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# South African **RENAL** Congress **2022**

ICC, Durban  
26 - 29 May 2022

[www.sa-renalsociety.org](http://www.sa-renalsociety.org)  
[www.renalcaresoc.org](http://www.renalcaresoc.org)

**Abstract Book**



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# CONGRESS PROGRAMME

**THURSDAY, 26 MAY 2022**

	<b>ADULT CME 1– DAY 1 Histopathology Course VENUE: MR 22</b>	<b>ADULT CME 2– DAY 1 VENUE: MR 12</b>	<b>ADULT CME 3– DAY 1 Saving Young Lives (SYL)/SANS Critical Care Nephrology Workshop VENUE: HALL 3A</b>
	Chairpersons Indiran Naiker & Mpumelelo Msimang	Chairpersons Feziwe Bisiwe & Remi Adeniyi	Chairpersons Mignon McCulloch & Brett Cullis
09:00-09:15	Basic histology and laboratory practice <b>Wesam Ismail (Egypt)</b>	2020 KDIGO Clinical Practice Guideline on Glomerular Diseases: Highlights <b>Zaheera Cassimjee (SA)</b>	Welcome & Introduction <b>Mignon McCulloch &amp; Brett Cullis</b>
09:15-09:30			Crush injury and management <b>David Skinner</b>
09:30-09:45	HIV and kidney in the expanded ART era <b>Christie Esterhuysen (SA)</b>	Paediatric nephrology for the adult nephrologist <b>Rajendra Bhimma (SA)</b>	Fluid management in critically ill children <b>Mignon McCulloch (SA) and Martie Wege (SA)</b>
09:45-10:00			AKI in the critically ill COVID patient <b>Nicola Wearne (SA)</b>
10:00-10:15	The pathology of crescentic glomerulonephritis <b>Pulane Mosiane (SA)</b>	Membranous nephropathy: an update <b>Shoyab Wadee (SA)</b>	Timing of dialysis initiation and dosing in critically ill patients <b>Brett Cullis (SA)</b>
10:15-10:30			
10:30-10:45	Vascular and tubulointerstitial lesions <b>Christie Esterhuysen (SA)</b>	Lupus nephritis management: An update <b>Kwazi Ndlovu (SA)</b>	
10:45–11:00			
11:00-11:10	<b>COFFEE BREAK</b>	DASA Presentation	
11:10–11:15	<b>EXHIBITION HALL – HALL 2CDE</b>		
11:00-11:30	<b>SPONSORED BY NIPRO</b>		
	Chairpersons Priyesh Mody & Mpumelelo Msimang	Chairpersons Sudesh Hariparshad & Nomandla Madala	Chairpersons Mignon McCulloch & Brett Cullis
11:30-11:50	Diagnostic dilemmas in transplant pathology <b>Wesam Ismail (Egypt)</b>	Vaccination and chronic kidney disease <b>Mduduzi Mashabane (SA)</b>	Drugs and AKI <b>Nicola Wearne (SA)</b>
11:50-12:00			SLED as an alternative to CVVH <b>Nicola Wearne (SA)</b>
12:00–12:10	Lupus Nephritis histopathology <b>Pulane Mosiane (SA)</b>	Anaemia in chronic kidney disease: An update <b>Alain Assounga (SA)</b>	Debate – CVVHDF is the best modality for managing critically ill patients in ICU <b>Pro – David Skinner Con – Brett Cullis</b>
12:10-12:30			
12:30-13:00	COVID kidney pathology <b>Wesam Ismail (Egypt)</b>	Diabetes in chronic kidney disease <b>Malcolm Davies (SA)</b>	Practical approach to prescribing acute dialysis in children <b>Stefano Picca (Italy)</b>
13:00-14:00	<b>BOEHRINGER INGELHEIM LUNCH SYMPOSIUM MR 22 Brian Rayner (SA)</b>		
13:00-14:00	<b>LUNCH BREAK - EXHIBITION HALL – HALL 2CDE</b>		
	Chairpersons Yazied Chothia & Geoff Bihl	Chairpersons Zunaid Barday	<b>Rotate each group for 30 minutes</b>
14:00-14:30	The podocyte in glomerular disease <b>Agnes Fogo (USA)</b>	Vaccination in Kidney Transplantation <b>Feziwe Bisiwe (SA)</b>	PD for paediatrics – Manual and automated <b>Mignon McCulloch</b>
14:30-15:00	Heart failure in CKD <b>Kagiso Motse (SA)</b>	Evaluation and Management of Candidates for Kidney Transplantation: Update <b>Graham Paget (SA)</b>	Acute PD cases – prescribing and complication <b>Brett Cullis</b>
15:00-15:10		Mahogany Trust Presentation	

15:00–15:30 COFFEE BREAK - EXHIBITION HALL – HALL 2CDE – SPONSORED BY NIPRO			
	Chairpersons Malcolm Davies & Mduzuzi Mashabane	Chairpersons Alain Assounga	
15:30–16:00	Ethics Lecture: Vaccine Mandates <b>Prof Ames Dhai (SA)</b>	Hypertension: Update on evidence-based standards of care <b>Brian Rayner (SA)</b>	The ins and outs of CVVHD and IHD machine <b>Nicola Wearne &amp; Daniel Mveli</b>
16:00–16:15		Home dialysis: Is it the new normal? <b>Vakhtang Rekhviashvili (SA)</b>	Paeds dialysis cases <b>Stefano Picca</b>
16:15-16:30	Barriers to kidney transplantation <b>Nina Diana (SA)</b>	Long term complications of hypertensive disorders of pregnancy <b>Erika Jones (SA)</b>	
16:30-16:45			
16:45–17:05	ISN: Advancing kidney health worldwide. Together <b>Gloria Ashuntantang (Cameroon)</b>		
17:10		SANS EXCO MEETING (BY INVITE ONLY) VENUE: MR 12	RCSSA EXCO MEETING (BY INVITE ONLY) VENUE: HALL 3A

**FRIDAY, 27 MAY 2022**

	<b>ADULT CME 1 – DAY 2 VENUE HALL 3A</b>	<b>ADULT CME 2 – DAY 2 VENUE MR 12</b>	<b>PAEDIATRIC CME VENUE MR 22</b>
	Chairpersons Nina Diana & Reena Moodley	Chairpersons Nicoline Van Zyl and Zakaria Gangat	Chairpersons Mignon McCulloch & Daina Ruredzo
08:00-08:30	Placement and care of central venous catheters <b>Chetan Bhula (SA)</b>	Electrolytes and acid-base disorders <b>Razeen Davids (SA)</b>	Paeds hypertension guidelines <b>Joseph Flynn (USA)</b>
08:30-09:00	AV fistula and graft canulation techniques <b>Rajen Moodley (SA)</b>	Kidney disease associated with COVID <b>Nicola Wearne (SA)</b> <b>SPONSORED BY CIPLA</b>	Hypertension in SA <b>Bonisiwe Chauke Makamba/ Peter Nourse (SA)</b>
09:00-09:30	Early identification of the failing AV fistula <b>Mueen Saley (SA)</b>	Nutrition in CKD <b>Ehrard Bezuidenhout (SA)</b>	Renal tubular acidosis pearls <b>Detlef Böckenhauer (UK)</b>
09:30-09:50	Recorded case: Creation of HeRO graft. My experience <b>Vinesh Padayachy (SA)</b>	SA Renal Registry Annual Report <b>Razeen Davids (SA)</b>	Neuropathic bladders – how to fix them <b>Anne Wright (UK)</b>
09:50–10:00			
10:00-10:30	<b>COFFEE BREAK - EXHIBITION HALL – HALL 2CDE</b>		
	Chairpersons Wesley van Hougenhouck-Tulleken & Mark Padavattan	Chairpersons Saraladevi Naicker & Riaan Flocks	Chairpersons Patience Sigwadi & Rashinta Moodley
10:30-11:00	Training the 2030 nephrologist <b>Nicola Wearne (SA)</b> <b>SPONSORED BY CIPLA</b>	Predictive performance of eGFR equations <b>Nomandla Madala (SA)</b>	Renal transplants in kids <b>Steve Marks (UK)</b>
11:00-11:30	KDOQI Vascular Access Guidelines: 2019 Update <b>Tushar Vachharajani (USA)</b>	Measured versus Estimated GFR in Sub-Saharan Africa - findings from the African Research on Kidney Disease (ARK) Study <b>June Fabian (SA)</b>	Beginners guide to urodynamics <b>Jeanette Raad (SA)</b>
11:30-12:00	Local kidney care access and sustainability: private provider experience <b>Jenni Noble (SA)</b>	CKDu <b>Sudesh Hariparshad (SA)</b>	Audit of paediatric urodynamic service over 15yrs <b>Thembisile Mosalakatane (Botswana)</b>
12:10 – 13:20	<b>ASTELLAS MEDICAL LUNCH SYMPOSIUM VENUE: MR 12</b>		
	Quality Renal Care Landscape of CKD-Anaemia <b>Dr Sunil Bhandari (UK)</b>		
	CKD-Anaemia: Underlying Mechanism of Disease <b>Prof Nicola Wearne (SA)</b>		
12:00-13:30	<b>LUNCH BREAK - VENUE: EXHIBITION HALL – HALL 2CDE</b>		
	<b>PARALLEL I VENUE: MR 12</b>	<b>PARALLEL II HALL 3A</b>	
	Chairpersons Rafique Moosa & Tholang Khumalo	Chairpersons Saraladevi Naicker & Vakhtang Rekhviashvili	
13:30-14:00	Management of ANCA-associated vasculitis: Update <b>David Jayne (UK)</b>	CKD MBD: From bench to bedside <b>Charles Swanepoel (SA)</b>	
14:00-14:30	Analgesia in CKD <b>Geoff Bihl (SA)</b>	Kidney Care Access and/or Big Data in Pathology <b>Agnes Fogo (USA)- ISN President</b>	
14:30-15:00	The new MAC on transplantation: Improvements to enhance Ministerial approvals <b>Rafique Moosa (SA)</b>	Reasons for discrepancies between the number of patients on renal replacement therapy in public versus private in South Africa <b>Zubair Asmal (SA)</b>	
15:00-15:30	<b>COFFEE BREAK - VENUE: EXHIBITION HALL – HALL 2CDE</b>		
	<b>PLENARY SESSION VENUE: HALL 3A</b>		
	Chairpersons Alain Assounga & David Mphuthi		
15:30-16:00	Monogenic kidney diseases in an African context <b>Jeffrey Kopp (USA)</b>		

16:00-16:30	Paeds/adolescent scoring system for acceptance on renal transplant program <b>Mignon McCulloch (SA)</b>
16:30-17:00	Pregnancy related kidney disease: Update <b>S. Ananth Karumanchi (USA)</b>
17:00-17:15	<b>LEG STRETCH / COMFORT BREAK</b>
	<b>CONGRESS OPENING SESSION</b> <b>VENUE: HALL 3A</b>
	Chairpersons Kwazi Ndlovu & Jonathan Maree
17:15-17:30	Welcome Addresses: <b>Dr Shoyab Wadee, SANS President</b> <b>Prof David Mphuthi, RCSSA President</b> <b>Prof Alain Assounga, Congress Chairperson</b>
17:30-17:40	Patient Perspective <b>Noreen Perryman (SA)</b>
17:40-17:50	Patient Perspective <b>Henk Goris (SA)</b>
17:50-18:05	Early identification and intervention in CKD: Implications for burden of disease <b>Saraladevi Naicker (SA)</b>
18:05-18:20	Saving Young Lives – Managing acute kidney injury in low resource settings <b>Mignon McCulloch (SA)</b>
18:20-19:00	NHI: What does is mean for access to Renal Care and the management of the non-communicable disease epidemic? <b>Honourable Deputy Minister of Health Dr Sibongiseni Maxwell Dhlomo</b>
19:00-21:00	<b>COCKTAIL FUNCTION</b> <b>VENUE: EXHIBITION HALL – HALL 2CDE</b>

