEASE: THE TROLL OF TRANSPLANTATION

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Introduction: Infection of transplant recipients with ganciclovir-resistant cytomegalovirus (GCV-R CMV) results in longer, more costly recovery. GCV-R CMV is under-recognised in kidney transplant recipients (KTRs) and novel antiviral treatments are now available. We report three cases of GCV-R CMV disease post-kidney transplant at a tertiary hospital in regional NSW.

Methods: Two female patients aged 30 and 36 years had symptomatic CMV disease (diarrhoea and hepatitis) at 21- and 9-months post-transplant respectively. A 69-year-old female had disseminated CMV disease with CMV colitis at 12-months post-transplant complicated by Guillain-Barre syndrome. All cases were at-risk with donor-positive/recipient-negative CMV serostatus and received standard valganciclovir prophylaxis (doses adjusted using Cockcroft-Gault formula) for 200 days following induction therapy. Patient weights varied considerably (35kg, 68kg, and 106kg). GCV-R CMV was detected within 6 months of initially ganciclovir-responsive CMV disease in two cases, including detection at 4 months following ATG therapy for T cell mediated rejection in the remaining case. All three experienced post-transplant neutropaenia. Following GCV-R CMV detection, patients were treated with reduced immunosuppression and CMV-specific immunoglobulin. Maribavir was used in two cases, resulting in complete viral load suppression. Maribavir was administered as a bridge to adoptive T cell therapy in 69-year-old female with history of life-threatening CMV disease. All cases are planned for secondary CMV prophylaxis with functioning grafts.

Conclusions: These cases highlight: efficacy of maribavir to treat GCV-R CMV in KTRs; importance of its early recognition; need for strategies for its prevention; and the challenges in (val)ganciclovir dosing for CMV prophylaxis/treatment at extremes of weight while evidence for ganciclovir therapeutic drug monitoring remains limited.

Abstract No. 84

BOOSTING THE LONGEVITY AND STEMNESS OF SARS-COV-2 MEMORY T CELL WITH MTOR INHIBITOR (MTORI) IN TRANSPLANT RECIPIENTS

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Background: Vaccine induced stem-like memory T cells ($T_{scm)}$ provide long-lasting immunity from smallpox and yellow-fever vaccination. Due to chronic immunosuppression, kidney transplant recipients (KTRs) exhibit suboptimal responses to SARS-CoV-2 vaccines; the impact of immunosuppressive medication onT_{scm} generation remains unclear.

Method: A comprehensive analysis of the humoral (anti-spike, receptor binding domain, live-virus neutralization) and cellular (spike-specific T cell frequency, phenotype, function) responses were assessed in KTR based on immunosuppression profile which comprised patients receiving calcineurin (**CNI**; tacrolimus, mycophenolate, prednisolone, n=42) and mTOR inhibitor-based regimens (**mTORi**; rapamycin/everolimus, mycophenolate, prednisolone, n=18). An additional animal study was conducted to investigate the effects of mTORi on T_{scm} formation.

Result: The median of anti-spike IgG titre in KTRs in the mTORi group was 24-fold higher than the CNI group (AUC 0.2848 vs 6.766; $p < 0.05$). Spike-T cell response was predominantly induced in KTRs on mTORi, 12-fold greater than that of patients with CNI treatment (SFU 520 vs 43/10^6 cells). In animal study, rapamycin treatment significantly heightened spike memory T cell pool and associated with increased T_{scm} (CD44+CD62L+SCA-1+) following BNT162b2 vaccination.

Conclusion: We suggest that mTOR inhibition preferentially enhances T cell immunity and promotes T_{scm} generation which may provide durable protection against COVID-19 disease.

Abstract No. 85

A MULTICENTRE RANDOMISED TRIAL OF DIETARY INULIN TO IMPROVE SARS-COV-2 VACCINE RESPONSE IN KIDNEY TRANSPLANT RECIPIENTS

SINGER J[1], TUNBRIDGE M[2], PERKINS G[3], SALEHI T[2], GRUBOR-BAUK B[3], SIM B[2], CHAI CS[3], YING T[1], COATES PT[2], CHADBAN SJ[1]

[1]Department of Renal Medicine, Royal Prince Alfred Hospital, Sydney, [2]Central Northern Adelaide Renal and Transplantation Service, Royal Adelaide Hospital, [3]Adelaide Medical School, Faculty of Health and Medical Sciences University of Adelaide

Aim: Kidney transplant recipients (KTR) are at an increased risk of hospitalisation and death from SARS-CoV-2 infection, and standard 2-dose vaccination schedules are typically inadequate to generate protective immunity. The gut microbiota has been shown to modulate vaccine responses with short-chain fatty acid (SCFA) producing species and dietary-fibre intake associated with heightened vaccine immunogenicity. With dysbiosis common in KTR, augmentation of microbiota-derived SCFAs through pre-biotic fibre supplementation is an attractive adjuvant strategy to improve vaccine-induced immunity.

Methods: We conducted a multicentre, double-blinded, placebo-controlled trial. 72 KTRs with an inadequate response (anti-RBD <100U/mL) to a standard 2 dose COVID-19 mRNA vaccine schedule were randomized to dietary inulin (20g/day) or placebo. The intervention commenced 4-weeks before the 3rd mRNA COVID vaccine dose and continued for a further 4-weeks after. Vaccine specific humoral and T-cell responses, and 16s-rRNA sequencing of the faecal metagenome were conducted 4-weeks post-3rd vaccine dose.

Results: Participants were male (51/72, 71%), age 58 ± 11 years (mean/SD), 7.9 [2.5 – 13.9] years post-transplant (median/range), with eGFR 56.1 ± 25.9 ml/min (mean/SD), with no significant differences between groups. Prebiotic inulin was feasible, tolerable, and safe, but did not significantly boost vaccine specific immune responses (Fig 1A). Inulin supplementation resulted in a significant increase in SCFA-producing bacteria (2.3-fold increase in *Bifidobacterium spp.,* Fig 1B, p<0.02) and predicted metabolic pathways.

Conclusion: Pre-biotic fibre supplementation is a feasible and effective strategy to enhance the gut microbiota in KTRs and warrants further investigations as an adjuvant to enhance vaccine-induced immunity.

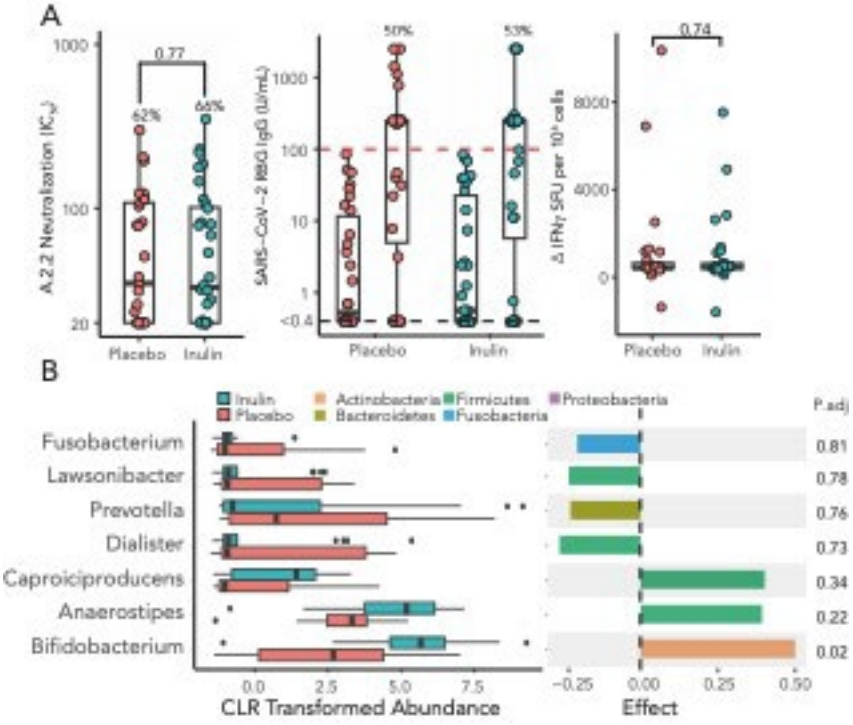

Figure 1

Abstract No. 86

HISTOLOGICAL COMPARISON OF PANCREAS PRESERVED BY MACHINE PERFUSION AND STATIC COLD STORAGE

DANIEL D[1], BHATTACHARJYA R[1], BASTIAN J[1], KANHERE A[1], BARNETT D[1], RUSZKIEWICZ A[2], BHATTACHARJYA S[1]

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Aims: This study aimed to investigate whether machine-preserved DBD pancreata had significant changes in histology as compared to the gold standard of static cold storage.

Methods: 12 porcine pancreata were retrieved, equally separated into isothermic machine perfusion with an acellular perfusate, normothermic machine perfusion with autologous whole blood and static cold storage groups and preserved ex-vivo for 5 hours. Transplantation was simulated in a reperfusion model at body temperature with a modified cardiopulmonary bypass rig. Core tissue samples were obtained at retrieval (A), post-preservation (F) and post-reperfusion (H), fixed in formalin and H&E stained. Blinded histological analysis was conducted by a senior pathologist and scored using a novel scoring system taking into account acinar cell autolysis, fat necrosis, duct epithelium damage and islet cell damage.

Results: A composite score was obtained from each sample and categorised based on the extent of damage. Total scores were average at each time point for each organ (Table 1) and compared using a two-way ANOVA test. No significant difference was observed between any of the three groups ($p>0.05$).

Conclusions: The feasibility of isothermic preservation for pancreata was displayed. No statistical difference between isothermic perfusion and static cold storage implied non-inferiority. The findings also imply that temperature control and blood as a perfusate are not requirements for machine perfusion.

Table 1:

Time Passed (hrs)	Average Total Score		
	SCS	IMP	NMP
-1 (A)	0	0	0
5 (F)	0.5	0.67	1
6.17 (H)	2.33	2.67	4

Abstract No. 87

IMPLEMENTING A VALUES-DRIVEN POLICY IN A COMPLEX SYSTEM: WHAT HAPPENED WHEN DEEMED CONSENT WAS IMPLEMENTED IN ENGLAND?

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Aim: In May 2020, England implemented an 'opt-out' system of consent, on the basis that switching the default to one more closely aligned with the in-principle preferences of citizens would make deceased organ donation easier.

Method: A mixed-methods evaluation comprising review of Parliamentary debates, surveys and interviews with healthcare professionals; interviews with the public and donor families; analyses of public attitude surveys and donor audit data; and patient and public involvement.

Results: Implementing a 'soft' opt-out system into a well-established and complex opt-in system has been challenging. Consent forms, procedures and audits have become more complicated. Specialist nurses have to move between scenarios with families where opt-out applies, and others where family consent (opt-in) is still required. Bereaved families still think they are the decision makers. There is an (increasing) mismatch between someone establishing their wishes on the organ donor register and what the family are asked after death. Support for organ donation continues to vary between subgroups of the population. Implementation created a context for mis/disinformation to spread, especially among minority ethnic and faith groups. Consent rates fell following implementation and have not recovered since the pandemic which also hampered ability to assess the effectiveness of the law change.

Conclusion: The legacy of informed consent has meant that the principle behind the Act that everybody is a potential donor has yet to be realised. Rather than relying on opt-out legislation, other ways are likely to be more effective in improving the organ donation system.

Abstract No. 88

UTILITY AND THERAPEUTIC IMPLICATIONS OF PHARMACOGENOMIC TESTING IN KIDNEY TRANSPLANT RECIPIENTS (KTR).

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Introduction: Pharmacogenomics plays a role in determining the therapeutic effect of medications due to the genetic polymorphism of drug metabolising enzymes. Poor, intermediate or rapid metaboliser phenotypes have differing metabolic capabilities which impact on drug kinetics. As a result, drug exposure varies between phenotypes and uniform dosing may not be appropriate. Guidelines for tailored dosing are available for certain drug-phenotype pairs to enable optimisation of drug levels. Identification of these, at risk or actionable phenotypes, is of interest in renal transplantation, where tacrolimus concentrations are associated with graft outcomes.

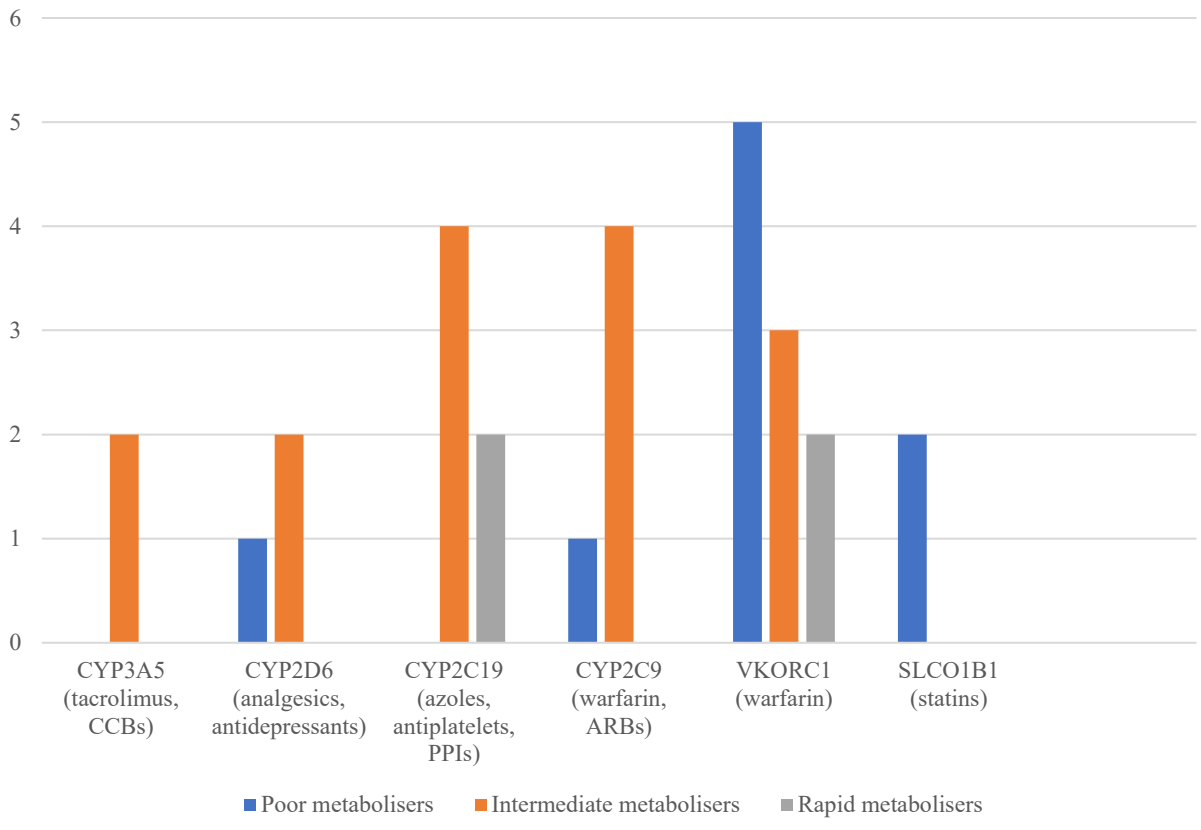
Aim: To assess incidence of actionable phenotypes in KTR and to identify presence of phenotypes associated with altered tacrolimus pharmacokinetics.