<b>ADULT &amp; PAEDIATRIC NEPHROLOGY COMBINED VENUE: MR 12</b>			<b>RCSSA VENUE: HALL 3A</b>			
	Chairpersons Kwazi Ndlovu & Brian Rayner			Chairpersons David Mphuthi & Jonathan Maree		
08:00-08:30	APOL1 variants in CKD and kidney transplant <b>Jeffrey Kopp (USA)</b>			Ethics Lecture: Issues relating to the employment of practitioners <b>M Kwinda (SA)</b>		
08:30-09:00	COVID-19 – from pandemic to endemic <b>Shoyab Wadee (SA)</b>			Improving quality renal care through health literacy testing <b>Elsabet Van Rensburg (SA)</b>		
09:00-09:30	Lung–kidney interactions in critically ill patients: Lessons from COVID 19 <b>Claudio Ronco (Italy)</b>			Presentation to be confirmed		
09:30–09:40	The causes of hypertension in children less than 18 years at Red Cross War Memorial Children's Hospital <b>Bonisiwe Chauke-Makamba (SA)</b>			Cultural practices and diet adherence of patients living on haemodialysis <b>Verosha Ramkelawan (SA)</b>		
09:40–09:50	Shedding of HIV-1 into peritoneal dialysis effluent and associated risk factors <b>Teboho Mooko (SA)</b>					
09:50–10:00	Clinical and immunological features of CoViD-19 infection in children undergoing haemodialysis: a single centre experience <b>Lindokuhle Mahlase (SA)</b>					
10:00-10:30	<b>POSTER VIEWING &amp; COFFEE BREAK - VENUE: EXHIBITION HALL – HALL 2CDE</b>					
<b>ADULT &amp; PAEDIATRIC NEPHROLOGY COMBINED VENUE: MR 12</b>			<b>RCSSA VENUE: HALL 3A</b>			
	Chairpersons Mignon McCulloch & Razeen Davids			Chairpersons Vusi Mkhathshwa & Thembi Nteta		
10:30–11:00	Monoclonal antibodies in immunologic glomerular diseases <b>David Jayne (UK)</b>			The South African national consensus statement on Renal Supportive Care – a signpost for the future <b>Frank Brennan (Australia)</b>		
11:00–11:30	Can you transplant into a Bad Bladder? <b>Jo Clothier (UK)</b>			An overview of high-risk kidney transplants <b>Vijaya Rajakumari (India)</b>		
11:30-12:00	Building consensus around controversial aspects of managing hyperkalaemia <b>Yazied Chothia (SA)</b>			Pain management of patients with chronic renal failure: A case study of patients in a private renal facility <b>Shamanie Govender (SA)</b>		
12:00-12:05	COVID-19-related AKI and dialysis: What are the outcomes in South Africa? <b>Wesley van Hougenhouck-Tulleken (SA)</b>			COVID-19 in dialysis patients, A South African experience <b>Chevon Clark (SA)</b>		
12:05-12:10	Successful management of a Jehovah's Witness patient with ANCA-associated vasculitis following Pfizer-BioNTech COVID-19 Vaccine, declining blood products <b>Wilhelm Herbst (SA)</b>					
12:10-12:15	Ethical Culture, Ethical Leadership and Turnover Intention in the Private Sector <b>Nicola Ferreira (SA)</b>					
12:15-12:20	Comparison of quality of life in patients with advanced chronic kidney disease undergoing haemodialysis, peritoneal dialysis and conservative management <b>Neelu Mathew (SA)</b>					
12:20-12:25	Demographic and clinical profile of black patients with chronic kidney disease attending Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) in Johannesburg, South Africa <b>Alfred Meremo (SA)</b>					
12:25-12:30	Assessing the hydration status of South African children on chronic haemodialysis: A comparison of techniques <b>Neliswa Sinezeliwe Mbatha (SA)</b>					
12:30-12:35	Peritoneal dialysis-related peritonitis and outcomes in a tertiary level hospital in Johannesburg <b>Midhu Sunnyraj (SA)</b>					
12:35-13:00	<b>Questions and Answers</b>				Haemodialysis practitioners' knowledge and practice on prevention of haemodialysis vascular catheter-related infections <b>Siyanda Alex Ngema (SA)</b>	
13:00–14:00	<b>NOVO NORDISK LUNCH SYMPOSIUM VENUE: MR 12</b>					

	<b>Insulin therapy in renal disease Dr Alkesh Magan (Specialist Physician &amp; Endocrinologist, Sandton Mediclinic)</b>	
13:00-14:00	<b>LUNCH BREAK - VENUE: EXHIBITION HALL – HALL 2CDE – SPONSORED BY ADCOCK INGRAM CRITICAL CARE</b>	
	<b>PLENARY I VENUE: HALL 3A</b>	
	Chairpersons Mark Padavattan & Shoyab Wadee	
14:00-14:30	The management of Inborn Errors of Metabolism: Medical therapy and RRT <b>Stefano Picca (Italy)</b>	
14:30-15:00	Improving Quality of Care in Haemodialysis: Lessons from the Standardized Outcomes in Nephrology (SONG) initiative <b>Tushar Vachharajani (USA)</b>	
15:00-15:30	Infections and the kidney <b>Wesam Ismail (Egypt)</b>	
15:30-16:00	<b>COFFEE BREAK - VENUE: EXHIBITION HALL – HALL 2CDE</b>	
	<b>ADULT &amp; PAEDIATRIC NEPHROLOGY COMBINED VENUE: MR 12</b>	<b>RCSSA VENUE: HALL 3A</b>
	Chairpersons Graham Paget & Mduduzi Mashabane	Chairpersons Chevon Clark & Stephanie Viljoen
16:00-16:30	COVID-19 – opportunities for CKD in the broader national noncommunicable chronic disease agenda <b>Vivek Jha (India)</b>	Record review of post-haemodialysis blood results to assess adherence to guidelines for End Stage Renal Disease <b>Yolinda Louise van der Nest (SA)</b>
16:30-17:00	HIV CKD: Clinicopathologic correlations and outcomes <b>Nina Diana (SA)</b>	Monitoring factors influencing clotting during chronic haemodialysis therapy <b>Nthabiseng Patricia Melato (SA)</b>
17:00–17:10	The impact of diabetes and hypertension on renal allograft survival-a single centre study <b>Sumesh Padayachee (SA)</b>	Patients' perspectives on fluid management on a haemodialysis programme <b>Xolisa Xolo (SA)</b>
17:10–17:20	COVID-19 vaccine hesitancy in patients attending an outpatient dialysis unit in Johannesburg, South Africa <b>Zaheera Cassimjee (SA)</b>	
17:20–17:30	Incidence and one-year survival in elderly South Africans starting kidney replacement therapy <b>Thabiet Jardine (SA)</b>	
17:30-17:35	A retrospective study of the epidemiology and outcome of patients with dialysis-requiring acute kidney injury at Helen Joseph Hospital, Johannesburg, South Africa <b>Yashika Naidu (SA)</b>	
17:35-17:40	Chronic kidney disease among treatment-naïve HIV infected patients in Kano Nigeria <b>Aliyu Abdu (Nigeria)</b>	
17:40-17:45	Prevalence and Determinants of Endothelial dysfunction among HIV-positive, ART-treated adults at the Aminu Kano Teaching Hospital, Kano, Nigeria <b>Aishatu Nalado (Nigeria)</b>	
17:45-18:00	<b>Questions and Answers</b>	

**SUNDAY, 29 MAY 2022**

**PLENARY II  
VENUE: HALL 3A**

Chairpersons

Kagiso Motse & Saraladevi Naicker

08:00-08:30	History of SARS (Adult and Paeds) <b>Tony Meyers (SA)</b>
08:30-08:50	History and development of nephrology nursing in South Africa – role of the Renal Care Society of South Africa <b>Heilie Uys (SA)</b>
08:50-09:20	Laparoscopic donor nephrectomy: Current status <b>Vijaya Rajakumari (India)</b>
09:20-09:50	Innovations of the 4th Industrial Revolution in responding to the challenges of non-communicable diseases in South Africa <b>Barry Dwolatzky (SA)</b>
09:50-10:20	Big data: Contribution to chronic kidney care globally <b>Vivek Jha (India)</b>
10:20-10:50	<b>COFFEE BREAK - VENUE: HALL 3BC</b>

**PLENARY SESSION  
VENUE: HALL 3A**

Chairpersons

Shoyab Wadee & David Mphuthi

10:50-11:50	Panel Discussion Renal medical care post-COVID-19 - the future and NHI <b>Dr Nicholas Crisp, Deputy Director General: National Health Insurance</b>  <b>Panellists</b> <b>Albert Muranda (SA)</b> <b>Dr Fareed Abdullah (SA)</b> <b>Kwazi Ndlovu (SA)</b> <b>Vakhtang Rekhviashvili (SA)</b> <b>Mark Padavattan (SA)</b> <b>Jenni Noble (SA)</b>	
	<b>ADULT &amp; PAEDIATRIC NEPHROLOGY COMBINED VENUE: MR 12</b>	<b>RCSSA VENUE: HALL 3A</b>
	Chairpersons Rajendra Bhimma & Charles Swanepoel	Chairpersons Ansuné Korb & Lesego Makgakge
11:50-12:20	Quality, sustainability, and equity of access to kidney prevention and care in sub-Saharan Africa <b>Gloria Ashuntantang (Cameroon)</b>	Ethics Lecture: Criminal prosecution of practitioners: Unprofessional conduct vs. criminal conduct <b>M Kwindu (SA)</b>
12:20-12:50	Adsorption: The New Frontier in Blood Purification <b>Claudio Ronco (Italy)</b>	Dialysis for Acute Kidney Injury (AKI): Indications, timing & intensity, and approaches to dialysis <b>Tadesse Yemondwossen (Ethiopia)</b>
12:50-12:55	A descriptive study of chronic kidney disease (stages 3-5) in children at Chris Hani Baragwanath Academic Hospital, 2000-2019 <b>Nokukhanya Ngubane-Mwandla (SA)</b>	An audit of dialysis water quality at Groote Schuur Hospital <b>Daniel Mweli (SA)</b>
12:55-13:00	The evolving spectrum of renal histology in HIV positive patients in South Africa in the antiretroviral and tuberculosis era <b>Nicola Wearne (SA)</b>	
13:00-13:05	Prevalence and predictors of kidney tubular dysfunction in HIV-positive adults in South-Western Nigeria <b>Muzamil Hassan (Nigeria)</b>	
13:05-13:20	<b>Questions and Answers</b>	
13:20	CONGRESS SUMMARY & CLOSURE	RCSSA CLOSING AND AWARDS CEREMONY

## POSTER PRESENTATIONS

Presentation Title	Presenting Author	Poster Board No.
Anterograde mini-percutaneous retropelvicendopyelotomy	Ahmed Adam	P01
Laparoscopic versus open-surgery catheter placement in peritoneal dialysis patients: A meta-analysis of outcomes	Guled Abdijalil Ali	P02
Anti PLA2R Ab-positive membranous nephropathy in a patient with eosinophilic variant chromophobe renal cell carcinoma: A case report	Feziwe Busiswa Bisiwe	P03
A retrospective study to determine the prevalence and degree of hyperkalaemia in adult patients attending the renal clinic at Inkosi Albert Luthuli Central Hospital	Tasneem Bux	P04
Histopathological patterns of renal disease at Helen Joseph Hospital, South Africa: A 5-year retrospective review	Zaheera Cassimjee	P05
Are Standard COVID-19 isolation protocols appropriate in haemodialysis units? A description of a novel SARS-COV-2 coronavirus outbreak in a haemodialysis unit in Johannesburg, South Africa	Zaheera Cassimjee	P06
Correlation between interdialytic weight gain and hypertension	Kelebohile Chaka	P07
Hypoglycaemia following insulin and dextrose therapy for hyperkalaemia	Yazied Chothia	P08
An audit of pre-dialysis serum potassium levels and mean interdialytic weight gain in the adult chronic haemodialysis patients at Charlotte Maxeke Johannesburg Academic Hospital	Nina Diana	P09
An audit of hepatitis b immune status in the adult chronic haemodialysis unit at Charlotte Maxeke Johannesburg Academic Hospital	Nina Diana	P10
Kidney echogenicity and kidney length as surrogate markers of kidney function with an increased echogenic pattern being most predictive of renal dysfunction in CKD, particularly in HIV	Astley Frank	P11
Review of 77 renal biopsies performed at Frere Hosp, Eastern Cape, in HIV positive patients-2014-2021	Alan Gordon	P12
Review of 189 renal biopsies, in HIV negative patients, with clinical correlation, performed at Frere Hosp (Eastern Cape)-2014-20212	Alan Gordon	P13
Investigating elevated aluminium levels in haemodialysis patients	Erika Jones	P14
The experience of caregivers and patients attending the paediatric nephrology clinic at the Chris Hani Baragwanath Academic Hospital during the COVID-19 pandemic	Shannon Leahy	P15
Accurate recording of patient data improves patient care	Tasmien Mack	P16
Determinants of kidney allograft dysfunction at 12 months post transplantation in Kenya	David Martin	P17
A five-year retrospective study on the characteristics of RPGN in South Africa	Swati Meel	P18
A case of membranous glomerulonephritis associated with NSAIDS use	Swati Meel	P19