Method: Pharmacogenomic screening was conducted in 10 KTR including CYP 3A4/5 genetic testing relevant to tacrolimus metabolism.

Results: A total of 28 actionable phenotypes were detected in 10 screened patients. All 10 had ≥1 actionable phenotype, 90% had ≥ 2 and 40% had ≥ 3, with drug-gene interactions identified for cardiovascular, analgesic and antidepressant medications (refer Table 1). Two of ten patients were CYP3A5 intermediate metabolisers. This phenotype is associated with enhanced tacrolimus clearance, lower troughs and increase risk of rejection with guidelines recommending a 1.5 to 2 fold increase in tacrolimus dosing. Those identified were observed to require higher doses (3.8x) to achieve therapeutic levels and took twice as long for target attainment (7 vs 3.5 days).

Conclusion: Pharmacogenomic screening of KTR has clinical utility in the identification of actionable metaboliser phenotypes who would benefit from tailored dosing of medications, including tacrolimus.

Table 1: Incidence of actionable phenotypes



Abstract No. 89

DECISION SUPPORT TOOL TO AID RISK ASSESSMENT OF ACCEPTING VERSUS DECLINING A KIDNEY OFFER FROM A DONOR WITH A HISTORY OF CANCER

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Background: The decision to accept a kidney offer from a donor with cancer history involves complex assessment of the risk of acceptance versus remaining on dialysis. Transplant clinicians and patients would benefit from tools to aid this decision-making.

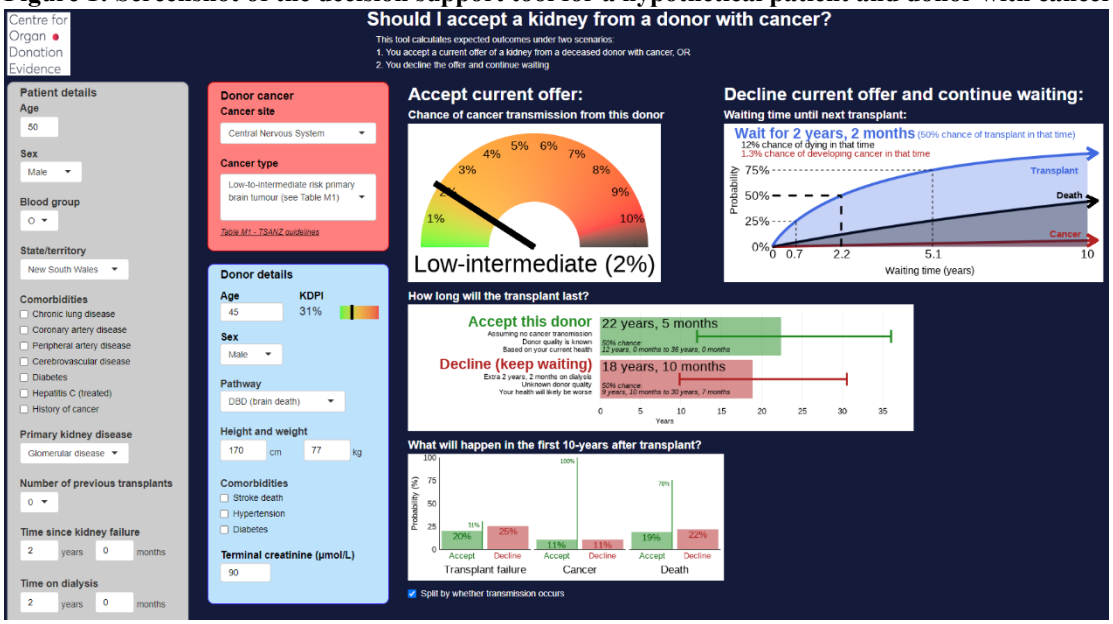
Aims: To develop a decision support tool for patients and clinicians comparing consequences of accepting versus declining a kidney offer from a deceased donor with reported cancer history.

Methods: Using data from ANZDATA/ANZOD to model time to transplant (Weibull) and graft failure (2-knot spline). Mortality and cancer incidence were based on life tables (ABS, Stats NZ), AIHW, and published literature. We adjusted for age, sex, blood-group, previous transplants, comorbidities, kidney disease, dialysis time, kidney failure time, and donor characteristics (age, sex, pathway, KDPI, cancer). Transmission risk by cancer site and type was based on TSANZ guidelines. A tool interface was developed using the R package 'shiny'.

Results: A web-app visualising expected outcomes (Figure 1). For example, for a hypothetical donor (45y, male, DBD, KDPI 31%, glioblastoma) and recipient (50y, male, blood-group O, NSW resident, glomerular disease, transplant-naive, 2-years' dialysis) and the estimated risk of cancer transmission is 2%. If declined, median time to next transplant is 2.2 years, with a risk of death (12%) or cancer (1.3%) in that time. Without transmission, median graft survival is 22.4 years versus 18.9 years if transplanted from an average donor in 2.2 years.

Conclusions: A bespoke visualisation of expected transplant outcomes and risks of remaining on dialysis may enable informed decision-making and better patient outcomes.

Figure 1: Screenshot of the decision support tool for a hypothetical patient and donor with cancer



Abstract No. 90

A PILOT RANDOMISED CONTROLLED TRIAL OF ADVANCED RECOVERY ROOM CARE POST LIVING DONOR KIDNEY TRANSPLANTATION

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[1]Faculty of Health and Medical Sciences, University of Adelaide, [2]Central Northern Adelaide Renal and Transplantation Service, Royal Adelaide Hospital

Background: Significant variation exists between hospitals in how kidney transplant patients are managed in the immediate post-operative period, with post-operative care settings including intensive care units, high dependency units and renal wards. No comparative data exists to inform practices. Advanced Recovery Room Care (ARRC) is a model of post-operative care that provides a high dependency unit level of care.

Methodology: We conducted a single-centre pilot open-label randomised controlled trial (ACTRN12622001093774), randomising live donor kidney transplant recipients 1:1 to either post operative care in the ARRC or to standard of care management on the renal ward. The intervention involved closer haemodynamic monitoring, more frequent medical officer review and the ability to assess and address post operative hypotension with fluids and vasopressors. The primary outcomes were 1) safety (adverse events in the first 28 days post transplantation), 2) recruitment feasibility and 3) episodes of hypotension between groups.

Results: 27 living donor transplants have been performed during the study to date; 18 recipients were eligible for enrolment into the trial. A total of 14 participants underwent randomisation (Figure 1). There were no major adverse events in either arm. 4 out of 7 participants (57%) were hypotensive post operatively in the control arm compared to 1 out of 7 participants (14%) in the intervention. The trial is ongoing.

Conclusion: In this pilot trial, use of advanced recovery room care was safe, and recruitment into a larger clinical trial appears feasible. Advanced recovery room care may reduce the incidence of post-transplant hypotension.

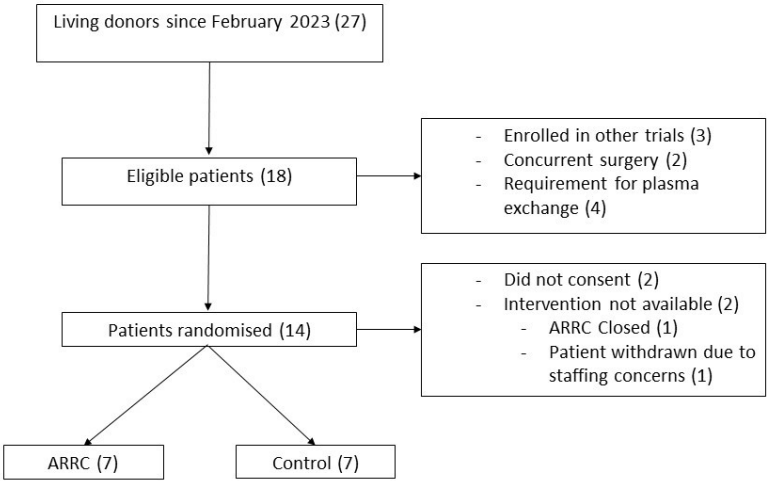

Figure 1: Consort diagram

Abstract No. 91

LIVING DONOR DEMOGRAPHICS IN AUSTRALIA: HAVE DISPARITIES INCREASED OVER TIME?

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Aims: Australia has fewer living donors (LD) now than it did 10-15 years ago, while New Zealand (NZ) has seen continued growth. It was hypothesised over time the LD population has become more concentrated in relatively privileged groups, particularly in Australia. We aimed to assess changes over time in Australian and New Zealand LDs ethnicity, sex, age, and socio-economic position (SEP).

Methods*:* Using the Australian and New Zealand Living Kidney Donor Registry, we included all living donors in Australia and New Zealand (2004-2021). We used Poisson, logistic, and linear regression to analyse change over time in donor demographics.

Results: Of the 5772 living donors, 4562(79%) were from Australia and 1209(21%) from NZ. Mean age at donation was 50±11yrs in Australia and 46±12yrs in NZ ($p<0.001$). In Australia donors were typically female (57%), Caucasian (84%), and SEP privileged (28% in top 3 deciles). Over the study period Australian donors became older ($p<0.001$), more socio-economically advantaged ($p<0.001$), and less likely to be First Peoples ($p<0.001$). Females continue to be the majority of donors, with no change over time ($p=0.83$). In NZ, donors were also typically female (59%), Caucasian (75%). Over time there was no difference in sex ($p=0.63$) or age ($p=0.53$), but an increase in Māori donors ($p=0.027$) in NZ.

Conclusion: Inequities in the living donor population have increased over time in Australia. Compared to the 2004-2009 era, donors are more likely to be older and economically privileged, and less likely to be First Peoples (Australia). In NZ Maori donors have increased.

Abstract No. 92

TRANSCRIPTOMIC ANALYSIS IDENTIFIES AIM2 INFLAMMASOME GENE SIGNATURE IN BK POLYOMAVIRUS ASSOCIATED NEPHROPATHY

DAVIDSON L[1], ROWLANDSON M[2], MUANG MYINT T[2], HIBBERD A[2], HEER M[3], HORVAT J[1], NIESSEN N[1], HSU A[1], REID A[1], MAYALL J[1], TREVILLIAN P[1], BAINES K[1]

[1]Immune Health, Hunter Medical Research Institute, Newcastle, [2]Hunter Transplant Research Foundation, John Hunter Hospital, Newcastle, [3]Renal Transplant Unit, John Hunter Hospital, Newcastle, New South Wales

Aims: BK polyomavirus (BKPyV) is the most common viral infection experienced by kidney transplant recipients and can lead to the development of BKPyV-associated nephropathy (BKPyVAN). This study aims to identify validated gene expression signatures, networks and pathways underlying BKPyVAN.

Methods: Publicly available datasets GSE47199, GSE72925 and GSE75693 were downloaded into GeneSpring GX software and differentially expressed genes (adjusted $p<0.05$ and fold change>2) across all 3 datasets were identified. Protein interaction networks were investigated using STRING and predictive ability assessed using multiple regression, receiver operating characteristic (ROC) curves and area under the curve (AUC).

Results: The comparison of BKPyVAN and stable graft function patients unveiled a total of 1239, 827 and 620 differentially expressed genes that were identified from GSE47199, GSE72925 and GSE75693 gene sets, respectively. There were 136 genes that met our criteria of differential expression across the 3 datasets. From these genes, we identified 4 protein interaction networks, involving 1) complement activation (e.g.C1Qs, C2), integrins (e.g.ITGAL, ITGB2), T cell receptors (e.g.CD8B, CD3D); 2) T/NK cell killing and cytolysis (GZMs, GNLY, PRF1); 3) inflammasome (AIM2, CASP1, PYCARD, CARD16); and 4) chemokines (e.g.CXCL9, CXCL10), and interferon signalling (e.g.IRF1, STAT1). The AIM2 inflammasome 4 gene signature was able to predict BKPyVAN from stable with 94% accuracy ($p<0.001$; GSE72925) and 87% accuracy ($p<0.001$; GSE75693).

Conclusions: Transcriptomic analysis of kidney tissue enables identification of novel biomarkers, mechanisms, and therapeutic targets for BKPyVAN. Further studies are warranted in investigating the AIM2 inflammasome as well as signatures distinct from rejection pathologies in larger sample cohorts.

Abstract No. 93

UTILITY OF 6 AND 12 MONTH SURVEILLANCE BRONCOHSCOPY WITH TRANSBRONCHIAL LUNG BIOPSY IN LUNG TRANSPLANT RECIPIENTS

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Lung Transplant Service, Prince Charles Hospital, Brisbane

Aims: We aimed to assess the utility of surveillance bronchoscopies (SBs) performed in lung transplant recipients (LTRs) in terms of the benefit of detecting and treating occult acute rejection (AR) in relation to developing chronic lung allograft dysfunction (CLAD) and improving overall survival and the risk of procedural related complications.

Methods: We conducted a single institution retrospective analysis evaluating 118 adult patients who received bronchoscopies within the first 12 months following lung transplantation (LTx) at The Prince Charles Hospital between January 2018 and January 2023. The data collected included baseline characteristics, bronchoscopy results, and complications. The protocols for immunosuppression, bronchoscopy, and grading and treatment of acute rejection were standardised.

Results: Over the five-year period, there were 456 SBs performed. The rate of AR detected on SBs was 10.5%. Of this, 8.1% was detected within the first three months compared with 1.9% beyond three months, and 98% of AR was graded as minimal to mild severity, with an average A and B score of 1.38 and 0.15 respectively. Each patient had an average of 2.8 additional bronchoscopies performed during the first 12 months**.** The rate of significant bleeding was 2.2% and pneumothorax was 1.1%. The overall survival rate was 83.6% and the CLAD free survival rate is under analysis.

Conclusions: At our service, we found that the rate of occult AR detected on SBs was low beyond three months. We have not yet determined whether the detection and treatment of occult AR improves CLAD free and overall survival but this is of importance given bronchoscopy is not a risk free procedure.

Abstract No. 94

SHORT COURSE TOTAL LYMPHOID IRRADIATION (TLI) PRE-HEART TRANSPLANT (HTX) FOR HIGHLY SENSITIZED RECIPIENTS

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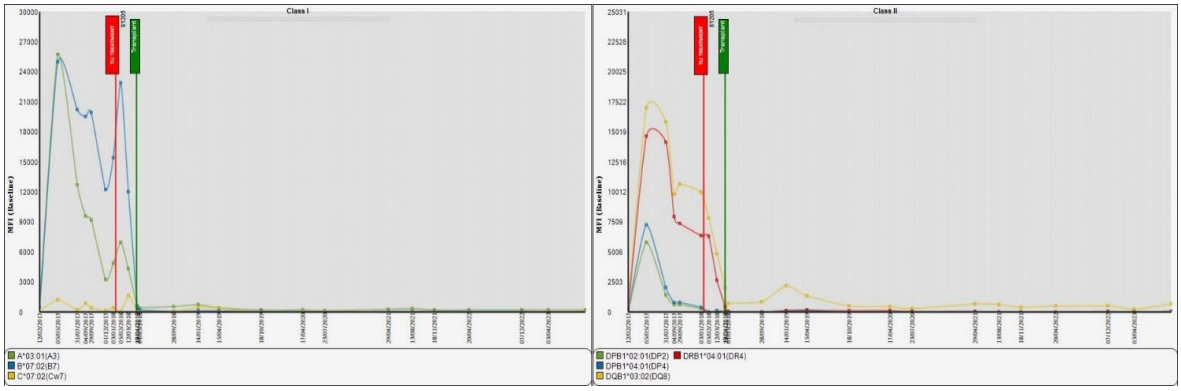
[1]Advanced Heart Failure and Transplant Unit, Fiona Stanley Hospital, Perth, [2]Radiation Oncology, Sir Charles Gairdner Hospital, Perth, [3]Pathwest, Fiona Stanley Hospital, Perth, [4]Department of Clinical Immunology, Fiona Stanley Hospital, Perth, [5]Radiation Oncology, Fiona Stanley Hospital, Perth

Aims: A report of two highly sensitised recipients who received short course TLI pre-HTx.

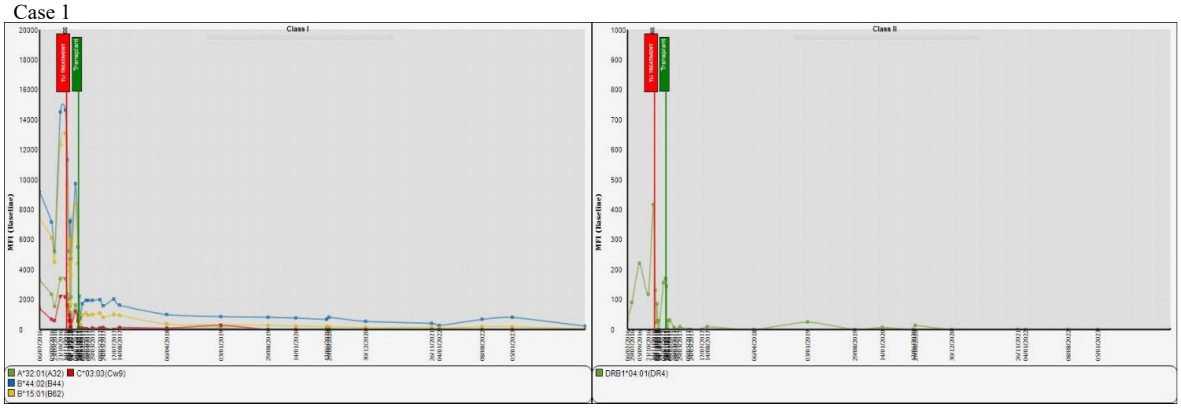
Methods: Information was obtained from electronic medical records and transplant databases.

Results: Case 1 is a 43-year-old female (calculated panel-reactive antibody (cPRA) class I 85%, class II 63%) who required extracorporeal membrane oxygenation (ECMO) support and a left ventricular assist device for proximal LAD dissection and cardiogenic shock. Case 2 is a 50-year-old diabetic female (cPRA class I 90%, class II 0%) with ischaemic heart disease and refractory angina despite multiple surgical and percutaneous revascularization attempts. Pre-transplant desensitization with mycophenolate and rituximab did not alter her immune profile. Both had remote pregnancies and blood transfusions. They received 4.5Gy of TLI (four fractions over four consecutive days) and underwent HTx 92 and 58 days post-TLI respectively. Complement-dependent cytotoxicity T-cell crossmatches were negative however Case 2 had a weakly positive B-cell crossmatch. Both received induction (basiliximab and anti-thymocyte globulin respectively), plasmapheresis and routine maintenance immunosuppression with a persistent reduction in their donor specific antibody profile (Figure 1). Case 2 had primary graft dysfunction requiring temporary ECMO post-HTx. Both patients are alive (more than 5 and 7 years respectively post HTx) with preserved graft function, and no significant lymphophenias or rejection. Case 1 was diagnosed with myelodysplasia five years post-HTx and remains on chemotherapy.

Conclusions: Western Australia is geographically remote with a limited donor pool. Short course TLI is an alternative desensitization strategy pre-HTx however further studies are required to assess the longer-term safety and efficacy of this treatment.



Case 1



Case 2

Figure 1: Timeline of Class I and II donor specific antibody MFI trends for Cases 1 and 2. The red and green vertical lines represent time of TLI and HTx respectively

Abstract No. 96

SIR-ZOSTER: IMMUNOGENICITY OF RECOMBINANT ZOSTER VACCINATION IN KIDNEY TRANSPLANT RECIPIENTS AND HEALTHY COHABITANTS

PERKINS G[1], PENKO D[1], TUNBRIDGE M[1], CHAI CS[2], HURTADO P[2], GRUBOR-BAUK B[2], IRISH G[1], SHI B[3], SINGER J[4], YING T[4], CHADBAN S[4], COATES PT[1]

[1]Central and Northern Adelaide Renal and Transplantation Service, Royal Adelaide Hospital, [2]Adelaide Medical School, University of Adelaide, [3]Kidney Node, Charles Perkins Centre, University of Sydney, [4]Kidney Centre, Royal Prince Alfred Hospital, Sydney

Background: Kidney transplant recipients (KTRs) remain vulnerable to infection, hospitalisation and death from vaccine-preventable infections. A non-live vaccine against varicella zoster virus (VZV; cause of shingles) is now available for KTRs, however the effect of immunosuppression on vaccine immunogenicity is not known.
Methods: This is a prospective, observational trial to be conducted across the Royal Adelaide Hospital (SA) and the Royal Prince Alfred Hospital (NSW). The study will enroll four groups: [1] KTRs receiving tacrolimus (TAC), mycophenolate mofetil (MMF) and prednisolone (PRED) (N=25); [2] KTRs receiving TAC, mechanistic-target-of-rapamycin inhibitor (mTORi) and PRED (N=25); [3] KTRs receiving mTORi, MMF and PRED (N=25); [4] non-immunosuppressed cohabitants (N=25). Participants will receive 2 doses of recombinant zoster vaccine (RZV), 8 weeks apart. VZV-specific T cell and antibody responses will be assessed at 5 time points (baseline, Week 1, Week 8, Week 16, Week 52) by activation-induced marker assay and ELISA, respectively.
Results: The SIR-ZOSTER study is prospectively registered (NCT06262776) and approved by the relevant human research ethics committee. A flow cytometry panel to evaluate absolute frequencies of leukocyte lineages in whole blood has been established and shows concordance with Complete Blood Counts by Coulter counter. Participant recruitment will begin March 1, 2024.
Conclusion: This trial will be the first to evaluate immunogenicity of the recombinant zoster vaccine in KTRs relative to non-immunosuppressed individuals. The influence of 3 common immunosuppression regimens on the formation and longevity of VZV-specific antibody and T cell immunity will be assessed, with data out to 52 weeks. The outcomes will inform subsequent studies of immunosuppression modification to improve vaccine responses in KTRs.

Abstract No. 97

OXYGENATED MACHINE PRESERVATION OF MULTI-VISCERAL BLOCKS FOR TRANSPLANTATION IN A LARGE ANIMAL MODEL

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Aims: This pilot study investigates whether a multi-visceral block can be preserved in an acellular, oxygen-enriched balanced buffered electrolyte solution at ambient temperature less than 39°C.
Methods: A multi-visceral block comprising of the liver, pancreas, small bowel, and kidneys were retrieved from four 80kg Yorkshire pigs with an in-situ flush of cold saline and UW solution. The block was then perfused with an oxygen-enriched, balanced buffered electrolyte solution with albumin at a concentration of 4g/dl and TPN (Baxter^{TM}) @25ml/kg. 10mg/dL of creatinine was added. The mean PaO_2 achieved was 318mmHg (SD = 119). The block was perfused using a peristaltic pump at a pressure of 30 to 40mmHg. Reperfusion was on a normothermic preservation rig as a surrogate to transplantation with whole blood at 60mmHg.
Results: All blocks demonstrated oxygen consumption accompanied by glucose utilization, ATP production, a physiological response to enteral glucose and renal creatinine clearance. Histological examination and comparison of the blocks from before retrieval to end of preservation and after reperfusion by a blinded senior histopathologist showed no significant change.
Conclusions: The study demonstrates the feasibility of preserving a multi-visceral block with an oxygenated simple buffered electrolyte solution at ambient temperature. The advantage of not being constrained by temperature allows for the creation of simpler, more cost-effective preservation for transplantation.

Abstract No. 98

ROLE OF PHARMACOGENOMICS IN DECEASED DONOR KIDNEY TRANSPLANTATION: A CASE REPORT

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Introduction: Tacrolimus remains a mainstay component of modern-day immunosuppression in solid organ transplantation, with therapeutic drug monitoring required to prevent acute rejection/toxicity. Genetic variations in cytochrome P450 enzymes (CYP) particularly CYP3A5, have been shown to affect tacrolimus metabolism. Previous studies have highlighted the potential benefits of pharmacogenetic analysis in kidney transplantation, however its clinical application remains limited in Australia.

Case: A 42-year-old Indigenous female with end-stage renal failure secondary to diabetic nephropathy underwent deceased donor kidney transplantation. She received rabbit anti-thymocyte globulin induction due to immunological risk, characterised by HLA 4/6 mismatch and moderate pre-transplant donor-specific antibodies (DSA). Her mPRA was 83.4% with class I (B*40:01 MFI= 1530) and class II (DRB4*01:03 MFI= 2943) DSA. Despite immediate graft function she developed biopsy proven acute antibody-mediated rejection, severe refractory hypertension and TMA ten days post transplantation with rise in class I (B*40:01 MFI= 4287) and II (DRB4*01:03 MFI= 12500) DSA in the setting of refractory low tacrolimus trough levels (<2 ug/mL) despite rapid escalation of tacrolimus dosing. Pharmacogenetic analysis was performed and demonstrated CYP3A5*1/*3 genotype associated with rapid tacrolimus metabolism. CYP3A5*1/*3 genotype was also associated with rapid metabolism of calcium channel blockers which may explain her persistent hypertension despite dose escalation of nifedipine. Unfortunately, the patient had no response to therapy and subsequently underwent graft nephrectomy on day +21.

Conclusion: Our report illustrates the potential clinical utility of pharmacogenomics in deceased donor kidney transplantation. Identifying individuals with actionable genotype can assist in achieving therapeutic drug concentration more rapidly to avoid adverse complications.

Abstract No. 99

CHRONIC KIDNEY DISEASE IN NON-KIDNEY SOLID ORGAN TRANSPLANT: A SINGLE CENTRE EXPERIENCE

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Background: Chronic kidney disease (CKD) is common following non-kidney solid organ transplantation (NK-SOT), with reported prevalence exceeding 25% by 10 years post-transplantation. We seek to review the clinical characteristics and outcomes of NK-SOT patients with CKD.