Prevalence of Hepatitis B and vaccination response in patients with end stage kidney disease on dialysis at a Tertiary Center in the Eastern Cape Province of South Africa	Lungiswa Mtingi-Nkonzombi	P20
Case report: COVID associated nephropathy (COVAN) in a kidney allograft	Happy Nkambule	P21
An evaluation of clinical, biochemical, renal histology and outcomes of patients with mesangiocapillary glomerulonephritis (MCGN) in HIV positive compared to HIV negative patients at a tertiary hospital, in Cape Town, South Africa	Shaheed Sorathia	P22
An unusual association of focal segmental glomerulosclerosis and multiple myeloma	Jason Sullivan	P23
Acute kidney injury in burn victims	Luthando Vazi	P24
Incidence, associated risk factors and outcomes of pregnancy-related acute kidney injury in North Central, Nigeria	Bala Waziri	P25
The effect of severe drought and water restrictions on peritonitis	Nicola Wearne	P26
Cost-effectiveness and budget-impact analysis of Tenofovir Alafenamide vs. Tenofovir Disoproxil Fumarate or Entecavir for chronic Hepatitis B treatment in South Africa	Nicola Wearne	P27

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## ORAL PRESENTATION

### CHRONIC KIDNEY DISEASE AMONG TREATMENT-NAÏVE HIV INFECTED PATIENTS IN KANO NIGERIA

Aliyu Abdu, Babatunde Ademola, Sunisi M Bala, Aisha Nalado, Patience Obiagwu, Raquel Durte, Saraladevi Naicker

The prevalence of HIV-associated organ dysfunction, including kidney disease continue to increase owing to a rise in population of HIV infected patients and their improved long-term survival. Presence of kidney disease is associated with faster progression to AIDS and increased mortality and HIV-associated nephropathy is a criterion for commencing antiretroviral treatment irrespective of the CD4 count. Reported prevalence of kidney disease among HIV infected patients varies globally. This variability may be related to factors such as small sample size, the definition of chronic kidney disease (CKD) and the population studied. We studied the prevalence of CKD, its risk factors, and outcomes among a cohort of ART-naïve HIV infected patients in our center.

**Methods:** Consecutive treatment naïve HIV patients were studied using a structured questionnaire, after an initial clinical evaluation and screening for the presence of CKD defined as persistent proteinuria and/or reduced eGFR confirmed at least three months after the initial assessment.

**Results:** Nine hundred patients were studied; 63% were female with a mean age of  $34.2 \pm 10$  years and mean CD4 count of  $238 \pm 210$  cells/mm<sup>3</sup>. The prevalence of CKD was 22.8%, using the CKD-EPI equation with the majority 146 (71.21%) having stage 3 CKD. Multivariable analysis identified age, CD4 count <200cells/mL, BMI and a history of use of traditional medications as being independently associated with CKD. Fourteen patients with stage 5 CKD were followed up for the first year and eight of them were dialysis-requiring within the first 6 months. Two were lost to follow up and the remaining 4 died of other complications within the follow up period.

**Conclusion:** We found high prevalence of CKD in this cohort of HIV infected patients and this calls for the incorporation of screening for CKD and its risk factors and implementation of strategies targeted at early detection, and institution of therapies to slow progression to ESKD.

**Key words** chronic kidney disease, HIV infection, Kano, Nigeria.

## POSTER PRESENTATION

### ANTEROGRADE MINI-PERCUTANEOUS RETROPELVICENDOPYELOTOMY: A NOVEL APPROACH TO URETERO-PELVIC JUNCTION OBSTRUCTION

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#### **Background:**

Uretero-pelvic Junction Obstruction (UPJO) is a common cause of upper tract urinary obstruction. This condition is generally treated with various surgical options which include the endoscopic (retrograde or prograde), laparoscopic, open, or robotic assisted. Herein we describe the novel endoscopic retroperic approach using a mini (14 Fr) nephroscope.

#### **Methods:**

30 years old patient presented with symptomatic left UPJO and inferior pole renal stones as per his CT-scan, MAG3 renogram shows functioning left kidney. In theatre via the Mini-perc (Karl-Storz) nephroscope the renal pelvis was accessed using the percutaneous access route, with the patient in the supine position. The retroperic space was accessed and the UPJO was splayed using a Holmium-YAG laser, from within the retro peric space.

#### **Results:**

Clear endoscopic vision, minimal bleeding, and an overall better identification of the UPJO is possible using this retroperic access method. Clinically the patient is 12 months stent and symptoms free, the system still dilated on imaging but no obstruction on follow up MAG3.

#### **Conclusions:**

Percutaneousanterogaderetropericendopyelatomy is a novel approach which should be considered in patients with secondary renal calculi. This is the first report of it being successfully performed via the Mini-Perc access route.

**Keywords:** Uretro-pelvic junction obstruction, pyeloplasty, endopyelotomy, antero-grade percutaneous mini-perc.

## POSTER PRESENTATION

### LAPAROSCOPIC VERSUS OPEN-SURGERY CATHETER PLACEMENT IN PERITONEAL DIALYSIS PATIENTS: A META-ANALYSIS OF OUTCOMES

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The peritoneal dialysis catheter (PDC) can be placed either through the laparoscopic technique, percutaneous technique, or surgical procedures. The utilization of these PDC placement procedures is based on successful placement and reduced risk of development of complications. The main objective of this study was to compare the complications associated with laparoscopic vs. open-surgery PDC placement procedure. Literature for this review was obtained from PubMed and Google Scholar databases. The literature search was limited to studies published in the period between 1998 and 2019. The meta-analysis was done using Stata Version 12. The results showed significant difference in catheter malfunction between the laparoscopic and open-surgery group (relative risk [RR] =0.58; 95% CI: 0.42–0.8; P = 0.031). Furthermore, there was no significant statistical difference in dialysate leakage (RR = 0.77; 95% CI: 0.51–1.17, P = 0.116) peritonitis (RR = 0.8; 95% CI: 0.6–1.06, P = 0.349) and exit-site infection (RR = 0.84; 95% CI: 0.65–1.09, P = 0.834) between the laparoscopic and open-surgery PDC placement groups. In conclusion, the laparoscopic PDC placement procedure was superior to open surgery in regard to catheter malfunction. Additionally, the choice of treatment procedure should put in consideration factors such as cost and comfortability of the patient.

**Keywords:** Peritoneal dialysis catheter insertion, CAPD catheter insertion, open surgery, laparoscopic PDC insertion.

## POSTER PRESENTATION

### ANTI PLA2R AB-POSITIVE MEMBRANOUS NEPHROPATHY IN A PATIENT WITH EOSINOPHILIC VARIANT CHROMOPHOBE RENAL CELL CARCINOMA: A CASE REPORT

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Membranous nephropathy (MN) is the most common cause of nephrotic syndrome in non-diabetic adults. It is characterized by the accumulation of immune complex deposits on the sub-epithelial side of the glomerular basement membrane. Malignancies, various infections, use of certain medications and autoimmune diseases have been described to be the common causes of secondary MN. The discovery of antiPLA2R as an autoantigen in most patients with primary membranous nephropathy in 2009 has changed the landscape of investigating and managing patients with membranous nephropathy. Primary membranous nephropathy is characterized by the formation of circulating anti phospholipase A receptor 2 antibodies (AntiPLA2R Ab). We describe a rare case of a 39-year-old male of African descent who presented with nephrotic syndrome and found to have circulating AntiPLA2RAb as well as an eosinophilic variant of chromophobe renal cell carcinoma on the contralateral kidney. A partial nephrectomy and adjunctive supportive anti-proteinuric measures did not improve nephrotic syndrome. Partial remission of nephrotic syndrome was achieved after treatment with a combination of corticosteroids and oral cyclophosphamide in line with treatment of moderate and high-risk group patients with primary membranous nephropathy. This case is novel as it describes a patient with two disease processes that are not known to be related, yet both known to cause membranous nephropathy. The limited availability of AntiPLA2RAb testing at the treatment center resulted in a delay in establishing the diagnosis of primary membranous nephropathy. Unavailability of PLA2R antibody histology stains made it difficult to conclusively decide the causal effect of the circulating AntiPLA2R antibodies in this patient. Concerted efforts to improve cost-effective availability of antiPLA2R antibody testing in South African public sector are needed. Laparoscopic partial nephrectomy was uneventful, and it precluded nephron loss and preserved glomerular filtration rate in this patient.

**Keywords:** membranous glomerulonephritis, nephrotic syndrome, chromophobe renal cell carcinoma

## POSTER PRESENTATION

### A RETROSPECTIVE STUDY TO DETERMINE THE PREVALENCE AND DEGREE OF HYPERKALAEMIA IN ADULT PATIENTS ATTENDING THE RENAL CLINIC AT INKOSI ALBERT LUTHULI CENTRAL HOSPITAL

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**Background:** The presence of hyperkalaemia is a known risk factor for the development of cardiac rhythm disturbances and sudden cardiac death, and the presence of chronic kidney disease (CKD) is an independent risk factor for cardiac death. The prevalence of hyperkalaemia in patients with CKD has previously varied widely and has not previously been determined in the patients attending the renal clinic at Inkosi Albert Luthuli Central Hospital (IALCH).

**Objectives:** This study aimed to discover the prevalence of hyperkalaemia in patients attending the renal clinic at IALCH, as well as the degree of severity amongst the patients in whom hyperkalaemia was present. Demographic and other variables were assessed for an association with hyperkalaemia.

**Methods:** A retrospective review of outpatients attending the renal clinic at IALCH from 1 October 2016 until 30 September 2017.

**Results:** The study consisted of 200 patients; the majority female (n=120, 60%). The prevalence of hyperkalaemia amongst these patients was found to be 16%. In those with stage 3 CKD, the prevalence of hyperkalaemia was 7.69%. In those with stage 4 CKD, the prevalence of hyperkalaemia was 20.5% and in those with stage 5 CKD the prevalence was 17.3%. There were no statistically significant associations between hyperkalaemia and demographic or other variables. There was a significant association with the use of sodium polystyrene sulfonate.

**Conclusion:** CKD is a growing burden in the developing world. With CKD comes metabolic and other derangements, including electrolyte abnormalities as well as increased cardiovascular risk. Hyperkalaemia is associated with worsening CKD. In addition, hyperkalaemia puts patients at risk of cardiac dysrhythmias and sudden cardiac death. Pharmacological measures to manage CVD risk should be weighed up against the risk of hyperkalaemia related complications. Potassium lowering agents should be considered to allow for optimal CVD management in the setting of hyperkalaemia in CKD.

## POSTER PRESENTATION

### HISTOPATHOLOGICAL PATTERNS OF RENAL DISEASE AT HELEN JOSEPH HOSPITAL, SOUTH AFRICA: A 5 YEAR RETROSPECTIVE REVIEW

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#### Background

Knowledge of the epidemiology and aetiology of native kidney disease is important in ameliorating the development and progression of chronic kidney disease. We reviewed native kidney biopsies undertaken at Helen Joseph Hospital (HJH) to describe local patterns of histological injury.

#### Methods

A retrospective review of all native kidney biopsies performed at HJH during the period 1/1/2014 – 31/12/2018 was undertaken. The effect of gender, age, and ethnicity on histological diagnoses was analysed using Chi-square testing.

#### Results

Two hundred and five patients were included, mainly of Black African origin (n = 170, 82.93%) with a slight female preponderance (n= 111, 54.15%); the median age of patients in this study was 36 years (IQR 28 – 46 years). Nephrotic syndrome was the most frequent biopsy indication (38.54%), followed by unexplained renal dysfunction (36.10%), urinary abnormalities (16.58%) and nephritic syndrome (8.78%). Sixty-eight (33.17%) biopsies were undertaken in HIV positive patients. Lupus nephritis (LN) was the most common glomerular lesion (55, 26.83%), followed by FSGS (30, 14.63%), classical HIVAN (21, 10.24%), membranous nephropathy (MN; 17, 8.29%), hypertensive nephropathy (HTN; 15, 7.32%), minimal change disease (MCD; 11, 5.37%), diabetic nephropathy (DN; 10, 4.88%), membranoproliferative glomerulonephritis (MPGN; 9, 4.39%), and HIV immune-complex spectrum diagnoses (7, 3.41%). Crescentic glomerulonephritis (4, 1.95%), mesangioproliferative glomerulonephritis (MesPGN; 3, 1.46%), amyloidosis (3, 1.46%), post-infectious glomerulonephritis (2, 0.98%), and ANCA-associated glomerulonephritis (1, 0.49%) were less common; ATN (8, 4.39%) and tubulointerstitial nephritis (TIN; 8, 3.9%) contributed to tubulointerstitial disease patterns. LN, FSGS, HIVAN, MesPGN, and ATN were more common in patients younger than 40 years, MN, HTN, DN, and TIN were more frequent in older patients (p < 0.001).

#### Conclusion

LN is the commonest histological lesion at HJH. Despite ARV availability, classical HIVAN remains not uncommon. The most frequent primary glomerular lesion in our setting is FSGS.

## POSTER PRESENTATION

### ARE STANDARD COVID-19 ISOLATION PROTOCOLS APPROPRIATE IN HAEMODIALYSIS UNITS? A DESCRIPTION OF A NOVEL SARS-COV-2 CORONAVIRUS OUTBREAK IN A HAEMODIALYSIS UNIT IN JOHANNESBURG, SOUTH AFRICA

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#### Background

Recipients of outpatient haemodialysis are at an increased risk of acquiring severe SARS-CoV-2 infection. Isolation of infected patients reduces in-centre transmission, but protocols extrapolated from the general population may not be applicable in this setting. We describe the kinetics of an outbreak in a tertiary dialysis centre in Johannesburg, South Africa, to suggest an appropriate isolation strategy.

#### Methods

Retrospective analysis of a clinical database employed to facilitate isolation of exposed and infected patients during an outbreak of the alpha variant was undertaken. Modes of transmission, incubation and recovery periods in patients developing SARS-CoV-2 infection were assessed. The effects of factors modulating immune function on incubation and recovery periods were modelled using sigma-restricted partial least squares linear regression. Severity of infection and the outcomes thereof were described to assess the efficacy of the isolation protocols employed.

#### Results

SARS-CoV-2 infection was diagnosed in 24.7% of patients receiving outpatient haemodialysis. Contact with an infected healthcare worker was the leading indication for surveillance swabbing in this cohort (49.12%). 40% of all positive cases had antecedent contact with an infected healthcare worker, and possible patient-to-patient transmission occurred in one case. The median time to the diagnosis of infection following known exposure was 16.5 days. Comorbid diabetes (b -0.422, 95% CI b -0.800 - -0.044, p = 0.030) and increasing dialysis vintage (b -0.407, 95% CI b -0.789 - -0.025, p = 0.038) were independently associated with a shorter incubation period. The median time to clearance of infection was 33.5 days. Clinical disease severity tended to prolong recovery period (median time to clearance 45 days, b 0.529 95% CI b -0.084 – 1.143, p = 0.086). No patient required mechanical ventilation, and there were no deaths during the study period.

#### Conclusion

Haemodialysis patients manifest prolonged incubation and recovery periods. Serial monitoring with RT-PCR swabs may be required to ensure effective isolation.

## ORAL PRESENTATION

### COVID-19 VACCINE HESITANCY IN PATIENTS ATTENDING AN OUTPATIENT DIALYSIS UNIT IN JOHANNESBURG, SOUTH AFRICA

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#### Introduction

Patients living with kidney failure are at increased risk of severe COVID-19 disease, dependence on in-centre follow-up increases the probability of SARS-CoV2 infection. Vaccination reduces transmission and disease severity in this at-risk population. Vaccine uptake in South Africa remains poor, suggesting that novel recruitment strategies are required. We examined rates and reasons of COVID-19 vaccine hesitancy in an urban dialysis population and investigated the efficacy of an educational intervention on vaccine acceptance.

#### Methods

One hundred and four voluntary participants were recruited from the outpatient haemo- and peritoneal dialysis units at the Helen Joseph Hospital. An anonymous questionnaire analysing acceptance of and concerns regarding the Pfizer-BioNTech BNT162b2 mRNA vaccine was self-administered. Participants thereafter received a copy of the South African Nephrology Society (SANS) SARS-CoV-2 vaccine information leaflet, a follow-up anonymous questionnaire analysing responses to the information received was then self-administered. Responses to questionnaires were compared using Pearson Chi-square testing; stepwise sigma restricted logistic regression was used to determine the effect of information source and interventions on vaccine hesitancy.

#### Results

Seventy-two (69.23%) participants were unvaccinated against SARS-CoV-2; 23 (22.1%) indicated unwillingness to undergo vaccination. Concerns about vaccine side-effects, safety and perceived risk of SARS-CoV-2 transmission by vaccination were important factors in vaccine hesitancy. News and social media was an important source of information for vaccine hesitant respondents; prior counselling by healthcare workers reduced hesitancy (OR 0.175, 95% CI 0.039 – 0.784,  $p = 0.023$ ). Dissemination of a healthcare worker-endorsed information brochure reduced vaccine side-effects concerns ( $p = 0.028$ ) and increased vaccine acceptance to 84.3%. In-centre vaccination was additionally identified by respondents as a strategy to reduce hesitancy (OR 0.053, 95% CI 0.012 – 0.221,  $p = 0.00005$ ).

#### Conclusion

This first analysis of a COVID-19 vulnerable dialysis population in South Africa highlights important factors contributing to vaccine hesitancy. Simple educational interventions, capitalising on trust in healthcare workers, and improvements in vaccine accessibility may improve vaccine uptake.

## POSTER PRESENTATION

### CORRELATION BETWEEN INTERDIALYTIC WEIGHT GAIN AND HYPERTENSION IN HEMODIALYSIS PATIENTS

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#### Introduction

High blood pressure is common in end-stage renal disease patients treated with hemodialysis. The cause of hypertension in renal disease patients is multifactorial, but the direct relation between fluid status and blood pressure has been recognized. However, the extent to which interdialytic fluid overload affects blood pressure in patients with ESRD hemodialysis treatment remains controversial.

#### Methodology

This was a retrospective study where data was collected from the database of Fresenius Medical Care. 50 patient who met inclusion criteria were selected. For each patient, we recorded 8 dialysis sessions (Wednesdays and Fridays) over a period of 1 month. Body composition monitor was done on the first of the month to determine patient's dry weight. Patient's dry weight, weight before dialysis, blood pressure before dialysis and blood pressure after dialysis were recorded.

#### Results and Discussions

Using the mean value of systolic blood pressure, there is a statistically significant correlation between weight gain and average systolic blood pressure ( $p= 0.0435$ ). There was no significant correlation between diastolic blood pressure and the average weight gain ( $p= 0.2617$ ). Individual data analysis showed different relationships between systolic blood pressure before and after dialysis. The mean average BP were 164.7 mmHg and 144.5 mmHg for pre and post dialysis respectively. Post dialysis systolic blood pressure decreased with fluid removal in the majority of patients. Even though systolic BP correlated with IDWG, in dialysis patients, the pathophysiological mechanism of hypertension is multifactorial, and these factors includes genetics, sympathetic overactivity, derangement of renin-angiotensin system, impaired endothelium-dependent vasodilation, sodium intake and uremic toxins. These physiological factors motivate us to take a holistic approach towards hypertension in dialysis patient.

#### Conclusion

In conclusion, our study shows that there is a significant correlation between IDWG and pre-dialysis systolic BP while the relationship between diastolic BP was not statistically significant. Although the IDWG correlated with systolic BP, the study suggests that in addition to fluid overload, other factors play a role in dialysis patients BP control.

## POSTER PRESENTATION

### CAUSES OF HYPERTENSION AT A CHILDREN'S HOSPITAL IN CAPE TOWN, SOUTH AFRICA

Chauke-Makamba BC, McCulloch M, Coetzee A, Nourse P

#### **Background**

Traditionally hypertension in children is due to secondary causes. With the onset of the obesity epidemic, primary hypertension has become increasingly more common.

#### **Methods**

A retrospective medical record review of children < 18years old diagnosed with persistent hypertension in the paediatric nephrology unit at Red Cross Children's Hospital from January 2000 - December 2019.

#### **Results**

156 children were enrolled in the study (115 children in the second decade). The mean age at presentation was 7years 6 months. Overall, 112 children (72%) had secondary hypertension. Only 3 patients (7.5%) had primary hypertension in the first decade. In the second decade 41 of 115 (35%) children had primary hypertension of which 19 (46%) were obese. The commonest presentation at diagnosis, was stage 2 hypertension in all age groups. Fifty five percent of patients were 6-12 years of age. Glomerulopathy (24%), renovascular disease (23%) and obstructive uropathy (9%) were the commonest causes of secondary hypertension. In the children with secondary hypertension, the majority (54%) were also in the 6-12year old age group. Hereditary cystic disease (36%) was the commonest cause of hypertension in children <1 year of age.

#### **Conclusion**

There was an increase in the number of children referred to our clinic over the decades. Much of the increase is due to an increase of referral of patients with primary hypertension. A large percentage of these children are obese. Secondary hypertension still remains more common. The causes of hypertension in our setting were similar when compared internationally, except in infants.

## POSTER PRESENTATION

### HYPOGLYCAEMIA AND OTHER ADVERSE EFFECTS OF INSULIN AND DEXTROSE THERAPY FOR THE MANAGEMENT OF HYPERKALAEMIA IN HOSPITALISED ADULTS: A SCOPING REVIEW

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#### Introduction

Hyperkalaemia is a very common electrolyte disorder encountered in hospitalised patients. Although hypoglycaemia is a frequent complication of insulin therapy, it is often under-appreciated. We conducted a scoping review of this important complication, and of other adverse effects, of the treatment of hyperkalaemia.

#### Methods

This scoping review followed the PRISMA-ScR guidelines. Articles were eligible for inclusion if they reported on any adverse effects in patients  $\geq 18$ -years-old, with hyperkalaemia receiving treatment that included insulin and dextrose. All eligible research from 1980 to 12 October 2021, were included. We searched Medline (PubMed), Embase (Ovid), the Cochrane Library, CINHALL, Africa-Wide Information, Web of Science Core Collection, LILACS and Epistemonikos. The protocol was registered with the Open Science Framework (<https://osf.io/x8cs9>).

#### Results

Sixty-two articles were included. The rate of hypoglycaemia by any definition was 17.2% (95% CI 16.6–17.8%). The median timing of hypoglycaemia was 124 minutes (IQR 102–168 minutes). There were no differences in the rates of hypoglycaemia when comparing insulin dose ( $< 10$  units vs.  $\geq 10$  units), rate of insulin administration (continuous vs. bolus), type of insulin (regular vs. short-acting) or timing of insulin administration relative to dextrose. However, lower insulin doses were associated with reduced rates of severe hypoglycaemia (3.5% vs. 5.9%,  $P = 0.02$ ). There was no difference regarding rates of hypoglycaemia by dextrose dose ( $\leq 25$  g vs.  $> 25$  g); however, rates were lower when dextrose was administered as a continuous infusion compared with bolus (3.3% vs. 19.5%,  $P = 0.02$ ). The most common predictor of hypoglycaemia was the pre-treatment serum glucose concentration ( $n=13$  studies).

#### Conclusion

This is the first comprehensive overview of the frequency of adverse effects following insulin therapy for hyperkalaemia. Hypoglycaemia remains a common adverse effect. Future randomised trials should focus on identifying the optimal regimen of insulin and dextrose to mitigate the risk of hypoglycaemia.

**Keywords:** hyperkalaemia, hypoglycaemia, insulin, glucose, dextrose, adverse effects.

## ORAL PRESENTATION

### COVID-19 IN DIALYSIS PATIENTS, A SOUTH AFRICAN EXPERIENCE

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#### **Background and Aims:**

COVID-19 has had devastating effects worldwide. Patients on dialysis are at increased risk for COVID-19 infection due to their high burden of comorbidities, impaired immune response, need to attend dialysis and the higher incidence of severe disease. In this study we evaluated the prevalence, clinical management and outcome of dialysis patients and dialysis healthcare workers who tested positive for COVID-19. Further, the study aimed to provide insight into strategies to minimize COVID-19 spread in outpatient dialysis facilities.