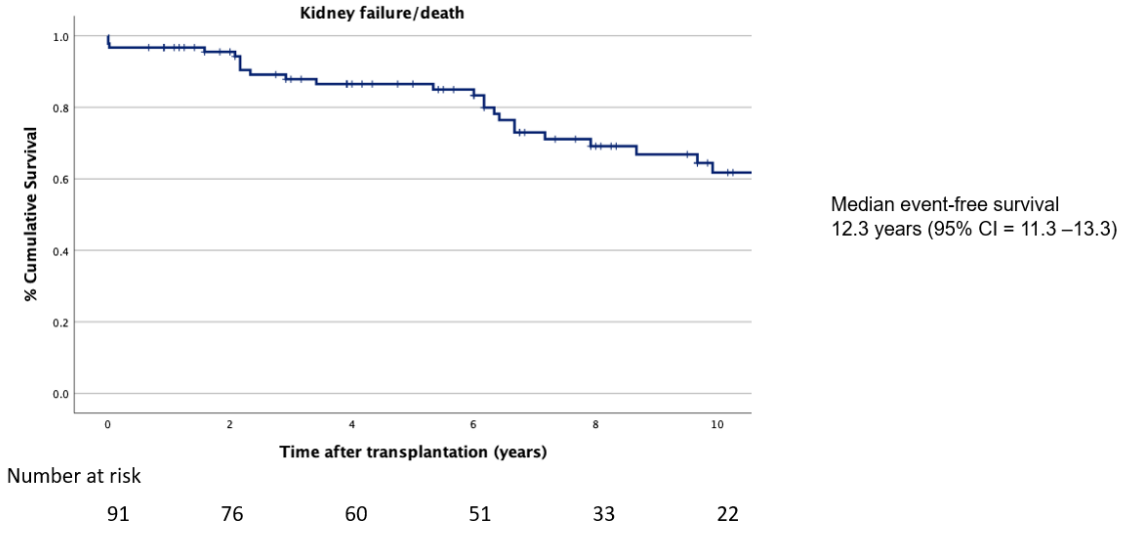
Methods: Retrospective observational analysis of NK-SOT patients who attended CKD clinic at Fiona Stanley Hospital between 2018 – Sep 2023. Data collected from electronic medical records included baseline demographics, immunosuppression (IS) regimen and biopsy findings. Primary outcome was all-cause mortality or kidney failure, defined as need for long-term renal replacement therapy.

Results: There were 91 patients included, 67.0% were lung and 26.4% cardiac transplant recipients. Median age at transplantation was 56 (IQR 25, 62) years and median duration of post-referral CKD follow-up was 27 (IQR 25, 59) months. Mean eGFR at first CKD outpatient review was 31.4 ± 14.1 ml/min/1.73 m^2. Primary outcome was observed in 39.6% of patients (death= 26, kidney failure= 18). Most patients remained on a calcineurin inhibitor (CNI)-based IS regimen (87.9%) and triple-agent immunosuppression (63.7%). Only 9 patients underwent kidney biopsy, most with findings showing CNI toxicity and 4 experienced major post-biopsy bleeding. The median time to kidney failure or death was 12.3 years (95% CI = 11.3 – 13.3) post-transplantation (Figure 1). Heart transplant recipients are at a lower adjusted risk of primary event compared to lung transplant recipients (HR 0.24, 95% CI= 0.07 – 0.84, p= 0.025).

Conclusion: CNI toxicity remains as a major cause for CKD in NK-SOT recipients. Prospective studies are required to evaluate the benefits of CNI minimisation in this population group.

Figure 1: Kaplan-Meier survival curve for time to kidney failure or death post transplantation

Figure I: Kaplan–Meier survival curve for time to kidney failure or death post transplantation



Abstract No. 100

TOFACITINIB AS SALVAGE IMMUNOSUPPRESSIVE THERAPY AFTER LUNG TRANSPLANTATION

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Aims: Conventional immunosuppression regimens after lung transplantation (LTx) are frequently associated with multiple toxicities, limiting immunosuppressive augmentation. Tofacitinib, an oral Janus kinase 3 inhibitor is an alternative immunosuppressant that has shown promise in kidney transplant. However, its use in LTx has not been described.

Methods: We report our experience with this single-center, retrospective case series that included adult LTx recipients treated with tofacitinib-based immunosuppression for cellular mediated rejection. Further escalation of conventional immunosuppression was not feasible in all cases. All patients were at high risk of infection and tofacitinib was selected due to the short half-life, allowing rapid withdrawal in case of severe infection. Antibody mediated rejection or acute infection was excluded prior to initiation.

Results: Seven patients received tofacitinib with a median time to initiation of 715 days [IQR:301-990] post LTx, with median follow up of 84 days [IQR:5-368]. Reasons for initiation included: fibrotic pulmonary infiltrates on chest imaging, oxygen supplementation, minimal improvement with methylprednisolone pulse, declining pulmonary function tests. Serious infection developed in five patients requiring temporary or permanent cessation. Four patients are continuing tofacitinib augmentation with either an improvement or stabilisation of clinical indicators, with spirometry demonstrating restrictive (n=3) or obstructive (n=1) patterns of rejection that were present prior to initiation. Three patients ceased within 10 days of commencement, and all three died from sepsis (n=2) or graft failure (n=1) that could not be linked to tofacitinib.

Conclusion: Tofacitinib appears to be a promising immunosuppressant when introduced as salvage therapy in a select group of LTx recipients.

Abstract No. 101

A QUALITATIVE CONTENT AND DISCOURSE ANALYSIS COMPARING THE CONSENT SYSTEMS FOR DECEASED ORGAN DONATION IN SPAIN AND ENGLAND

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Aim: England switched to an opt-out system in 2020 but consent rates to deceased organ donation have not yet improved. Spain also operates a similar opt-out system, yet has almost twice the organ donation rate of the UK. We compared the consent policies and procedures of the two countries to begin to explain this difference.

Methods: Comparative qualitative content and discourse analysis of policy and procedural documents.

Results: There are more pathways to organ donation at end of life in Spain, potentially increasing its visibility and contributing to its normalisation. Families are as involved in decision making in Spain as they are in England, yet the procedural documents used are simpler and reported time taken for consent is much shorter in Spain. The English system focuses on establishing the last known decision of the deceased whereas the Spanish system aims to establish the willingness of the person to donate their organs and more broadly to help others in life. The English approach was more complex and more centralised, with risk-averse protocols, implemented in a health care system with fewer ICU beds and with no legal protections for the potential organ donor's decision in life (the UK organ donor register has no legal status).

Conclusion: If England's ambition is to achieve the consent rates consistently seen in Spain, greater legal protection is required to honour the decision of the potential organ donor made in life and there needs to be a shift from impartiality and risk-aversion to promoting organ donation.

Abstract No. 102

SEQUENTIAL KIDNEY TRANSPLANT IN PATIENTS WITH A PREVIOUS LUNG TRANSPLANT; A CASE SERIES

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Aims: Chronic Kidney disease occurs in approximately 25% of lung transplant recipients leading to end stage renal disease requiring renal replacement therapy. We present sequential renal transplant as a treatment option for these patients, evaluating graft survival, rejection episodes, and infectious and malignant outcomes.
Methods: A single centre observational retrospective study including five lung transplanted patients who underwent renal transplant between 2010-2021. The patients were followed for a minimum duration of 30 months.
Results: All five patients (female 3, male 2) received a kidney transplant within 0-2 years of developing end stage renal disease. Two patients received a deceased donor transplant and three a live donor renal transplant. The average age of patient was 45. Four patients received haemodialysis and one received peritoneal dialysis prior to transplantation. Patients were maintained on their usual lung transplant immunosuppression augmented by increased corticosteroids for four weeks and basiliximab. 3/5 patients developed donor specific antibodies post renal transplant. One patient had persistent donor specific antibodies. None of the patients developed antibody mediated rejection. 2/5 patient's developed T cell mediated rejection which was successfully treated. The cause of renal failure (atypical haemolytic uraemic syndrome) recurred in one of the patient's transplant kidney. 2/5 had cytomegalovirus reactivation. Two patients developed skin cancers post transplantation. All had functioning grafts at the end of the follow up period with average creatinine 156 and GFR 47.
Conclusions: Renal transplant is well tolerated and effective post lung transplantation in suitable patients. It requires long-term stringent monitoring and careful patient selection.

Abstract No. 103

PRO-INFLAMMATORY CYTOKINE LEVELS IN BABOON RECIPIENTS OF GENETICALLY MODIFIED PORCINE NEONATAL ISLET CELL CLUSTERS

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Background: It has been well documented that baboon recipients of pig solid organ xenografts can develop a sustained state of systemic inflammation, evidenced by elevated circulating levels of inflammatory mediators; elevations are also associated with infection and rejection. However, the trajectory of expression of these molecules in pig-to-baboon islet xenotransplantation has not been examined. We prevously reported long-term survival and function of genetically modified porcine neonatal islet cell clusters (NICC) transplanted intraportally into diabetic baboons, with rejection occurring only after elective withdrawal of immunosuppression. In this study, we investigated changes in the inflammatory milieu in these recipients.
Aim: To evaluate serum pro-inflammatory cytokine/chemokine levels in baboon recipients of porcine NICC.
Methods: Pre- and post-transplant sera from recipients (n = 14) were analysed for a range of non-human primate cytokines/chemokines including IL-6, IL-8 and MCP-1, using a Millipore kit.
Results: Notably, IL-6 consistently spiked at 1-6 hours post-transplant (10-350 pg/ml). IL-8 and MCP-1 were rarely elevated early, but demonstrated spikes coinciding with post-surgical issues such as wound complications or inflammatory teething episodes. Elevated IL-6 (435 and 2080 pg/ml), IL-8 (1929 and 3045 pg/ml), and MCP-1 (6682 and 13561 pg/ml) levels were detected in two recipients at rejection.
Conclusion: Infusion of porcine NICC resulted in elevated IL-6 levels soon after transplantation, suggesting that peri-transplant treatment with the IL-6 receptor antagonist tocilizumab may be beneficial. However, there was little evidence of sustained systemic inflammation, suggesting efficacy of the immunosuppressive protocol and differences in the response of solid organs compared to islet xenografts

Abstract No. 104

HUMAN HERPES VIRUS 8 DISEASE AMONG LIVER TRANSPLANT RECIPIENTS: CASE SERIES AND SYSTEMATIC REVIEW OF LITERATURE

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Aims: The diagnosis of human herpesvirus 8 (HHV8) disease post-liver transplant (LT) can be challenging with a wide clinical spectrum and limited available diagnostic tests. We aimed to describe HHV8 disease post-LT.
Methods: Case series of HHV8 disease among LT recipients in New South Wales (NSW), 2017-2023, classifying likelihood of donor-derived transmission by international criteria. System
atic review of Medline for reported cases of HHV8 disease post LT, with standardised data extraction.
Results: Three LT recipients in NSW developed HHV8 disease, associated with HHV8 PCR positivity. Recipient 1 had a probable donor-derived transmission, with visceral Kaposi sarcoma (KS) presenting 6 months post-transplantation. Management with immunosuppression modification and Paclitaxel chemotherapy resulted in disease remission. Recipient 2 had a probable donor-derived transmission, with KS, multicentric Castleman's disease and haemophagocytic lymphohistiocytosis presenting 3 months post-transplant. Despite treatment with immunosuppression modification, Hydrocortisone and Rituximab, Recipient 2 died of HHV8 disease. Recipient 3 had a possible-unlikely donor-derived transmission, with Kaposi sarcoma virus induced cytokine syndrome presenting 6 months post-transplant. Recipient 3 was treated with immunosuppression modification and Ganciclovir but died of HHV8 disease. In the literature, we identified 84 cases of LT recipients with HHV8 disease (Table 1). Most (62%) occurred within 12 months post-transplant, but few were suspected to be donor-derived (19%). After a median follow-up of 12 months, death was common (45%) and disease remission occurred in 44%.
Conclusion: Although rare, HHV8 post-LT causes a wide spectrum of disease, a high mortality and can be donor derived. Awareness is crucial for early diagnosis and treatment.

Table 1: Characteristics of 84 case reports of HHV8 (human herpesvirus 8) disease post liver-transplantation. *Other diseases were post-transplant lymphoproliferative disease (2), immune thrombocytopenia (1) and a de novo spindle cell neoplasm (1).

	N (column %)
Onset post-transplant (months: median, IQR)	8 (5-17)
Disease manifestations (non-exclusive)	
Kaposi sarcoma	69 (82)
Multicentric Castleman's disease	10 (12)
Haemophagocytic lymphohistiocytosis	6 (7)
Kaposi sarcoma virus induced cytokine syndrome	4 (5)
Primary effusion lymphoma	3 (4)
Other*	4 (5)
Multiple	9 (11)
Donor-derived infection suspected	16 (19)
Treatment	
Reduction in immunosuppression	58 (69)
mTORi	28 (33)
Chemotherapy	22 (26)
Antivirals	17 (20)
Rituximab	10 (12)
Steroids	14 (17)
Surgery	9 (11)
None	3 (4)
Follow up period (median, IQR)	12 (2-40)
Clinical status	
Death	38 (45)
Death attributed to HHV8 disease	21 (25)
Disease remission	37 (44)
Disease regression but not remission	6 (7)

Abstract No. 105

CHRONIC HEPATITIS E MASQUERADING AS ALLOGRAFT REJECTION IN A LIVER TRANSPLANT RECIPIENT

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Introduction: Hepatitis E virus (HEV) is the most common cause of acute viral hepatitis worldwide. Organ transplant recipients and other immunocompromised hosts are at risk of a chronic form of HEV with rapid progression to cirrhosis. Whilst donor-derived infection can occur, locally transmitted cases in high income countries including Australia are increasingly recognised. In the liver transplant setting, features may be subtle and difficult to distinguish from rejection.

Aims: Review the complexities of hepatitis E epidemiology, diagnosis and management with a focus on the liver transplantation setting.

Methods: Clinical and laboratory features of a case of chronic hepatitis E are described with a review of local epidemiology, diagnostic complexities and management.

Results: A case of chronic hepatitis E following liver transplantation is described in which HEV occurred alongside co-existing rejection, delaying recognition and treatment. Mode of transmission was unable to be identified but did not appear to be donor-derived and occurred shortly following transplantation. Modulation of immunosuppression and adjunctive ribavirin led to resolution of viraemia and hepatitis.