#### **Method:**

A retrospective cohort study was conducted on 1382 chronic dialysis patients and 292 healthcare workers from 69 chronic haemodialysis centres and 17 home therapy divisions who have tested COVID-19 positive from the 5<sup>th</sup> March 2020 until the 26<sup>th</sup> July 2021.

#### **Results:**

From the 1382 chronic dialysis patients who tested positive during the study, the mean age was 57.5±12.7 years of age; 61.3% of patients were male and 38.7% female. The overall 28-day mortality rate for patients testing COVID-19 positive was 13.1% (n=181). The mean age of patients succumbing to COVID-19 was 63.6±11.1 years of age. A further, 292 healthcare workers tested positive during the study duration, 63.4% (n=185) were frontline healthcare staff (nurses or clinical technologists) and 22.9% (n=67) were support services and 13.7% (n=40), were administrative staff. Only one staff member succumbed to COVID-19 (0.3%). At the end of the study duration 69% of healthcare workers and 27.6% of patients had been vaccinated.

#### **Conclusion:**

Dialysis patients are associated with more adverse clinical outcomes and increased mortality. In South Africa, better vaccination rates and more dosing and appropriate preventative strategies remain our strongest defense to mitigate excess cases and death.

## POSTER PRESENTATION

### AN AUDIT OF PRE-DIALYSIS SERUM POTASSIUM LEVELS AND MEAN INTERDIALYTIC WEIGHT GAIN IN THE ADULT CHRONIC HAEMODIALYSIS PATIENTS AT CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL

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#### Background

Chronic haemodialysis aims to remove excess potassium and fluid. Recommended optimal pre-dialysis serum potassium is 4.0 – 6.0mmol/l. Pre-dialysis potassium levels outside of this range have been associated with increased risk of fatal arrhythmias and sudden cardiac arrest. Fluid overload may lead to hypertension and pulmonary oedema. Chronic fluid overload is independently associated with poorer outcomes, including increased mortality. Recommended interdialytic weight gain (IDWG) is < 5% of dry weight.

#### Methods

We conducted an audit of pre-dialysis serum potassium and mean IDWG in adult patients who attended the chronic haemodialysis unit at Charlotte Maxeke Johannesburg Academic Hospital. Pre-dialysis serum potassium levels were accessed from the hospital laboratory system. Mean IDWG was calculated over three consecutive haemodialysis sessions and expressed as a percentage of the patient's dry weight. Initial results were assessed. Root cause analysis identified potential areas for improvement. An action plan was implemented to increase compliance to guidelines. This included intensified dietary education relating to potassium, salt, fluid, energy and protein intake; exclusion of chronic diarrhoea or constipation; medication review and adjustment; and appropriate setting of sodium level during haemodialysis sessions. A re-audit was conducted after three months.

#### Results

Fifty-four patients were included in the initial audit. Pre-dialysis serum potassium levels were within range in 45 (84%) patients. Four (7%) had hyperkalaemia and 5 (9%) hypokalaemia. For mean IDWG, 52 (96%) patients met the target, but 2 (4%) patients were above.

In the re-audit 54 patients were included. Forty-eight (89%) patients' potassium levels were within optimal range, none had hyperkalaemia, 6 (11%) had hypokalaemia. For mean IDWG, 53 (98%) patients were below 5% and 1 (2%) patient was above.

#### Conclusion

Compliance to guideline targets increased with implementation of our action plan. Ongoing interventions and re-audits will allow more patients to meet the expected limits. Audits are important to enhance patient care.

**Key Words:** audit, pre-dialysis potassium, inter-dialytic weight gain, hyperkalemia, South Africa

## POSTER PRESENTATION

### AN AUDIT OF HEPATITIS B IMMUNE STATUS IN THE ADULT CHRONIC HAEMODIALYSIS UNIT AT CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL

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#### Background

Haemodialysis patients are at risk of contracting hepatitis B virus (HBV) due to nosocomial transmission. HBV infection poses an important clinical problem as immunosuppressive effects of kidney failure increase the likelihood of long-term complications. Prevention of HBV infection through vaccination is of critical importance. The South African Nephrology Society (SANS) recommends the following: screening should be performed in patients starting haemodialysis; non-immune patients should be vaccinated; and HBV antibody testing is recommended 1-2 months after completion of the primary series and 6-12 months thereafter. HepBsAb level >10mIU/ml is considered protective; booster vaccination should be administered for titres below this threshold.

#### Methods

We conducted an audit of HBV serology in adult chronic haemodialysis patients at Charlotte Maxeke Johannesburg Academic Hospital to ensure all had protective HBV antibody levels. Patients known to have chronic HBV infection were excluded. Results were interpreted and an action plan devised. This included identification and vaccination of non-immune patients according to the SANS recommendations; and testing and vaccination (if appropriate) of patients with missing results. A re-audit was conducted to confirm improved compliance to the guideline.

#### Results

Fifty-eight patients were included in the initial audit. Forty-eight (83%) patients had immunity, 7 (12%) patients had no immunity, and 3 (5%) patients had missing results.

The re-audit included 53 patients; 50 (94%) showed immunity against HBV. The 7 patients who were initially non-immune seroconverted following vaccination series. Three (6%) patients with previous protective HBV antibody titres became seronegative.

#### Conclusion

Whilst most patients showed immunity against HBV in the initial audit, the implemented action plan improved the number with protective HBV antibody levels. Six percent of patients lost HBV antibody protection during the audit period; this highlights the importance of regular ongoing screening especially given the serious sequelae of HBV infection in chronic haemodialysis patients.

**Keys Words:** Hepatitis B, vaccination, dialysis, booster

## ORAL PRESENTATION

### ETHICAL CULTURE, ETHICAL LEADERSHIP AND TURNOVER INTENTION IN THE PRIVATE SECTOR

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**Introduction:** One of the fundamental goals of an organisation is the ability to obtain, cultivate and sustain resources. Employee turnover has become one of the central challenges faced in South Africa.

**Aim and Objectives:** The aim of this study is to describe the relationship between ethical culture, ethical leadership, and turnover intention in the private sector. The population size of the pooled data was a total of 703 participants. The population sample is from the private sector that included medical and non-medical fields. Non-medical fields included the banking sector, mining sector, business sector etc.

**Methods:** The research design was cross-sectional and the method quantitative. Participants were in the core and support functions, as well as from managerial and non-managerial roles. Information was gathered using three measures namely the Ethical Culture Assessment (ECA), Ethical Leadership Questionnaire (ELQ) and the Turnover Intention (TI) instrument.

**Results:** There is a moderate positive correlation between ethical culture and ethical leadership that is highly significant ( $r=.62, p<0.01$ ). There is a strong negative correlation between ethical culture and turnover intention that is highly significant ( $r=-.33, p<0.01$ ). There is a strong negative correlation between ethical leadership and turnover intention that are highly significant ( $r=-.38, p<0.01$ ).

When the variables: ethical culture, ethical leadership and turnover intention were entered into the multiple regression model, it explained 16% of the variance. This is a statistically significant contribution ( $p<.01$ ).

**Conclusions:** Ethical leadership positively influences the relationship between ethical culture and turnover intention. It is important to improve ethical culture and ethical leadership within the work environment as it does influence turnover intention and the way employees perceive their workspace.

**Keywords:** Ethical Leadership, Ethical Culture, Workspace, Employee Turnover

## POSTER PRESENTATION

### KIDNEY ECHOGENICITY AND KIDNEY LENGTH AS SURROGATE MARKERS OF KIDNEY FUNCTION WITH AN INCREASED ECHOGENIC PATTERN BEING MOST PREDICTIVE OF RENAL DYSFUNCTION IN CKD, PARTICULARLY IN HIV

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#### Background

Chronic kidney disease (CKD) is an important public health threat with mounting cost implications. This study sought to investigate economic means of predicting renal function in CKD by exploring the association between estimated glomerular filtration rate (eGFR) and renal morphology evaluated by ultrasound (US).

#### Methods

This retrospective descriptive chart review was conducted at the Department of Nephrology, Inkosi Albert Luthuli Central Hospital (IALCH), Cato Manor, Kwa-Zulu Natal from June 2020 to May 2021. A total of 455 patients who had met the Kidney Disease Improving Global Outcomes (KDIGO) definition of CKD with an eGFR (CKD-EPI) and renal US performed were included. Demographic, clinical, laboratory and renal morphological data were analyzed. Associations between eGFR, parameters on US and CKD risk factors were determined using logistic regression analysis.

#### Results

Black Africans 75.2% (n.342) and females 56.9% (n.259) predominated the study. 65.7% of the sample had end-stage renal disease with corresponding short renal lengths (RLs) (right:  $8.49 \pm 2.16\text{cm}$  and left:  $8.60 \pm 2.20\text{cm}$ ). The duality of increased echogenicity (IE) and loss of corticomedullary differentiation (LCMD) predisposed to significantly shorter RLs and lower eGFRs than in the presence of one or no abnormality on US ( $p < 0.001$ ). IE [-9.29 OR; 95% CI (-13.8 - -4.77);  $p < 0.001$ ] and RL [right: 5.02 OR; 95% CI (3.44 – 6.60);  $p 0.04$ ; left: 5.11 OR; 95% CI (3.56 – 6.66);  $p 0.04$ ] were found to be significant predictors of eGFR. HIV (Human immunodeficiency virus) was the only risk factor found to be negatively associated with all determined measures of renal function, as well as the sole predictor of IE [2.31 OR; 95% CI (0.17 - 3.15);  $p 0.02$ ].

#### Conclusion

IE and RL are surrogate markers of renal function with an increased echogenic pattern being most predictive of renal dysfunction in CKD, particularly in HIV.

## POSTER PRESENTATION

### REVIEW OF 77 RENAL BIOPSIES PERFORMED AT FRERE HOSP, EASTERN CAPE, IN HIV POSITIVE PATIENTS - 2014-2021

Alan Gordon

#### **Background**

In a limited resource setting it is essential that tertiary services such as renal biopsy be used judiciously. A literature search revealed only one prior renal biopsy study from this region.

#### **Objective**

Assess if clinical findings alone, can suffice for diagnostic purposes, by clarifying the spectrum of renal pathology in this patient population

#### **Methods**

Retrospective review of renal biopsies, in HIV positive, patients-2014-2021, with clinical correlation

#### **Results**

77 biopsies were adequate for diagnostic purposes –HIVAN-27(35%), HIVICK-21(27,2%), hypertensive nephrosclerosis+malignant hypertension -7(9%), acute interstitial nephritis-6(7,7%), other. Analysis according to clinical presentation-most common diagnoses-GFR<30ml/min + Uprot:creat >0,3-HIVAN(54,5%);GFR<30ml/min + Uprot:creat <0,3-ATN (40%);GFR >45ml/min+Uprot:creat>0,3-lupus nephritis coexistent with HIV(21%)

#### **Conclusion**

A bewildering spectrum of diagnoses was present (HIVAN accounting for only one third), including those requiring urgent specific therapy-crescentic glomerulonephritis-3, lupus nephritis coexistent with HIV-4, AIN-6. The presence of co-existent lupus nephritis and HIV obviously raises complex management issues. In contra-distinction to studies involving predominantly Caucasian patients no cases of IgA nephropathy were diagnosed. It is our firm opinion that renal biopsy is essential, for diagnostic purposes, in the HIV positive patient with unexplained renal disease.

## POSTER PRESENTATION

### REVIEW OF 189 RENAL BIOPSIES, IN HIV NEGATIVE PATIENTS WITH CLINICAL CORRELATION, PERFORMED AT FRERE HOSP (EASTERN CAPE) - 2014-2021

Alan Gordon

#### Background

Regrettably, only a fraction of those requiring long term state sponsored renal replacement therapy, in our region, will ever receive it. Information on the spectrum of renal biopsy findings in this area is extremely limited-a literature search revealing only one prior study

#### Objective

Establish the major causes of irreversible renal failure and broaden the knowledge base of the nature of renal diseases on biopsy in this region

#### Methods

Retrospective review of renal biopsies performed at Frere Hosp-2014-2021, in HIV negative patients (estimated 85% of Black race), correlated with clinical presentation

#### Results

According to clinical renal presentation: GFR<30ml/min-total of 110patients-hypertensive vascular disease-32 (29%)-malignant hypertension 23 (20,9%) +hypertensive nephrosclerosis 9 (8,1%); diabetic glomerulosclerosis -21 (19%); crescentic glomerulonephritis-13 (11,8%); membranoproliferative glomerulonephritis-Type 1or3 (excluding cases associated with SLE , or crescentic disease)-8 (7,2%); other. GFR <30ml/min with nephrotic range proteinuria (Uprot:creat >0,3)-diabetic nephropathy (34%); malignant hypertension (13,6%), other.

GFR>45ml/min with nephrotic range proteinuria (Uprot:creat>0,3)-52 patients-lupus nephritis -12 (23%); FSGS-9(17,3%); MCD -8(15,3%), membranous nephropathy (excluding those with SLE)-7(13,4%)

Asymptomatic urinary abnormality-14 patients,13 known with SLE-biopsies for staging/prognostic purposes

#### Conclusions

1. Hypertensive vascular disease plus diabetic glomerulosclerosis alone accounted for just under half of patients with advanced, irreversible renal failure
2. Crescentic glomerulonephritis accounted for a significant 11,8% of those with GFR<30ml/min-given the limited window of opportunity for effective therapy, this diagnosis should be considered early in those with unexplained renal insufficiency and an active urinary sediment
3. In those with a classical nephrotic syndrome presentation lupus nephritis was the commonest cause followed by FSGS.
4. With regard to the 13 lupus staging biopsies in patients with subnephrotic proteinuria and minimal. If any renal impairment-5 (38%) had class 4 lupus nephritis-confirming the well-established value of biopsy in those with this disorder and a urinary ratio >0,05-0,1
5. Only a single case of IgA nephropathy was diagnosed
6. No cases of Hep C related membranoproliferative gmn were found; only single case of Hep B membranous nephropathy was diagnosed.

## ORAL PRESENTATION

### PAIN MANAGEMENT OF PATIENTS WITH CHRONIC RENAL FAILURE: A CASE STUDY OF PATIENTS IN A PRIVATE RENAL FACILITY

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#### **Background**

Pain management is highly complex in patients with chronic kidney disease (CKD) because there is a very narrow margin between pain relief and toxicity. Opioids can accumulate in the body and cause adverse effects, such as, respiratory distress, sedation and myoclonus.

#### **Methods**

A total of 60 patients and 22 renal staff participated in the study. Questionnaires were administered to staff and patients at the Durban Kidney and Dialysis Centre. Inclusion and exclusion criteria were applied to the participants. The study was conducted between September 2017 and March 2018. Relevant statistical methods were used for analysis.

#### **Results**

Patients were on average 57 years of age and all were on haemodialysis. Results for this study show that 98.3% of patients reported pain symptoms during dialysis and for 72.3% of the patients, the pain experienced was moderate to severe indicating that pain is a major symptom burden in this patient population. The most frequently reported symptoms were lower back pain (80%), lower leg pain (51,7%) and upper chest pain (46,7%%). Pain was frequently experienced by patients following the dialysis session (78,35%).

#### **Conclusion**

It is evident from the results of this study that pain management was neither done in a strategic manner nor was it tailored to the patient's specific needs. For staff, there were no formal, clinical pain management assessment instruments or follow-up regarding adherence to the recommendations for pain analgesics. Both patients and staff would benefit from awareness about different types of pain management therapies, (both pharmacological and non-pharmacological) and the long-term impact if pain continues to be under-diagnosed and under-treated.

## ORAL PRESENTATION

### PREVALENCE AND PREDICTORS OF KIDNEY TUBULAR DYSFUNCTION IN HIV-POSITIVE ADULTS IN SOUTH-WESTERN NIGERIA

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#### Background

There is limited data on kidney tubular dysfunction (KTD) among Nigerian HIV-infected patients treated with tenofovir (TDF). This study therefore determined the occurrence and risk factors associated with KTD in Nigerian HIV patients.

#### Methods

A cross-sectional study of HIV-positive patients receiving tenofovir-containing antiretroviral regimens who were seen at HIV clinics in South-west Nigeria were screened for KTD. Blood and urine samples were collected for assessment of severity of HIV disease and renal dysfunction. KTD was defined by the presence of at least 2 of the following abnormalities: nondiabetic glucosuria; total excretion of phosphorus >1200 mg daily; fractional tubular resorption of phosphorus < 0.82; fractional excretion of uric acid > 15%; and proteinuria (>0.2g/24hrs).

#### Results

A total of 3,130 HIV-positive patients were recruited (mean age of 44.1 ± 9.6 years). Majority (83%) of the study patients were females, with median CD4 count: 290 (IQR 151 – 454) cells/mm<sup>3</sup>, viral load: 20.0 (IQR 20.0 – 130) copies/ml, baseline eGFR: 80 (IQR 68.0 – 94.0) ml/min/1.73m<sup>2</sup> and median exposure to TDF: 22.2 (IQR 8.0 – 46.7) months. The prevalence of KTD was 67%. In multivariate analysis, lower CD4 count (odds ratio [OR], 0.995; 95% confidence interval [CI], 0.995 – 0.996; p < 0.001), concomitant exposure to cotrimoxazole (OR, 1.316; 95% CI, 1.083 – 1.599; p = 0.006), and cumulative exposure to TDF over 12 months (OR, 1.266; 95% CI, 1.059 – 1.513; p = 0.010) were independently associated with KTD.

#### Conclusions

KTD was very common and associated with lower CD4 count, concomitant use of cotrimoxazole and long-term exposure to TDF among Nigerian patients on TDF-based combination antiretroviral therapy. Since TDF has become backbone of many HIV treatment regimens, there is need to develop a reliable strategy to detect and preferably avoid tenofovir-associated kidney toxicity.

**Keywords:** Tenofovir, Kidney tubular dysfunction, Human immunodeficiency virus

## ORAL PRESENTATION

### SUCCESSFUL MANAGEMENT OF A JEHOVAH'S WITNESS PATIENT WITH ANCA-ASSOCIATED VASCULITIS FOLLOWING PFIZER-BIONTECH COVID-19 VACCINE, DECLINING BLOOD PRODUCTS

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#### Background

AAV is defined as a systemic autoimmune disease exemplified by necrotizing inflammation limited to small calibre vasculature, and it is in most instances associated with the presence of myeloperoxidase (MPO)-ANCA or proteinase 3 (PR3)-ANCA.

A temporal association between the COVID-19 vaccine and new onset Antineutrophil Cytoplasmic Antibody (ANCA)-associated vasculitis (AAV) has been described.

#### Case report

A 77-year-old woman of Jehovah's witness faith, with a past medical history of hypertension and hypothyroidism received her first dose of Pfizer-BioNTech COVID-19 vaccine, after which she developed malaise, fatigue and diarrhoea consequently worsening following the second dose with associated bipedal pitting oedema and dyspnoea.

At the time of presentation laboratory assessment revealed renal failure and iron deficiency anaemia in the presence of an elevated P-ANCA and a raised myeloperoxidase value. A diagnosis of renal limited anti-MPO-AAV with iron deficiency anaemia was made, however a renal biopsy could not be performed due to the challenge posed by the risk of irrevocable blood loss.

Treatment was initiated with corticosteroids, repletion of iron stores with intravenous iron sucrose and Epoetin-beta administration. Renal replacement therapy was provided however had to be interrupted due to the severe anaemia and the patient's informed decision to decline blood products. The patient agreed on plasma exchange with albumin once the Haemoglobin improved, and additionally received cyclophosphamide after which remission was achieved and the patient successfully discharged from hospital.

#### Conclusion

The case illustrates the perceived association of new-onset renal-limited MPO-AAV after COVID-19 vaccination in an anaemic Jehovah's witness patient. Although Jehovah's Witnesses may refuse transfusion of cellular blood products, they accept and expect alternative effective medical care. Our case is not only unique in describing the uncommon occurrence of AAV following COVID-19 vaccination, but also describes an example of adjusting standard treatment to accommodate a patient's religious views.

## ORAL PRESENTATION

### INCIDENCE AND ONE-YEAR SURVIVAL IN ELDERLY SOUTH AFRICANS STARTING KIDNEY REPLACEMENT THERAPY

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**Background:** Recent data suggests that the one-year survival of South African patients on kidney replacement therapy (KRT) is comparable to that of more developed countries and identified older age as a risk factor for inferior survival. This paper is the first to report on the incidence, treatment modalities and one-year survival of elderly patients on KRT in South Africa.

**Methods:** The cohort included patients with kidney failure aged 65 years and older, who initiated KRT between 1 January 2013 and 30 September 2018. We collected data on potential risk factors for mortality. The Kaplan-Meier method was used to estimate one-year patient survival, while the Cox proportional-hazards model was used to determine the association of risk factors with survival.

**Results:** The cohort comprised 1868 patients. The median age was 71.1 years, 62.7% had diabetes mellitus, and 93.2% had haemodialysis as their first KRT modality. Nearly all patients (99.0%) received KRT in the private sector. A total of 243 patients died within 1 year of initiating KRT, and overall survival was estimated at 86.4% (95% confidence interval 84.8–88.0%). Higher mortality was associated with older age, White and Indian ethnicity, and residence in certain provinces. Neither diabetes mellitus, primary kidney disease nor sex were independently associated with one-year survival.

**Conclusions:** The findings of this study are in line with data from elsewhere, confirming inferior survival in elderly patients on KRT. Since KRT is a severely limited resource in South Africa, the results may inform rationing policies and more equitable delivery of KRT in South Africa.

**Keywords:** kidney replacement therapy; elderly; survival analysis; kidney failure; mortality

## POSTER PRESENTATION

### INVESTIGATING ALUMINIUM LEVELS IN HAEMODIALYSIS PATIENTS

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#### Background

Aluminium excretion is impaired in chronic kidney disease, which can be complicated by the development of bone disease, anaemia and dementia. Haemodialysis patients are exposed to large volumes of water, increasing their risk of aluminium toxicity. Due to improved techniques for solute removal, aluminium toxicity has become a rare phenomenon. However, monitoring remains recommended. After years of acceptable aluminium levels, Groote Schuur Hospital patients were found to have elevated levels and an investigation ensued.

#### Methods

Historical results from routine patient and reverse osmosis water analyses were extracted from 2016 to 2020. The water to which the patients were exposed was systematically analysed to determine if contamination could be from within the circuit, simultaneously with repeat patient analysis. Medications that potentially increased aluminium exposure were excluded by contacting the pharmacy.

#### Results

The analysis of 318 patient aluminium results demonstrated two deviations from the norm: in 2016 all aluminium results were recorded as zero and in 2019 unexpectedly high aluminium levels were noted. Since then, a decline in patient aluminium results has been observed.

Annual water aluminium results in the RO water system from 2016 to 2021 were all below acceptable cut-offs. In 2021, samples from the RO water system were analysed by three different laboratories, as part of this troubleshooting exercise, and all were found to be acceptable, as were the different points tested within the water circuit of the Dialysis Unit (<10 ug/L).

#### Conclusion

The investigation verified that aluminium was truly elevated in the patients but did not determine the cause. Potential sources of contamination included the dialysis and environmental sources. This abstract serves to remind clinicians and dialysis units of the importance in monitoring aluminium levels, ideal aluminium levels and the importance of a multidisciplinary collaborative team approach for the investigation of unexpected results.

**Key Words:** aluminium, toxicity, haemodialysis, contamination, kidney, disease

## POSTER PRESENTATION

### THE EXPERIENCE OF CAREGIVERS AND PATIENTS ATTENDING THE PAEDIATRIC NEPHROLOGY CLINIC AT THE CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL DURING THE COVID-19 PANDEMIC

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**Introduction:** Healthcare services have been disrupted and livelihoods changed due to the COVID-19 pandemic. The paediatric nephrology clinic implemented policies to limit the impact of the pandemic on patients and health care workers.

**Objectives:** The aim of this report is to describe the experiences of patients and their caregivers who attended the nephrology clinic during the first 6 months of the pandemic.

**Methods:** A descriptive study using a questionnaire and a telephonic interview. Caregivers of patients scheduled for out-patient appointments during the period 26 March-30 September 2020 were identified as potential participants.