Conclusions: HEV diagnosis in the context of liver transplantation can be elusive. Screening practices prior to organ and blood donation vary worldwide. In addition, testing methodologies have highly variable sensitivities and combinations of serological and molecular methods may be necessary. Management often necessitates a reduction in immunosuppression and may require antiviral therapy. Although seroprevalence rates in Australia approach 6%, HEV remains an underrecognized and underdiagnosed disease with significant consequences for transplant recipients.

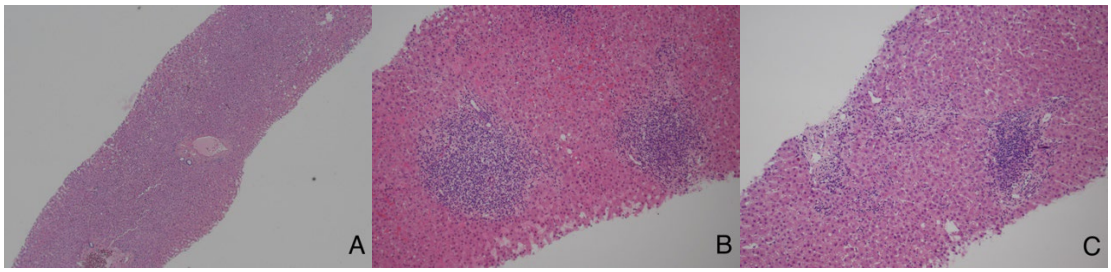

Figure 1. Histopathology of liver biopsy samples. 1a) April 2020 biopsy demonstrating mildly increased centrilobular hepatocyte turnover and minimal focal endothelialitis. 1b) January 2023 biopsy demonstrating portal inflammation with a conspicuous nodular infiltrate, lymphocytic cholangitis and foci of endothelialitis. 1c) February 2023 biopsy demonstrating persistence of changes seen in January with developing interface necrosis.

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Abstract No. 106

ADDRESSING QUALITY-OF-LIFE AFTER PAEDIATRIC LIVER TRANSPLANTION. CO-DESIGNING PRACTICE CHANGE TO IMPROVE OUTCOMES

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Paediatric liver transplant (PLT) recipients have lower quality-of-life compared to peers. Patient-reported outcome measures (PROMs) are standardised instruments that capture data about patients' symptoms, functional status, and quality-of-life. Integrating PROMs into routine care enables monitoring of health status and well-being, allowing earlier tailored interventions to improve quality-of-life. Integration of PROMs within PLT services has not been established in Australia.

Aims: Develop recommendations for integrating PROMs within clinical care for PLT recipients at The Royal Children's Hospital Melbourne.

Methods: A comprehensive literature review and semi-structured interviews with subject matter experts were undertaken to analyse and synthesis implementation key issues.

Results: No literature on PROMs implementation in PLT was identified. Research on integrating PROMs in paediatric care emphasises structured implementation guided by implementation research theories and frameworks. Understanding local barriers and facilitators to implementation and achieving buy-in is key for sustainable integration. Themes with subthemes summarise characterstics impacting implementation: (1) defining the purpose; relating to establishing a shared vision with stakeholders, (2) co-designing and planning; relating to knowledge, attitudes, and beliefs, working environment, intervention availability, and patient-level barriers, and (3) preparing the organisation and clinicians; relating to translating knowledge, electronic-medical record integration, establishing resources, and culture change. Despite PLT validated PROMs, no consensus in tool selection within the PLT international community exists.

Conclusion: Implementation of PROMs in PLT is complex. Implementation strategies and supporting change through co-design are recommended. Assessing and addressing barriers to implementation supports buy-in from stakeholders. Developing consensus in PROM tool selection with liver transplant experts is needed.

Abstract No. 107

HUMAN CD4+CD25+CD127LO TREG IN VITRO ACTIVATION WITH ALLOANTIGEN AND RIL-4 INDUCES RECEPTOR FOR INTERLEUKIN 5 (IL-5RA)

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Aim Activating human tTreg ($CD4^+CD25^+CD127^{lo}Foxp3^+$) to increase antigen-specific suppression is a therapeutic goal. Rat $CD4^+CD25^+$ Treg activated *in vitro* with rIL-4/alloantigen (alloAg) express more Foxp3 and CD25, induce IL-5Rα, and are potent suppressors of alloactivation *in vitro* and *in vivo*.

Methods $CD4^+CD127^{lo}CD25^+$ Treg isolated by FACS from blood of healthy volunteers were cultured for 4 days with rIL-4 (2ng/ml) and irradiated alloAg. Cells were examined, using flow cytometry, for IL-5Rα expression and shifts in Treg subpopulations; resting Pop I ($Foxp3^+CD25^+CD45RA^+$), activated Pop II ($Foxp3^{hi}CD25^{hi}CD45RA^-$), Treg and activated effector T cell Pop III ($Foxp3^+CD25^+CD45RA^-$) and chemokine receptors; CXCR3 (Th1), CCR6 (Th17), CCR4 (Th2).

Results Enriched tTreg had 85.1 ± 9.5% $CD4^+CD25^+CD127^{lo}$ cells with 14.8 ± 9.9% Pop I, 17.2 ±10.6% Pop II and 48.4+8.2% Pop III. <2% cells were $Foxp3^+$ when cultured alone. rIL-4 alone didn't sustain Pop II (0.27 ± 0.47) and Pop I reduced (7.2 ± 8.7%). Adding rIL-4/alloAg preserved Pop I (25.2 ±15.3) and 1/4 cells in Pop II survived (4.2±1.9%). $CCR4^+CXCR3^-CCR6^-$ (Th2-like cells) increased with rIL-4/alloAg, while % $CXCR3^+$ or $CCR6^+$ cells were similar. IL-5Rα increased in Pop I with alloAg or rIL-4/alloAg. Pop II had more IL-5Rα expressing cells with rIL-4/alloAg (26%) compared to fresh tTreg (0.24%), alloAg (11.8%) or rIL-4 (0%). Pop III with rIL-4 had higher IL-5Rα expression than with rIL-4/alloAg (15.2 vs 4.41%).

Conclusion Human Treg cultured with alloAg/rIL-4 had induced expression of IL-5Rα and chemokine receptors, consistent with Th2-like Treg. Th2 cytokine IL-4 may promote activation of antigen-specific Treg to improve tolerance inducing therapy.

Abstract No. 108

SAFETY AND EFFICACY OF MV140 SUBLINGUAL VACCINE IN PREVENTING RECURRENT URINE INFECTIONS POST RENAL TRANSPLANT: A CASE SERIES

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AIMS: The primary aim was to determine if the polyvalent MV140 sublingual vaccine (MV140) is safe and tolerated in renal transplant recipients (RTR). The secondary aim was to demonstrate if MV140 is effective in reducing the number or severity of symptomatic urinary tract infections (UTIs) in RTR.

METHODS: Digital medical records of 6 RTR who completed a 3-month course of MV140 were reviewed. Participant age ranged from 38 to 70, 4 were female and 3 had Type 2 Diabetes Mellitus. Average time post-transplant was 4.9 years. Positive urine cultures, microbiology (including colony forming units and urine WBC), symptoms and antibiotic administrations (for treatment and prophylaxis) during the 12 months before and after MV140 were recorded. Medical background, immunosuppression, urethral catheter, ureteric stent, and concurrent prophylaxis measures were recorded.

RESULTS: No adverse reactions or side effects have been reported to date by participants through passive surveillance. There were no episodes of rejection or graft failure during the study period, and mean participant eGFRs were stable (43mL/min/1.73m^2 before MV140, 42mL/min/1.73m^2 after). All patients had decreased UTI and treatment antibiotic days (including IV/SC) post MV140, although there was an increase in prophylactic antibiotic days.

CONCLUSIONS: MV140 was well tolerated in RTR. Some individuals had reduced UTI rate and less antibiotic treatment after MV140 but also had antibiotic prophylaxis which may have affected UTI rate. Further study is required with higher patient numbers, and ideally randomised controlled trial design. Immunological response to vaccine and alternative regimens in RTR might also be explored.

TABLE 1:

	UTIs in 12 Months Prior	**UTIs in 12 Months Post**	**Treatment Antibiotic Days in 12 Months Prior (IV/SC)**	**Treatment Antibiotic Days in 12 Months Post (IV/SC)**	**Prophylactic Antibiotic Days in 12 Months Prior**	**Prophylactic Antibiotic Days in 12 Months Post**
Patient 1	3	3	56 (27)	20 (15)	115	287
Patient 2	2	0	39 (14)	5 (0)	7	61
Patient 3	2	1	70 (0)	68 (8)	125	264
Patient 4	6	2	107 (40)	34 (6)	73	316
Patient 5	3	2*	55 (9)	28 (20)*	0	0*
Patient 6	5	3*	41 (0)	30 (2)*	118	84*

*Patients 5 and 6 have yet to complete 12 months post vaccine follow-up, having completed 7 months and 5 months respectively.

Table 1: Absolute number of symptomatic UTIs, UTI-related antibiotic treatment and UTI-related prophylactic antibiotics in the 12 months before and after administration of MV140.

Abstract No. 109

UTILITY OF BARIATRIC SURGERY TO INCREASE ACCESS TO RENAL TRANSPLANTATION: A SINGLE-CENTRE STUDY

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Renal transplant (RT) is the best treatment for end-stage renal disease (ESRD). Obese patients have limited access to RT and higher mortality and morbidity post-transplant.

Aim: To assess the utility of bariatric surgery (BS) to increase access to RT.

Method: Retrospective review of patients with BMI >30 assessed for RT suitability between 2020-2023.

Results: Over 4 years, 40 patients were referred for BS assessment. Twenty (50%) proceeded to laparoscopic sleeve gastrectomy (LSG) and 12/20 (60%) patients successfully activated on transplant waitlist (TWL). Seven patients proceeded to successful RT. Mean age of those transplanted was 50 years, 5/7were female and 3/7 had diabetic kidney disease. Of the 7 successful RT, mean BMI pre-LSG was 41.6kg/m^2, mean BMI pre-RT was 28.8kg/m^2 with median weight loss of 33kg per patient at mean duration of 16.5 months. Only 2/7 RT patients had DGF. Surgical complications and graft outcomes are shown in the Table. Nil RT patients developed new-onset diabetes after transplant (NODAT). Mean sustained weight loss post-transplant was -3.3kg (range -5kg to -12kg) at median of 18 months follow-up. Weight gain occurred in 2/7 patients (7kg and 15kg). Two patients (10%) failed to achieve target weight with LSG and continued to Intestinal bypass surgery (SASI) and were not accepted for TWL. Three (15%) LSG patients were placed on hold for TWL, for unrelated medical issues. Only one graft was lost due to post-transplant HUS.

Conclusion: LSG in obese patients with ESRD provides safe and effective weight loss with minimal complications and acceptable post-transplant outcomes.

Demographics	Diabetic	BMI pre LSG	BMI at transplant	Transplant type	Days from LSG to RT	DGF	Surgical complications	Current BMI	Current creatinine (µmol/L)
57 yo M	Y	49	33	DBD	504	N	Nil	29	80
65 yo F	Y	36	31	DCD	262	Y	Nil	29	Graft Lost
50 yo F	N	41	31	DBD	826	N	Perinephric haematoma	29	127
48 yo M	Y	40	23	DBD	354	N	Nil	25	163
38 yo F	N	42	26	DBD	453	Y	Transfusion	26	88
53 yo F	N	41	30	LURD	483	N	Nil	30	61
40 yo F	N	42	27	DBD	651	N	Nil	34	73

Abstract No. 110

VIRTUAL CROSSMATCHING: HISTORICAL SAG TESTING MAY NOT ACCURATELY REFLECT CURRENT RECIPIENT ANTIBODY PROFILE AT KIDNEY OFFER

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We present a 66yo lady on haemodialysis with IgA nephropathy and a failed kidney transplant. She was highly sensitised with calculated panel reactive antibody (cPRA) 84% and multiple class I and II HLA antibodies. She was offered a deceased after circulatory death (DCD) kidney on the 16/11/2023 with 3/6 HLA mismatch and no donor specific antibodies (DSA). This offer was based on single antigen (SAG) testing results of serum dated 08/08/2023. She received anti-thymocyte globulin (ATG) induction (3 doses; 1mg/kg) in addition to standard immunosuppression. She had graft function by day 3 post-transplant. On day 6 (22/11/23), retrospective SAG testing of serum dated 08/11/2023 showed cPRA 99%, positive T- and B-cell flow crossmatch and strong class I and II DSAs to A*24:02 (MFI 6284), A*24:03 (MFI 5752), B*38:02 (MFI 2346) and DRB5*01:01 (MFI 2735). Repeat testing of serum dated 23/11/23 confirmed these results (table 1). Plasmapheresis (PLEX) was commenced, and intravenous immunoglobulin (IVIg) administered. Post-PLEX SAG testing on the 06/12/2023 showed no DSAs. Sequential transplant biopsies showed grade 2A rejection ($i_1t_1v_1$) on 30/11/2023 which was treated with pulse IV steroids and persistent borderline rejection ($i_1t_1v_0$) on 05/12/2023 which was treated with additional ATG (x3 doses). At 3-months post-transplant, she has good graft function (Cr 137umol/L) with no features of rejection on protocol biopsy. This case highlights a potential flaw in the recently implemented virtual crossmatch system in which historical SAG testing did not accurately reflect the recipient's current immunological status or antibody profile at the time of kidney offer.