**Results:** Of the 420 participants identified, 293 (70%) were not contactable, 114 (27%) were enrolled, 12 (2.8%) declined, one (0.2%) withdrew. Three patient deaths were noted from the 420 potential participants, two of the caregivers declined the interview, one withdrew. Of those interviewed, 47 (41%) had appointments rescheduled, 29 (26%) attended the clinic, and 38 (33%) had pending visits. Of all participants interviewed, 93 (82%) were satisfied with the service received and 99 (87%) reported good communication and education. Of those who attended, 20 (69%) felt vulnerable, and 16 (80%) reported a positive experience after clinic attendance. Seventy-six (67%) participants receive a social grant, with acquisition not disrupted during the period. The caregivers of 37 (32%) participants were employed, with 18 (16%) reporting job losses during the study period. COVID-19 testing were reported in 36 patients, with 34 negative results, two unknown. Three participants had tested positive themselves. Participant outcomes were: 105 (92%) well, 8 (7%) did not comment, 1 (1%) unwell.

**Conclusion:** Caregivers reported a positive experience overall. The inability to contact patients is a limitation of this study, and we postulate that telehealth may not be a viable option in this population.

## POSTER PRESENTATION

### ACCURATE RECORDING OF PATIENT DATA IMPROVES PATIENT CARE

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#### **Background**

Fresenius Medical Care uses a digital platform which allows for viewing of patients' data instantaneously.

#### **Method**

The Therapy Data Management System (TDMS) at Fresenius Medical Care, records the patient information from the time the patient is weighed pre dialysis, throughout the treatment as well as the post dialysis weight. Adjustments can be made during the treatment session. Thereby point of care decisions are made while being monitored remotely by the patient's treating Doctor.

The patients' data is securely stored in the European Clinical Database (EuClid). Each patient has a EuClid number thereby keeping the patients ID number and name confidential. The data is collated and analysed and includes the patients' dialysis adequacy as well as aspects of their Cardio Vascular system, Mineral Bone Disease, Anaemia, Nutrition and Diabetes.

Each patient has a 5008S card which stores the patients' current dialysis prescription, including dry weight, which ensures that the patient receives the correct treatment. The patient's card is inserted into the 5008S device, and all the treatment parameters are downloaded onto the device. The patient's current treatment is then uploaded onto the card.

#### **Results**

Over a year (January 2021 to December 2021) trends in Kt/V, weekly treatment time, systolic Bp and Haemoglobin were documented for the whole of the FMC population. Graphs are shown.

Workflow for the staff has been optimized allowing the staff to have more constructive time with their patients.

#### **Conclusions**

Intensive monitoring of patient parameters enabled staff to view trends and apply corrective action where necessary. This has enabled the staff at Fresenius Medical Care to transform the way they work. Due to constant surveillance of patient data risks have been mitigated.

## ORAL PRESENTATION

### CLINICAL AND IMMUNOLOGICAL FEATURES OF COVID-19 INFECTION IN CHILDREN UNDERGOING HAEMODIALYSIS: A SINGLE CENTRE EXPERIENCE

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#### Background

At the onset of the pandemic, adult haemodialysis centres in Wuhan, China, saw large outbreaks of infection with the severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2). This was postulated to be due to the amount of exposure that HD patients have due to travel to the dialysis centre, as well as interactions with other patients, caregivers, and staff members. Another factor was that haemodialysis centres were built as open bay areas, making isolation difficult.

A study performed in a paediatric dialysis unit in Indiana, USA, at the start of the pandemic, found a high prevalence of subclinical seroconversion among patients and staff members. We performed a prospective study to describe the clinical course and seroprevalence of a cohort of dialysis-dependent paediatric CKD-5 patients over a period of 8 months.

#### Methods

Monthly SARS-CoV-2 IgG antibodies were tested in all patients undergoing HD at Nelson Mandela Children's hospital for an eight-month period from June 2021 to February 2022. These were compared with nasopharyngeal PCR findings done for those symptomatic as well as all preadmission PCR swabs.

#### Results

There were 25 patients at the beginning of our study. Two were symptomatic at the start of the study and were confirmed as having COVID-19 by PCR.

Of the remaining 23 patients, 32% (8/25) were IgG positive and 60% (15/25) were IgG negative.

Four months into the study 52% (13/25) had become IgG positive.

By the end of the study, four months later, 80% (20/25) had seroconverted to become IgG positive.

By the end of the study one child had died and one had received a kidney transplant. Both were IgG positive at the time of their exit from the study and have been included as positive for the purposes of the report.

Over the eight months of the study only 2/23 patients (both IgG negative at the onset of the study) developed symptomatic COVID infection confirmed on PCR. Both were only mildly symptomatic, and neither required an admission to hospital for their symptoms or supplementary oxygen. Both these events happened in months seven and eight of the study and both became IgG positive after their infection.

The peak rate of the positive results was in January 2022. This period corresponded with the South African Omicron wave which was reported to be highly infectious but with minimal clinical symptoms.

#### Conclusion

Our study demonstrates that most paediatric patients with dialysis dependent chronic kidney disease will develop subclinical COVID-19 infection, and that the symptomatic group demonstrates less severe burden of disease compared to their adult counterparts.

Of concern is that this patient population still will pose an infection risk to the staff and other patients in the HD unit, and that this could be of serious clinical consequence should a new, and more dangerous, variant of COVID-19 arises in the future.

## POSTER PRESENTATION

### DETERMINANTS OF KIDNEY ALLOGRAFT DYSFUNCTION AT 12 MONTHS POST TRANSPLANTATION IN KENYA

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#### Background

Kidney allograft function at one year provides prognostic information and is influenced by donor, recipient, and other factors. These determinants have not been described in Kenya. This study aimed at assessing the kidney allograft function status at one-year post-transplant and describing risk factors of allograft dysfunction. This information shall help clinicians identify patients at risk of poor function and prioritize early interventions. This shall improve patient outcomes and ensure longevity of the transplant program.

#### Methods

This was a retrospective cohort of all available charts at two transplant centers (Kenyatta National Hospital and Aga Khan University Hospital) for a period of ten years. Selected demographic, clinical, and biochemical data of both the recipients and donors were extracted by using a questionnaire. AKI was defined according to KDIGO guidelines.

Missing data were imputed by multiple imputation methods, Bivariate analysis was done to describe valuables associated with allograft dysfunction. Mixed effect logistic regression model was used to establish determinants of allograft dysfunction at one year. The level of significance was 0.05.

#### Results

Of 240 transplanted patients, 150 charts were available for analysis. The donor median age was 33 years (IQR (28, 39)) with 59% of them being male. Eighty-five percent of donors were first-degree relatives. The majority of recipients were male (71%) with a median age of 36 years. The prevalence of allograft dysfunction was 22.6%. Pre-transplant blood transfusion was common (59%).

We observed a male ( $p = 0.011$ ) and married ( $p = 0.032$ ) predominance, higher rate of pre-transplant blood transfusion ( $p = 0.016$ ), receiving pulse therapy with methylprednisone ( $p$ -value  $< 0.001$ ) and higher rates of AKI in the first 2 months after transplantation ( $p < 0.001$ ) in patients with allograft dysfunction.

A longer duration in surgery more than 3.5 hours, Acute Kidney Injury within the first year, and duration of transplant surgery of more than 3.5 hours were associated with kidney allograft dysfunction at 12 months.

#### Conclusions

1 in every 5 kidney transplant recipients had allograft dysfunction at 12 months. Development of acute kidney injury after being discharged from hospital and transplant surgery of more than 3.5 hours were associated with allograft dysfunction at one year.

## ORAL PRESENTATION

### COMPARISON OF QUALITY-OF-LIFE SCORES IN PATIENTS WITH ADVANCED CHRONIC KIDNEY DISEASE UNDERGOING HAEMODIALYSIS, PERITONEAL DIALYSIS, AND CONSERVATIVE MANAGEMENT AT HELEN JOSEPH HOSPITAL

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#### Introduction

Mental health and quality of life are under-appreciated clinical targets which affect patient and modality survival. Lack of dialysis slots result in assignment to treatment modalities without regard to effects on these parameters. We assessed the effect of dialysis modality, demographic and laboratory parameters on mental health and quality of life measurements.

#### Methods

Size-matched voluntary cohorts were recruited from haemodialysis (HD), peritoneal dialysis (PD), and patients on conservative management (CM). Responses to self-administered Hospital Anxiety and Depression Scale (HADS) and Kidney Disease Quality of Life Short Form 36 (KDQOL-SF36) questionnaires and demographic and baseline laboratory parameters were compared between treatment modalities using the Student t-test and Pearson Chi-square test. Linear regression was used to test for independent effect where significant difference was observed.

#### Results

HADS anxiety score was highest ( $p = 0.0008$ ) and KDQOL-SF36 emotional wellbeing was poorer in HD ( $p < 0.000001$ ). Social functioning ( $p = 0.011$ ) and physical limitation due to pain ( $p = 0.03$ ) were poorer in PD. Unemployment ( $p = 0.044$ ) was more frequent in HD; fewer PD patients required social support ( $p = 0.008$ ). Significant independent effect was found for age ( $p = 0.009$ ), employment ( $p = 0.007$ ), and Hb ( $p = 0.025$ ) on anxiety; HD worsened ( $p = 0.037$ ) and PD improved ( $p = 0.007$ ) anxiety. Unemployment ( $p = 0.0009$ ) and low Hb ( $p = 0.018$ ) worsened depression. PD improved ( $p = 0.002$ ) and HD worsened ( $p < 0.00001$ ) emotional well-being. PD worsened ( $p = 0.0018$ ) social functioning. PD ( $p = 0.007$ ) and higher phosphate ( $p = 0.022$ ) worsened and HD ( $p = 0.01$ ) and higher Hb ( $p = 0.02$ ) improved physical discomfort / pain.

#### Conclusion

Advanced CKD increases anxiety and depression and limits quality of life. PD improves mental health and emotional wellbeing and preserves ability to undertake economic activity but limits social functioning and causes greater physical discomfort. Targeting Hb and phosphate may ameliorate modality effects on mental health and quality of life.

## ORAL PRESENTATION

### ASSESSING THE HYDRATION STATUS OF SOUTH AFRICAN CHILDREN ON CHRONIC HAEMODIALYSIS: A COMPARISON OF TECHNIQUES

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#### Background

Euvolaemia is an important therapeutic goal in chronic kidney disease (CKD) patients on haemodialysis (HD). Clinical estimation of dry body weight may miss changes in lean tissue mass. Body Composition Monitoring (BCM) is reported to be a non-invasive, simple, and fast, tool used to evaluate dry body weight using bio-impedance spectroscopy. We performed a prospective study comparing clinical assessment to bio-impedance measurement to evaluate the reliability of BCM measurement in children with dialysis dependent CKD.

#### Methods

The study was performed on a cohort of 19 stable HD dependent children at a public hospital in Johannesburg. Ten age-matched healthy controls were included to allow for comparison. An estimation of dry weight was performed by BCM, and then an independent and blinded evaluation of dry weight by clinical evaluation was performed by a senior member of the clinical team.

#### Results

Eighteen HD patients were identified as suitable for the study. One excluded due to inappropriate BCM electrode size. The mean age of the patients was 12.58 years (7-18 years). The male:female ratio was 7:10. The commonest primary diagnoses were glomerular diseases (8/17) and congenital abnormalities (3/17). The length of time on dialysis was 24 months (3-52 months). Fourteen patients were completely anuric. Most patients (16/17) were on at least one antihypertensive agent.

Thirty-six measurements were taken on the HD children, and 20 on the controls. Of these measurements, 27/36 showed correlation between the measurement and the clinical assessment. 25/27 of these were in children older than 10 years old and 2/27 on the children group. In all of the controls, the clinical assessment and spectroscopy measurements correlated.

#### Conclusion

BCM appears to provide an objective and clinically applicable assessment of body fluid status that can be used to direct therapy for stable older children on HD. While BCM is accepted in most adult units as being validated for clinical use, more research is suggested on its use in paediatric patients on HD.

## POSTER PRESENTATION

### A FIVE-YEAR RETROSPECTIVE STUDY TO DETERMINE THE CHARACTERISTICS OF RAPIDLY PROGRESSIVE GLOMERULONEPHRITIS FROM THREE TERTIARY HOSPITALS IN GAUTENG, SOUTH AFRICA

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#### Background

Rapidly progressive Glomerulonephritis (RPGN) is a syndrome characterized by rapid deterioration in kidney function and its histological hallmark is extensive crescent formation. It is a heterogeneous disease with various aetiologies.