Table 1. Tissue Typing Results Timeline

DATE	cPRA	CROSSMATCH	DSA
16/11/2023 Initial kidney offer SAG dated 15/07/2023	**86%**	**Negative**	**Nil**
22/11/2023 Retrospective analysis SAG dated 08/11/2023	**99%**	**T-cell positive B-cell positive**	**A*24:02 (MFI 6284) A*24:03 (MFI 5752) B*38:01 (MFI 2346) DRB5*01:01 (MFI 2735)**
23/11/2023 SAG dated 23/11/2023 PLEX + IVIg commenced	**-**	**-**	**A*24:02 (MFI 584) A*24:03 (MFI 502) B*38:01 (MFI 999) DRB5*01:01 (MFI 1279)**
06/12/2023 SAG dated 06/12/2023	**-**	**-**	**Nil**

Abstract No. 111

IS THERE AN EDITORIAL GLASS CEILING? A GENDER-BASED CROSS-SECTIONAL ANALYSIS OF NEPHROLOGY AND TRANSPLANTATION JOURNALS

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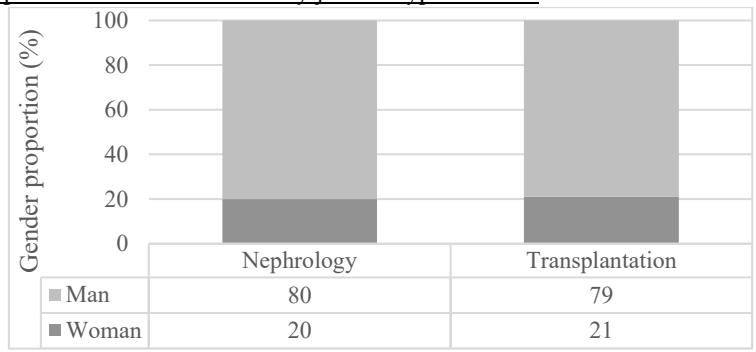
Aim: Editors in Chief (EiC) play a key role in academic medicine, often shaping research agendas. Women are historically under-represented in EiC roles in medicine. The aim of this study was to examine gender representation amongst EiC in transplantation and nephrology journals.

Methods: A cross sectional analysis of Nephrology and Transplantation journals as listed by Journal Citation Reports (JCR) was performed using binary gender classification (woman or man). The primary outcome was the proportion of women EiC. Secondary outcome was the proportion of women EiC based on journal topic, location and metrics. Descriptive statistics were used. Gender differences were compared using students t-test or Fisher's exact test.

Results: 73 journals met inclusion criteria. Of these 21 (29%) were transplantation journals, 51(70%) were nephrology journals. Of these, 67 (92%) had single EiC. Of the 79 total EiC, 16 (20%) were women ($p<0.001$). Transplantation and nephrology journals had 21% and 20% women EiC, respectively ($p=0.93$) (Figure 1). Journals published in North America had 6 (25%) women, compared to 8 (20%) in Western Europe and no women EiC in Asia -Pacific ($p=0.61$). There was no statistically significant difference in journal impact factor ($p= 0.71$) or quartile ($p=0.59$) by EiC gender.

Conclusions: We found a significant disparity in gender representation in EiC in nephrology and transplantation journals, with men holding 80% of all EiC positions. These findings, amongst growing evidence of underrepresentation of women, highlight a need for targeted efforts to promote gender equity in academic medicine.

Figure 1: Gender proportion of editors in chief by journal type in 2023.



Abstract No. 112

A DECADE OF KIDNEY TRANSPLANT BIOPSY: ADEQUACY, COMPLICATIONS AND DIAGNOSES

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Background: Diagnostic kidney biopsy is essential in the workup of allograft dysfunction. The role of protocol biopsy (in the absence of dysfunction) remains controversial. Here we report the characteristics of transplant biopsies over 10-years.

Methods: We reviewed all transplant biopsies attempted between January 2013 and January 2024 from a single centre. Data was extracted from a transplant database, maintained on site. Missing data was extracted from electronic medical records.

Results: There were 384 transplant biopsies of which 203 (53%) were protocol. Biopsy numbers were expectedly lower in 2020-2022, affected by COVID-19, however the proportion of protocol to indication biopsies was similar between years (range 44-62%). 82% of samples were adequate by BANFF criteria, unaffected by year, and the mean glomeruli sampled per biopsy-core was 12. The most common complications were macroscopic haematuria (3.9%) and symptomatic haematoma (1.6%). Arterio-venous malformation occurred in three patients (0.8%). Compared to indication biopsies, protocol biopsies were more likely to be normal or show only mild/moderate interstitial-fibrosis and tubular-atrophy (61% vs. 30%, $p<0.0001$). Protocol biopsies had a lower incidence of transplant specific diagnoses (acute-TCMR 2.5% vs. 6.6%, chronic-TCMR 1% vs. 2.2%, acute-ABMR 0% vs. 2.8%, chronic-ABMR 0% vs. 4.4% and BK nephropathy 3% vs. 5.5%). The most common pathological finding was hypertensive change (12% protocol vs. 10% indication).

Conclusions: Over time, the proportion of protocol to indication biopsies was stable. Most protocol biopsies were normal, and less likely to show transplant specific pathology. Above 80% of biopsies were adequate, unaffected by year, and complications were rare.

Abstract No. 113

CHALLENGES AND MANAGEMENT APPROACH TO ENDOVASCULAR ANEURYSM REPAIR AND KIDNEY TRANSPLANTATION: A SYSTEMATIC REVIEW

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Aims. Endovascular aortic aneurysm repair (EVAR) is considered the gold standard in the management of abdominal aortic aneurysms (AAA). The presence of an AAA in a kidney transplant patient or transplant candidate patient, presents a clinical challenge given the risk of complications to either the kidney transplant or endograft respectively. This qualitative systematic review discusses the challenges and management strategies in performing EVAR after kidney transplantation, and kidney transplantation after EVAR, for patients with concurrent AAA and end-stage kidney disease.

Methodology. Previous research relating to kidney transplantation in the setting of EVAR, and EVAR in the setting of kidney transplantation, was sought using databases of published literature, guidelines, and other online material. Studies of any methodological design since 2000 were included and critically appraised for potential bias. Discussions regarding management challenges and feasibility were qualitatively reviewed and collated thematically.

Results. Existing research on this topic is limited to case studies, case series, and small observational studies with no previous reviews of challenges or outcomes in this setting. EVAR after kidney transplantation may lead to arterial access complications and threatened transplant perfusion or nephropathy due to contrast. Comparatively, kidney transplantation after endovascular aneurysm repair may present anastomotic challenges and may precipitate endoleak or endograft complications.

Conclusions. EVAR and kidney transplantation are feasible in combination; however, specific risks should be anticipated depending on the order of treatment.

Abstract No. 114

CLINICAL OUTCOMES OF COVID-19 INFECTION IN SOUTH AUSTRALIAN LUNG TRANSPLANT SATELLITE CENTRE COHORT

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Aim: COVID-19 infection in lung transplant recipients has a high reported mortality due to patient comorbidities and immunosuppression. The South Australian Lung Transplant Unit (SALTU) implemented a pro-active, structured approach to preventing and managing COVID-19 based on international evidence adapted to the local satellite centre setting. This study reviews clinical outcomes of SALTU recipients with COVID-19 to guide future practice.

Methods: Data parameters for acute and longitudinal follow up were determined prior to commencement of this single-centre, observational study. Data from electronic medical records were analysed periodically to inform practice. The SALTU COVID-19 protocol included written information regarding preventive measures, establishment of a dedicated COVID-19 team for clinical management, building continuity, trust and treatment algorithms based on international experience adapted for SA cohort.

Results: 74 LT recipients (60% of cohort) contracted COVID-19 in the analysis period between March 2022 and May 2023. The median age of patients was 55 years and 79% had at least 3 prior COVID-19 vaccinations. 87% were symptomatic at presentation with lethargy and cough most frequently reported. The most common complications were pneumonitis, bacterial pneumonia and acute kidney injury. There were no deaths directly attributable to COVID-19. Pulmonary function tests 6 weeks post-COVID infection showed no significant decline.

Conclusion: This retrospective analysis demonstrates achievement of good clinical outcomes in severely immunocompromised patients can be achieved with targeted, dynamic treatment protocols, best medical therapy and strong adherence from the patient cohort. This model can potentially be applied to similarly high-risk cohorts in future settings.

Abstract No. 115

GENDER DISPARITIES IN LIVE KIDNEY DONATION- A SINGLE CENTRE RETROSPECTIVE ANALYSIS

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Background: Gender disparities in kidney transplantation access have been well described. In Australia and worldwide, women are less likely to be waitlisted for deceased donor transplantation but represent over 60% of live kidney donors.

Aim: To compare patients referred for live kidney donation assessment by gender.

Method: A retrospective review of all patients referred as potential kidney donors at a tertiary centre between 2000-2023. Demographic data and outcomes were collected from electronic medical records, and analysed using RED Cap.

Results: 143/196 patients were referred were included in the analysis. 84/143 (59%) proceeded to kidney donation (female=49; 58%). . Female donors were more often spouse or parent of the recipient. (Table 1). Donor medical ineligibility was the most common reason for not proceeding to donation for both genders but male donors were more likely to be surgically ineligible or lost to follow- up (Table 2).

Conclusion: There are trends attributable to gender in live donation and the reasons for non-progression to kidney donation. Reasons for this need further evaluation.

TABLE 1. RELATIONSHIP OF DONORS TO RECIPIENTS

	FEMALE	MALE	p value
INITIAL REFERRALS n (%)	**n = 77 (53.8%)**	**n = 66 (46.2%)**	
Spouse or Partner	30 (38.9)	19 (28.8)	NS
Parent	15 (19.5)	9 (13.6)	NS
Other relative	23 (29.9)	22 (33.3)	NS
Non-relative	8 (10.3)	13 (19.9)	NS
Data not available	1 (1.3)	3 (4.5)	
PROCEEDED TO DONATION n (%)	**n = 49 (58.3%)**	**n =35(53%%)**	
Spouse or Partner	22 (26.2)	9 (10.7)	0.06
Parent	12 (14.3)	5 (7.1)	NS
Other relative	12 (14.3)	15 (17.9)	NS
Non-relative	3 (3.6)	4 (4.8)	NS
Data not available	0 (0)	1 (1.2)	NS

TABLE 2. REASONS FOR NON-PROGRESSION TO KIDNEY DONATION

Total donated -	FEMALE N=28	MALE N = 31	P value
MEDICAL INELIGIBILITY % (n)	18 (29.5)	11 (35.5)	NS
RECIPIENT FACTOR % (n)	6 (9.8)	6 (19.3)	NS
LOST TO FOLLOW UP % (n)	1 (1.6)	7 (22.9)	0.06
SURGICAL INELIGIBILITY % (n)	0 (0.0)	4 (12.9)	NS
DONOR DECISION % (n)	4 (6.6)	1 (3.2)	NS
PSYCHO-SOCIAL FACTORS % (n)	0 (0.0)	2 (6.5)	NS

Abstract No. 116

RECTUS SHEATH PATCH. A NOVEL SURGICAL TECHNIQUE IN THE REPAIR OF ISOLATED RENAL PELVIS NECROSIS IN A TRANSPLANTED KIDNEY

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Focal necrosis of the renal pelvis in a transplanted kidney is a rare but often morbid complication that may lead to graft loss. Given the scarcity of donor organs, all attempts are made to preserve the graft. Currently there is no standard surgical technique for reconstruction or repair of isolated renal pelvic necrosis. We present the case of a 70-year-old male with end stage kidney disease who underwent renal transplantation. The patient developed a day three post operative urine leak. During surgical exploration a focal area of pelvic necrosis was observed without evidence of proximal or distal ureteric involvement. Given the excellent function of the renal allograft a novel surgical technique was successfully used to repair the necrotic defect. Reconstruction of the renal pelvis was performed using an avascular rectus sheath patch. The patch was secured over the open pelvis following necrotic tissue debridement (Fig 1). The patient made a successful recovery with complete resolution of urine leak. A 6 week post operative retrograde pyelogram confirmed no ongoing urine leak, a baseline creatinine of 131 μmol/L was achieved and the patient discharged from the acute renal transplant unit.

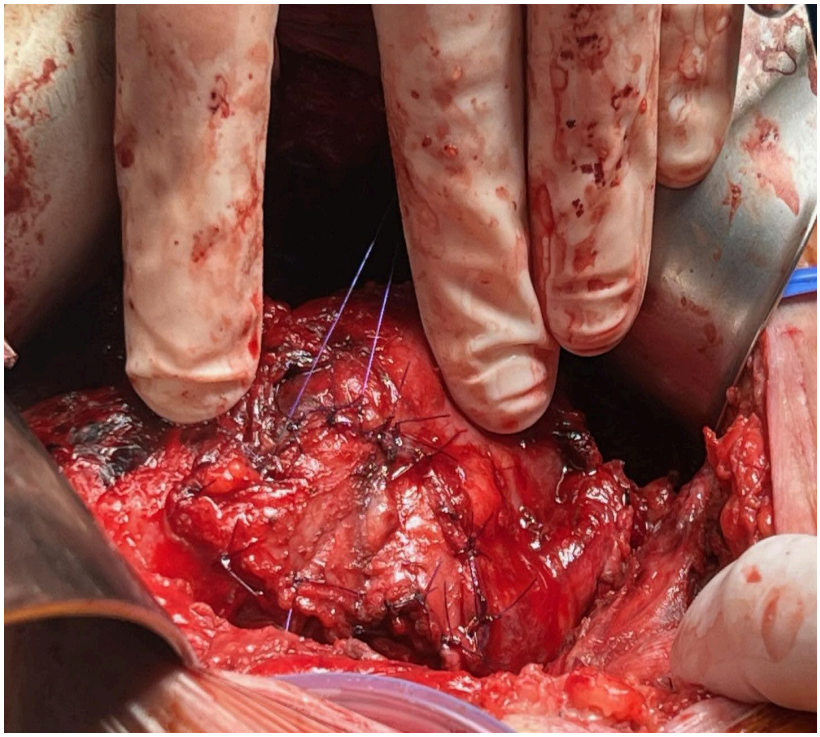

Figure 1. Intraoperative photo showing rectus sheath fascia patched over the pelvic defect, secured with 4.0 PDS interrupted sutures.

Abstract No. 117

EARLY PTLD IN THE NATIVE LUNG OF A SINGLE LUNG TRANSPLANT RECIPIENT: A CASE REPORT

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BACKGROUND Post Transplant Lymphoproliferative Disorders (PTLD) are serious complications in lung transplant recipients and are frequently Epstein-Barr Virus (EBV) related.[1,2] PTLD occurs more commonly in lung transplant recipients than other solid organ transplants (incidence 2.5-8%).[1,3] The allograft is the primary site of involvement in the majority (71-89%) of cases of PTLD.[3,4] However we report a case of early PTLD occurring in the native lung of a single lung transplant recipient.

CASE REPORT A 49-year old female received a right single lung transplant for progressive interstitial lung disease with pulmonary hypertension (EBV serostatus D-/R-,CMV serostatus D-/R+).

8-months post-transplant, multiple new intrapulmonary lesions were seen in the native lung, the largest measuring 4.3x4.1x4.3cm. Transthoracic core biopsy demonstrated EBV-positive diffuse large B-cell lymphoma, consistent with monomorphic PTLD. PET scan demonstrated intense uptake in the lung lesions (SUV up to 16.3) with lesions of moderate-intense uptake in the pericardium also identified. No uptake was identified in the transplant lung.

Initial treatment consisted of four doses of weekly rituximab, reduced immunosuppression, and transition from valganciclovir to valaciclovir. Subsequent PET scans following rituximab monotherapy demonstrated a mixed response with improvement in the lung and most pericardial lesions but significant progression in size and intensity of two pericardial lesions. Given the progressive disease on interim PET scan, R-CHOP chemotherapy was commenced aiming for four cycles.

CONCLUSION We report on the unusual case of native-lung localisation of early PTLD in a lung transplant recipient that demonstrated disease progression despite immunosuppression reduction and rituximab monotherapy, requiring treatment escalation to R-CHOP therapy.

Figure 1. Coronal PET imaging from diagnosis of PTLD in the native lung (left) compared to on completion of four weeks of Rituximab therapy (right), demonstrating improvement in lung lesions but progression in the pericardial lesions.

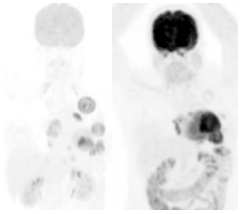
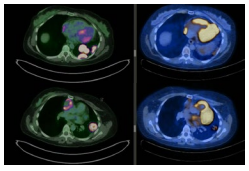


Figure 2. PET imaging from diagnosis of PTLD in the native lung (left) compared to on completion of four weeks of Rituximab therapy (right), demonstrating improvement in lung lesions but progression in the pericardial lesions.



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Abstract No. 118

TRANSCRIPTOMICS IN BK POLYOMAVIRUS ASSOCIATED NEPHROPATHY: A SCOPING REVIEW

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Aims: BK polyomavirus (BKPyV) is the most common viral infection experienced by kidney transplant recipients. It reactivates with immunosuppressive therapies and can lead to the development of BKPyV-associated nephropathy (BKPyVAN). The purpose of this scoping review was to assess the use of transcriptomic platforms to profile BKPyVAN in kidney transplant recipients.

Methods: Medline and Embase were searched with the following search strategy: "BK virus" or "BK polyomavirus" or "Polyomavirus" AND "Kidney transplant" or "Nephritis" or "Nephropathy" AND "Gene expression" or "Transcriptomics" or "mRNA". Papers evaluating the mRNA gene expression profile of BKPyVAN using renal allograft tissue were included.

Results: The search strategy identified 352 publications (248 EMBASE and 104 MEDLINE), and after removal of duplicates (92) and abstract/full-text screening, 11 eligible studies were identified. Of these, 7 were original transcriptomic studies and 4 were bioinformatic studies containing BKPyVAN patients. The gene expression patterns identified in BKPyVAN and T cell mediated rejection have considerable overlap, however viral transcripts may add to highly specific detection of BKPyVAN. The comparison of kidney tissue gene expression in BKPyVAN versus stable transplant recipients unveiled dysregulated expression of innate immune pathways (IL-1β/ inflammasome/ TLRs) and pro-inflammatory pathways (chemokine-, MAPK-, Interferon γ-, T cell- and NFκB-signalling pathways).

Conclusions: This scoping review has demonstrated the potential of transcriptomic profiling in the discovery of novel biomarkers, pathological mechanisms and treatment targets for BKPyVAN. Further studies are needed given the lack of original transcriptomic research that is demonstrated.

Abstract No. 119

BOILING WATER ATP TISSUE EXTRACTION: A NOVEL BENCHMARKING TECHNIQUE FOR ORGAN VIABILITY ASSESSMENT

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Aims: To investigate the feasibility of the boiling water ATP extraction method on animal tissue.

Methods: Tissue samples from machine-perfused and static cold-stored porcine livers and kidneys were obtained using an 18-gauge biopsy needle gun. The length of the cores was measured, and the volume was calculated using πdl/4. The samples were snap-frozen using liquid nitrogen and stored at -80°C. Tissue samples were submerged in boiling water after thawing and lysed using an ultrasound homogeniser. The lysed solution was centrifuged for 5 minutes at 12000rpm at 4°C. Bioluminescence was measured using a firefly luciferase solution and a luminometer. ATP Concentration per unit volume was calculated as a mean of 3 assays from a lysed sample.

Results: Stable results and reasonable uncertainty were observed. Isothermic machine-perfused samples decreased after an anoxic period post-retrieval and then increased until the end of preservation whereas SCS samples had decreasing ATP levels throughout preservation, in keeping with physiological hypotheses. SCS samples decreased from a mean

Conclusions: The feasibility of a novel ATP extraction method was displayed in animal tissue. ATP measurement can be done simultaneously with organ preservation and as such may be used for real-time assessment of organ viability.

Abstract No. 120

MANAGING GANCICLOVIR UL97 RESISTANT CYTOMEGALOVIRUS DISEASE AND RECURRENT CELLULAR REJECTION IN A RENAL TRANSPLANT RECIPIENT

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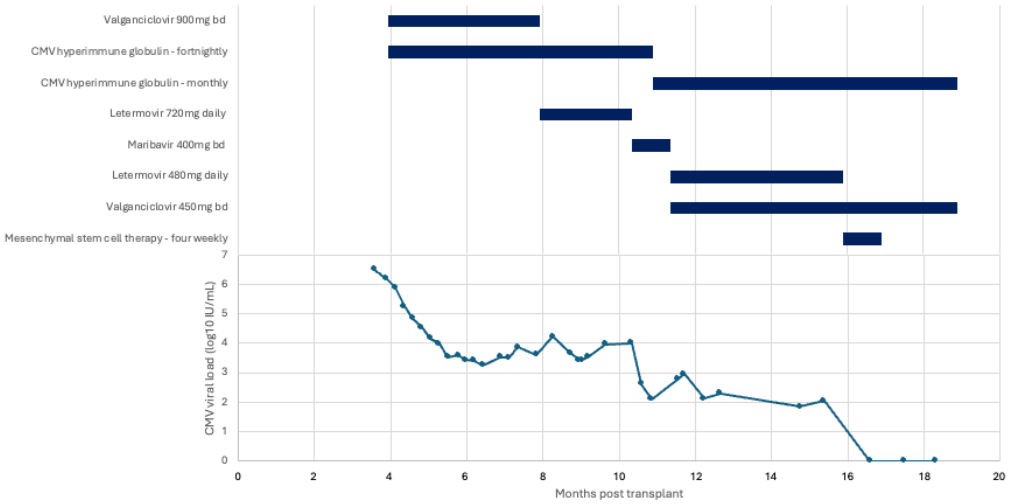
Introduction: CMV infection after kidney transplant carries significant risk of morbidity and allograft failure.
Case: 21 yo male on haemodialysis for presumed FSGS underwent deceased donor renal transplant; 6/6 mismatch, CMV (D+R-) with standard induction, triple immunosuppression and appropriately dosed prophylactic valganciclovir (450mg daily for creatinine clearance 40-50ml/min). He presented with clinical viral syndrome, graft dysfunction and CMV viremia (6.5 $\log_{10}$IU/mL) with ganciclovir UL97 resistance mutation 3 months (3M) post transplant. Transplant biopsy confirmed CMV disease with viral cytopathic change, positive CMV immunohistochemistry in endothelial cells and mononuclear interstitial inflammatory cells. Treatment and CMV viral load is summarised in Figure 1, noting plateau in CMV viral load (~4 $\log_{10}$IU/mL) despite initial valganciclovir-based treatment and subsequent high dose letermovir. Repeat biopsy at 6M showed resolution of CMV nephritis but new T cell mediated rejection (TCMR). Viral load reduced to 2 $\log_{10}$IU/mL on maribavir for one month (ongoing therapy limited due to cost). Treatment was then maintained with dual valganciclovir and letermovir and later valganciclovir monotherapy. Viral load was undetectable at 17M. QuantiFERON-CMV assay showed no evidence of cell mediated immunity at any timepoint. Due to concurrent refractory TCMR, he received methylprednisolone, ATG and subsequently compassionate mesenchymal stem cell therapy, the latter temporally coinciding with the eventual suppression of CMV viral load. Unfortunately, the case was also complicated by FSGS recurrence and calcineurin inhibitor associated thrombotic microangiopathy.
Conclusion: CMV D+R- transplant with resistant CMV nephritis and refractory TCMR requiring multiple anti-viral combinations.

Figure 1. CMV viral load and associated medication regimen over time.



Abstract No. 121

"ETHICAL DILEMMA IN KIDNEY TRANSPLANT" ARE WE DISADVANTAGING SMOKERS BY EXCLUDING THEM FROM KIDNEY TRANSPLANTATION?

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Background: Studies highlight the detrimental effects of smoking on kidney transplant (KT) outcomes. Most guidelines advocate the cessation of smoking prior to KT. Nevertheless, nicotine addiction is a complex and multifaceted condition.

Methods: We undertook a retrospective observational study of dialysis patients in HNELHD 2013-2023 <65 years old and assessed but not listed for KT. We examined the reasons for non-transplant listing and divided them into two categories, smoking versus others (comorbidities, patient preference, cancer). We compared the categories in terms of demography, comorbidities and dialysis modality. We also conducted a survey of KT units across Australia and NZ regarding their policies toward smoking.

Results: We reviewed the records of 333 patients (142 female), 89 of whom were smokers. Patients not listed due to smoking were less co-morbid than those rejected for another reason (83% vs 40% having ≤1 comorbid condition, $p<0.001$). Patients rejected due to smoking were younger than those rejected for other reasons (47.8 vs 52.1, $p=0.007$). There was no difference between the 2 groups in terms of sex or dialysis modality. All the acute kidney transplant units (18) were surveyed (response rate 100%). 72% of units don't list current smokers for KT.

Conclusion: Patients not listed for KT due to smoking are generally younger and less comorbid than those not listed for other reasons. Our survey shows variation in practice between units. As smoking is more prevalent in marginalised communities not listing these patients for KT may be an equity of access to treatment issue.

Abstract No. 122

A RETROSPECTIVE REVIEW: UTILITY OF RADIOLABELLED WHITE CELL SCANS IN DETECTING OCCULT INFECTIONS IN RENAL TRANSPLANT RECIPIENTS

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Aims: Infections are a common cause of morbidity and mortality in renal transplant recipients. It is not often where a source cannot be isolated. Pyrexia of unknown origin in this cohort of patients is a diagnostic challenge. In such cases, white cell (WC) labelled scans can be performed to locate an occult septic focus. This retrospective review aims to determine the utility of this investigation to detect occult graft pyelonephritis.

Methods: Retrospective review over a 23-year period (2000-2023) in a single renal transplant institution. Renal transplant recipients who underwent a WC labelled scan to isolate a source of sepsis were included. An in-depth chart review of all cases was performed.

Results: 15 patients over this period had a WC labelled scan to detect a focus of sepsis. 9 (60%) cases reported no source of sepsis, 2 detected bowel infections, 1 detected an abscess in the femoral canal, 1 sacroiliac joint infection, 1 infected cyst in native polycystic kidney and 1 showed diffuse mild uptake in the transplanted kidney. The case with diffuse uptake in the transplanted kidney was not correlated to the clinical picture and was deemed to be physiological uptake in a subsequent radiology meeting.

Conclusions: White cell labelled scans can be beneficial in detecting infections however do not have a specific benefit in detecting occult renal transplant graft pyelonephritis.

President's Report 2024

It is my pleasure to provide the latest President's report and provide an update on recent and upcoming events.

Last year, under the exceptional leadership of Prof Helen Pilmore, members of TSANZ approved a restructure of the Society. On the 31st of August 2023, we went from being an incorporated association (since 1982) to a company limited by guarantee (CLG) registered under the *Corporations Act*.

This allowed us to apply to become a health promotion charity, and from March 2024 (backdated to 31st of August 2023) TSANZ was accepted for registration as a charity by the Australian Charities and Not-for-profits Commission. As a health promotion charity TSANZ is permitted taxation benefits including eligibility to receive tax deductible donations. The next step is to apply to register as a deductible gift recipient (DGR), and we will ask members to approve changes to the constitution to allow this at the AGM during the upcoming June ASM.

One final important request to members, if you could please return the signed ***Member Registration Consent*** form as it confirms you becoming a member of the company and agreement to guarantee to contribute up to a maximum of $20 to the assets of the Company (if it is wound up) and to be bound by the constitution.

Many thanks to everyone for your understanding and support as we navigate these restructures, which I think will position the Society very well for the future. I am also grateful to Sarah Johnson of Macpherson Kelley who has assisted us, and to all members of the Board for their help and support, and the outstanding administrative team in their amazing efforts to facilitate these changes.

42nd Annual Scientific Meeting:
From the 15th-18th June we will hold our ASM at the Melbourne Convention centre. Steadfastly and skilfully led by the Chairs of SPEC Dr Lucy Sullivan and A/Prof Wai Lim, and expertly convened this year by Dr Matthew Sypek and Dr Miranda Paraskeva. We have brilliant local and international invited speakers, including Dr Carole Guillonneau, Prof Alexandre Loupy and Prof Gabriel Oniscu.

We are again holding the Women in Transplantation Session (partnering with TTS), with presentations from Dr Gomathy Narasimhan, a Liver and Kidney Transplant Surgeon from Chennai, India, and the Honourable Federal Assistant Minister for Health and Aged Care Ged Kearney MP.

There are a few exciting changes to the ASM line up this year. On Saturday the 15th of June, as part of a new initiative to deliver first class educational sessions, we are running a day entitled, ***Frontiers and Challenges in Organ Transplantation*** (FACT). Essentially a renamed and reframed combined post graduate course and masterclass. A full day of engaging sessions for all transplant clinicians, scientists, and researchers. Featuring cutting edge updates in aspects of immunology through to clinical conundrums, including contemporary approaches to transplant management, immunosuppression, and infectious sequalae. This has day been expertly crafted by Dr Melanie Wyld and Dr Harry Robertson.

On Sunday the 16th, we are holding dedicated ***Solid Organ-specific Transplant Symposia*** (SOTS) for cardiothoracic, liver-intestinal (15th and 16th), and kidney/pancreas-islet groups; these will be led by the respective TSANZ advisory committee chairs, providing a forum for in depth discussions, updates and debate on broad ranging topics of specific interest to each subspecialty. Additionally, we have the Mark Cocks Patient Forum, "Back to Life, Returning to work and activity post-transplant," generously sponsored by Transplant Australia, and the prestigious Ian McKenzie Award lecture.

I am immensely grateful for the significant amount of work and expertise that all our conveners and members of SPEC have put into organising these meetings, particularly given the new format. We hope that these pre-meeting forums will provide more focused and relevant education updates with organ specific nuance. We look forward to welcoming to the ASM and would be keen for any feedback.
We are also thrilled that the Transplant Nurses Association are holding their national conference "Better Together" at the Melbourne Convention centre on Friday the 14th of June. This co-location of our conferences is another welcomed step towards continued strengthening of ties between TNA and TSANZ.

We are extremely grateful to and appreciative of our sponsors, who provide essential support to TSANZ and the ASM. Including our major sponsors: Astellas, ThermoFisher Scientific, and XVIVO. As well as other supporters; Abacus Dx, Abbott, Alexion, AstraZeneca, CSL, GSK, Immulab, Kidney Health Australia, Lungitude, Novartis, the Organ and Tissue Authority (OTA); Pharmacor; Stark Med, Takeda, Transplant Australia, and The Transplantation Society (TTS-Women in Transplant).

TSANZ Projects
With greatly appreciated support from OTA, TSANZ runs many projects and working groups to advance our common goals. Some of these include:
Enhancing Clinical Best Practice Guidelines and Procedures: This project continues to make great progress under the leadership of Clinical Project Manager Emily Larkins. A defined and robust process for the oversight, maintenance and promulgation of the Guidelines has been established, in addition, advisory panels have been set up to engage stakeholders. The TSANZ Clinical Guidelines for Organ Transplantation from Deceased Donors, version 1.12 was released in March 2024. Areas of focus for 2024 include revision of guideline content around Hep C donors and inclusion of Uterine Transplantation. Another fantastic initiative, driven by Emily, has been the development of a new TSANZ Clinical Guideline Webpage and mobile app, further improving and extending accessibility of these working guidelines.

Virtual Cross Match (VXM) Working Group: Australia has efficiently and smoothly transitioned to VXM thanks to this group led by A/Prof Ross Francis, Rhonda Holdsworth and Narelle Watson. The group met for the last time on Thursday 7th of December 2023, and I am very grateful to all involved for their dedication and hard work, which has resulted in a paradigm shift in our approach to cross matching for solid organ transplantation. A detailed and helpful National Histocompatibility Assessment Guideline for Solid Organ Transplantation has subsequently been released in April 2024, and is housed on the "additional guidelines" page of the TSANZ website.

The Deceased Donor Kidney Allocation Algorithm Review: This work is ongoing, skillfully driven and navigated by Sarah White as Project Manager, engaging a wide range of diverse stakeholders and deftly coordinating the approach to devise a more equitable, national, functional and nuanced algorithm. In addition, the group are focused on developing a business case to fund the build, testing, and launch of changes in OrganMatch, establishing governance processes for system monitoring and evaluation, and continuing strong communications with stakeholders.

Living Kidney Donation Consultative Forum: TSANZ and ANZSN collaborated in an important project aimed at understanding the barriers and seeking solutions to optimise access and outcomes in Living Donor Transplantation. Cognisant of and learning from the successes in this area in New Zealand, the group was expertly led by Dr Melanie Wyld and Dr Christine Russell. Two separate consultative forums (one for clinicians and one for consumers) were held. Specific recommendations arising included: i) Developing national educational resources and a dedicated website for living kidney donation, ii) Investing in public education and awareness, iii) Establishing national living donor guidelines. There is much need for ongoing efforts in this area, and support to deliver on the initial recommendations is paramount.

Adolescent and Young Adult Transplant Working Group: This group has been chaired by Dr Rachael Harry and represents another important initiative to address inequity and to improve outcomes in this vulnerable group. We look forward to the initiatives and improvements I am sure this group will deliver. I would like to express our sincere thanks to the Organ and Tissue Authority for their significant support, engagement and funding contributions to these important projects. I look forward to continuing the strong and mutually beneficial relationship that TSANZ enjoys with OTA on many fronts and am appreciative of all the hard work and dedication displayed by all individuals involved.

National Indigenous Kidney Transplantation Taskforce (NIKTT): This remains an incredibly important initiative chaired expertly by Prof Stephen McDonald and A/Prof Jaqui Hughes, that as the NIKKT Position Statement attests, continues to build on strategic efforts by Aboriginal and Torres Strait Islander peoples to advance First Nation's peoples' rights to optimal health and wellbeing through equitable and accessible kidney transplantation. Many people have been involved in this work, in particular I would also like to acknowledge the driving forces of Katie Cundale, Senior Project Officer and Kelli Owen, National Community Engagement Coordinator, both have been fundamental to the initiative's successes.
The Taskforce has been successful in obtaining bridging funding from the Commonwealth Department of Health and Aged Care, ending 30th January 2025. However, substantive and ongoing funding is needed to continue this important work to promote ongoing improvements to access transplant services for Aboriginal and Torres Strait Island people and reduce the inequities and barriers that currently exist. Currently NIKKT is focused on establishing a data dashboard through ANZDATA, hosting a second Transplantation Equity conference, supporting Indigenous Reference Groups at transplantation units, and developing a plan for a consumer peak body.

Thank you
There are so many individuals who contributed greatly to the Society, many have done so over many years, almost all has been voluntary, and always above and beyond expected. Without this support TSANZ would not be the Society it is today, and I am incredibly grateful.

I would like to thank all members of the TSANZ organ specific and other advisory committees, bringing together expert craft groups and contributing significantly across all aspects of the Society. Special thanks to the current and immediate past chairs of the advisory committees; including Dr Angeline Leet, who has stepped down and current chair Dr George Javorsky (Cardiac), Dr Mark Connellan (Co-Chair, DSDC) who has stepped down and current Co-Chair Dr Animesh Singla, Nigel Palk (Co-Chair DSDC), Prof Robert Jones (Liver & Intestinal), Dr David Darley (Lung), Dr Nicholas Larkins (Paediatric), Prof Natasha Rogers (Pancreas & Islet) and A/Prof Ross Francis (Renal) and Dr Sharon Ford (Vascular Composite Allograft). Additionally, we recently introduced the Tissue Typing Advisory Committee, to provide advice around histocompatibility and immunogenetics in transplantation, co-chaired by Prof Rob Carroll and Rhonda Holdsworth. The extensive work and contributions from these groups are highlighted in A/Prof N Isbel's report.

I would also like to make a special mention of our reinvigorated Early Career Committee (ECC), chaired by Drs Georgie Irish and Griffith Perkins. Thanks to all who have been involved over the years, who through this committee have brought together early career researchers, clinicians, and health care professionals in transplantation. The ECC group is engaging in many of the SPEC/ASM activities, the Grand Round schedule, and provides a healthy environment and pipeline for our future leaders.

TSANZ council is now the TSANZ Board and is made up of individuals who I greatly admire and who contribute widely; my thanks to Dr Tanya McWilliams, Mr Paul Robertson, Dr Handoo Ree, Dr Lucy Sullivan, Dr Animesh Singla, Dr Avik Majumdar, A/Prof Bronwyn Levvey and Prof Angela Webster. My sincere thanks specifically also goes to the TSANZ Executive: A/Prof Nikky Isbel (President Elect),

A/Prof Kavitha Muthiah (Secretary) and A/Prof Joshua Kausman (Treasurer) who have been incredibly supportive and provided much wise council over a very broad range of topics and initiatives.

As always, the people that really hold us altogether are our administrative staff, including Nieves Piaggio, our tireless Executive Officer, who has skilfully navigated and supported us through all of the restructure processes, on top of her usual extensive organisational roles; Kim Rawson our amazing senior project officer who expertly manages the complexities of stakeholder engagements and supporting and guiding our advisory committees, projects, working groups and more; Emily Larkins our wonderful Project Manager for the TSANZ Guidelines, who has managed to distil complex issues, navigate large groups of stakeholders and produce world-class Guidelines, as well as providing support in so many other areas; and Sarah White whose expertise has been instrumental in leading the review of the kidney allocation algorithm, showcasing her exceptional ability to navigate complex topics with professionalism and precision. I would also like to thank Roslyn Davies who resigned at the end of last year, for all her amazing work as our administrative officer, and we wish her well. Finally, I would like to introduce Anne Wiseman, who joined us this year to take on the role of administrative officer, she brings with her a wealth of knowledge, a keen sense of commitment and been a great support to all the team. None of what TSANZ achieves would be possible without these people.

Thank you to all TSANZ members,
Professor Kate Wyburn

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The **Annual General Meeting** of the Transplantation Society of Australia and New Zealand Inc. held on Monday June 19, 2023 at the Brisbane Convention Centre, Brisbane in the Boulevard Auditorium at 5.00pm.

Present: 53 members of the Society establishing a quorum (ten per cent of 481 members entitled to vote – Full 404; Honorary 12; Student 65) were present at the meeting, which was chaired by the President, Professor Helen Pilmore

MINUTES

1. **Apologies**
   None noted

2. **The minutes** of the Annual General Meeting held on *20 June 2022* were confirmed at the Special General Meeting (SGM) held on Thursday, 11 May 2023

3. **There was no business arising from the minutes**

4. **President's Report** – Professor Helen Pilmore
   outlined the stable and good state of TSANZ. She thanked the members of council, with a special mention to the executive committee. Speaks to the success of the meeting, including the HLA Day. Thanked the OTA and the productive relationship between TSANZ and OTA. Thanks to outgoing council members Fiona Mackie and Phil Clayton and the TSANZ office team.

   Informed all in attendance of the **2023 Election Results** –
   Incoming councilors are Joshua Kausman, Avik Majumdar and Animesh Singla.

5. **Treasurer's Report** – A/Professor Nicole Isbel
   encourages all to read the full financial report.

   Financial Report of 31st December 2022 Proposer:

   Nikky Isbel

   Seconder: Helen Pilmore

   All in attendance concurred.

   Summary and year ahead - Mentions the small loss of approx. $4,000 due to the continuing legal costs to change from an association to a Company Limited by Guarantee. However, she felt that 2023 should finish in profit. Thanked sponsors and OTA for financial support.

   Outlines investment strategy in ethical investments and notes that she will need to review some costs. Advises that moving forward, the TSANZ Board will establish a finance committee which will include a person with a finance background. Advises that once TSANZ is a charity, we will be a donatable organization.

6. **Secretary's Report** – A/Professor Fiona Mackie
Confirms that

- **Change of registration**
- **Change of Name**
- **Adoption of New Constitution**

were unanimously passed at the Special General Meeting held on Thursday May 11, 2023 Confirms that membership is healthy, and gender nears equity.

Details the need to contact all members re the consent form to become members under a CLG which, when signed, confirms that members will be bound and comply with the new constitution and also guarantee a maximum amount of $20 to the assets of the Company if it is wound up. Emphasizes the importance of completing, signing, and returning the form which includes a privacy statement.

Thanks "*Dream Team*" of TSANZ Executives, Council and admin staff.

7. **Report on Advisory Committees/Working Groups** - Professor Kate Wyburn
Speaks about the volume of work done by the Advisory Committees. Mentions the 2 new initiatives (Living Kidney Donation Consultative Forum and Adolescent and Young Adult Transplant Working Group). Thanks the chairs and members for all the work done by them.

8. **Scientific Program & Education Committee Report (SPEC)** - Dr Lucy Sullivan and Dr Wai Lim
Dr Sullivan updates members re SPEC committee activities. Thanks the convenors for their excellent work. Notes registration figures have been outstanding.

Speaks to the Early Career Researchers Committee (ECRC) changes in the committee and advises all to look out for the EOI for new ECRC members.

Summarises the initiatives for the next year and confirms that Grand Rounds will continue in 2023/24

Thanks the TSANZ Council and admin team for their support. Also thanks Wai for co- chairing SPEC.

9. **General Business**
Helen announces:

- 2024 ASM - Melbourne
- And SAVE THE DATE for TTS2026 - Sydney.

There being no more business the meeting is concluded at 17:28

Professor Kate Wyburn
TSANZ President

A/Professor Kavitha Muthiah
TSANZ Honorary Secretary