Recent studies on the aetiologies of RPGN in adults in South Africa have been sparse and this study aims to provide further information on this subject.

#### Methods

The number of renal biopsies displaying crescentic glomerulonephritis from three tertiary hospitals during the study period were scrutinized. The demographical data and the serological test results of ANA, p-ANCA, c-ANCA, ASOT, anti-GBM antibody, C3 and C4 level were recorded. The underlying disease process of each of the RPGN cases were divided into anti-GBM disease, Immune complex mediated, pauci-immune vasculitis, idiopathic or double antibody disease.

#### Results

There were a total of 1513 biopsies performed at the three tertiary hospitals between 1 January 2015 to 31 December 2019. Of these, 980 were native kidney biopsies.

There were 43 cases of crescentic glomerulonephritides (4.38%). The average age was 30.7 years and predominantly female gender. Most of the cases (90.7%) were immune complex mediated and the remainder were ANCA mediated. The underlying cause of the 39 immune complex mediated crescentic glomerulonephritides were lupus nephritis (LN) in 32 (82%), post infection glomerulonephritis (PIGN) in 2 (5%), IgA nephropathy in 1 case (2.6%) and 4 (10.2%) with an undetermined underlying cause.

#### Conclusions

The aetiologies of RPGN vary according to the demographics being studied. In studies from South Africa conducted in the 1980s, the most common cause of RPGN was post infectious GN. This study however found the predominant cause of RPGN to be LN followed by PIGN. This study emphasizes the variation in aetiologies of RPGN in sub-Saharan Africa over the last four decades.

## POSTER PRESENTATION

### A CASE OF MEMBRANOUS GLOMERULONEPHRITIS ASSOCIATED WITH NSAIDs USE

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#### **Background**

Nephrotic syndrome secondary to NSAID use is rare. It is however a unique manifestation of NSAIDs and is exceptionally associated with any other drug related kidney injury. This case illustrates one such peculiar case.

#### **Presentation**

A 74-year-old female was referred with a 4-month history of nephrotic syndrome. She revealed a history of using celecoxib which is a COX 2 inhibitor, five times a day for the last six years for back pain.

She had no other comorbidities or other significant history.

On examination she had a BP of 141/68 mmHg and a HR of 75 bpm. She had grade 2 pitting oedema.

There were no clinical features suggestive of auto-immune disease.

#### **Results**

A thorough work up for nephrotic syndrome was conducted.

She had an albuminuria of 373.8mg/mmol. The urine MCS was bland with no red blood cells or inflammatory cells. Her kidney function was preserved. The virology screen was negative. The ANA, P and C-ANCA, DsDNA were negative. The plasma cell dyscrasia work-up was also negative. Importantly the APLA2R antibody was negative.

A kidney biopsy was conducted. Light microscopy revealed a membranous nephropathy pattern. There were no features of mesangial hypercellularity or endothelial proliferation. The interstitium was unremarkable. The immunofluorescence was strongly positive for IgG alone but interestingly negative for IgG4 as well as APLA2R antibody. The electron microscopy is pending at the time of this submission.

#### **Conclusion**

There is an association between NSAIDs used and membranous nephropathy, and it is likely underreported. It is suggested on kidney biopsy by an absence of interstitial infiltrates or other features typically suggestive of a secondary cause. Its distinguishing feature is that it is IgG4 negative.

Thus, nephrologists are reminded to be vigilant of NSAID use on history taking and when there is an atypical histopathological case of membranous nephropathy. This is important to avoid unnecessary immunosuppression.

## ORAL PRESENTATION

### MONITORING FACTORS INFLUENCING CLOTTING DURING CHRONIC HAEMODIALYSIS THERAPY- PROSPECTIVE STUDY

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**Background:** Chronic kidney disease (CKD) is the presence of kidney damage associated with reduced kidney function often seen by the glomerular filtration rate that is below 60mL/min per 1.72 m<sup>2</sup> over a period of three consecutive months. Haemodialysis (HD) is the hallmark treatment for patients that are diagnosed with end-stage renal failure. Blood coagulation disorders are common in patients with CKD compared to individuals without kidney disease. The resulting thrombi complications have become the most common cause of death and one of the complications in haemodialysis. During haemodialysis factors such as retained air in the dialyzer, the incorrect loading dosage of the administered heparin or incorrect heparin pump flow rate setting contribute to clotting of the extracorporeal system, leading to patient being under-dialysed and losing blood causing anemia. Therefore, this study was performed with the aim of observing common factors contributing to clotting during haemodialysis.

**Methods:** This prospective study included 50 CHD patients from B. Braun Avitum dialysis centres in the Free State province, South Africa. Clotting of the extracorporeal system was monitored and factors contributing to clotting observed during one HD session. The degree of clotting was graded.

**Results:** Twenty-nine from the 50 participants in the study used central venous catheters (CVC) while the remaining 21 used arteriovenous fistula (AVF). 70% CVC patients resulted with clotted lines and dialyser and only 30% of the AVF patients experienced clotting. In CVC patients, clotting was commonly linked to slow blood flow rates and catheter malfunctions while; in AVF patients, it occurred because of incorrect cannulation, leading to machine alarm and intermittent blood pump stop.

**Conclusion:** Clotting during haemodialysis therapy is common especially in individuals using CVC compared to AVF but it is not severe. Reduction in blood flow and machine alarms must be considered when clotting has occurred during HD.

**Key words:** Chronic kidney disease. Haemodialysis. Central venous catheters. Arteriovenous fistula.

## ORAL PRESENTATION

### DEMOGRAPHIC AND CLINICAL PROFILE OF BLACK PATIENTS WITH CHRONIC KIDNEY DISEASE ATTENDING CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL (CMJAH) IN JOHANNESBURG, SOUTH AFRICA

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**Background:** Black patients have an increased risk of developing CKD and end stage kidney disease (ESKD) at significantly higher rates than other races.

**Methods:** A cross sectional study was carried out *between September 2019 to March 2020* on black patients with CKD attending the kidney outpatient clinic at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH) in South Africa. Demographic and clinical data were extracted and were filled in a questionnaire, patients provided blood and urine for laboratory investigations. Data were using STATA version 17; multivariable logistic regression analysis was used to identify demographic and clinical data associated with advanced CKD.

**Results:** A total of 312 black patients with CKD were enrolled during the study period; 58% patients had advanced CKD, of whom 31.5 % had grossly increased proteinuria, 96.7 % had hypertension, 38.7 % had diabetes mellitus and 38.1 % had both hypertension and diabetes mellitus. For patients with advanced CKD, the median age was 61 (IQR 51-69) years, eGFR 33 (30 -39) mL/min/1.73 m<sup>2</sup>, serum bicarbonate 22 (IQR 20 – 24), hemoglobin 12.9 (IQR 11.5 – 14.0) g/d and serum uric acid 0.43 (IQR 0.37 – 0.53). The prevalence of metabolic acidosis was 62.4 %, anemia 46.4 % and gout 30.9 % while the prevalence of metabolic acidosis and anemia was 46.6 % and 25.9 % respectively in those with early CKD. Variables with higher odds for advanced CKD after multivariable logistic regression analysis were hypertension (OR 3.3, 95 % CI 1.2 - 9.2, P = 0.020), diabetes mellitus (OR 1.8, 95 % CI 1.1 - 3.3, P = 0.024), severe proteinuria (OR 3.5, 95 % CI 1.9 - 6.5, P = 0.001), angina (OR 2.5, 95 % CI 1.2 - 5.1, P = 0.008), anaemia (OR 2.9, 95% CI 1.7 - 4.9, P= 0.001), hyperuricemia (OR 2.4, 95 % CI 1.4 - 4.1, P = 0.001), and metabolic acidosis (OR 2.0, 95% CI 1.2 - 3.1, P= 0.005).

**Conclusion** Hypertension and diabetes mellitus were strongly associated with advanced CKD, suggesting a need for primary and secondary population-based prevention measures. Metabolic acidosis, anaemia with low transferrin levels, hyperuricemia and hyperkalemia were highly prevalent in our patients, including those with early CKD, and they were strongly associated with advanced CKD.

**Key words:** Demographic characteristics, clinical profile, black patients, chronic kidney disease

## ORAL PRESENTATION

### SHEDDING OF HIV-1 INTO PERITONEAL DIALYSIS EFFLUENT AND ASSOCIATED RISK FACTORS

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**Background:** Continuous ambulatory peritoneal dialysis (CAPD) is suggested to be a cost-effective kidney replacement modality for managing end-stage kidney failure (ESKF). However, its use in HIV-positive patients raises concerns about risks of HIV transmission to close contact.

**Aim:** To evaluate the rate and risks factors associated with HIV-1 shedding into CAPD effluent in prevalent HIV-positive patients on ART and ESKF.

**Methodology:** This prospective cross-sectional study of HIV-positive ESKF patients managed with CAPD at Universitas Academic Hospital collected enrolled patients' background information, clinical and laboratory data. HIV-1 was detected using quantitative polymerase chain reaction (qPCR) and sequenced by sanger method.

**Results:** There were 36 patients recruited with a median age of 42.1 (IQR, 36.83–48.96) years, and 80.6% were female (95% CI, 64–91%). The median duration of CAPD and ART was 17.3 (IQR, 11–35) months and 8 (IQR, 6–11) years, respectively. Abacavir (88%), Lamivudine (97.2%) and Efavirenz (77.8%) were the predominant ARV drugs used. The HIV-1 was detectable in 44% (16/36; 95% CI, 29%–61%) of plasma samples with a median viral load (VL) of 400 (IQR, 26.35–21900) copies/ml among those with detectable VL and 19% (7/36; 95% CI, 9.3%–36.2%) in CAPD effluents with VL of 33 (22.9–38.2) copies/ml. Patients with detectable HIV-1 had higher plasma VL (25700 vs. 32.5 copies/ml,  $p=0.005$ ), lower blood CD4 cell counts (293 vs 368.5 cells/ $\mu$ l,  $p=0.004$ ) and lower creatinine levels (522 vs. 878) compared to those with undetectable HIV-1. Among those with appreciable VL, 6 patients had major drug resistance mutations detectable, accounting for 4/7 patients with detectable VL on PD, and non-nucleoside reverse transcriptase inhibitor resistance mutations were predominating.

**Conclusion:** HIV-1 particles were detected in CAPD effluents in appreciable amounts despite long-term ARV treatment with uncontrolled HIV infection in plasma, and ARV drug-resistant mutations suggested risk factors.

**Key words:** End-stage Kidney failure, Antiretroviral therapy, HIV-1 Infection, Peritoneal Dialysis

## POSTER PRESENTATION

### PATIENTS WITH END STAGE KIDNEY DISEASE ON DIALYSIS AT A TERTIARY PREVALENCE OF HEPATITIS B AND VACCINATION RESPONSE IN CENTRE IN THE EASTERN CAPE PROVINCE OF SOUTH AFRICA

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**Background:** Hepatitis B virus (HBV) infection remains a concern in dialysis populations where vaccination has been less successful than those in the general population. Possible reasons for poor response to vaccination in this population include malnutrition, age, uraemia, dialysis vintage, human-immunodeficiency virus (HIV) infection and the generalized immunosuppressive state of patients with chronic kidney disease (CKD).

**Methods:** This retrospective study evaluated the prevalence of HBV infection in a dialysis population at a tertiary centre in South Africa where there is a high prevalence of HIV. In addition, antibody responses following natural HBV infection versus vaccination were examined in the same population as well as factors that may affect the HBV vaccination antibody response.

**Results:** The prevalence rate of chronic HBV was high at 6.5% while 44.9% of patients demonstrated evidence of HBV exposure. Patients with naturally acquired immunity demonstrated a more robust and sustained antibody response over the study period, whereas booster dose(s) were required to achieve similar levels of protection in the vaccinated group. Only 2.1% never achieved an adequate seroprotection response to vaccination at any time point during the study period. Older age was the only factor shown to reduce seroconversion after primary vaccination. Despite a high HIV prevalence (22.6%), HIV status did not affect antibody response to vaccination.

**Conclusion:** We therefore conclude that in a high HBV prevalence dialysis group, natural immunity provides sustained and adequate protection. HBV vaccination in this high HIV seroprevalence dialysis cohort was successful but additional booster doses were frequently required to achieve adequate seroprotection.

**Key Words:** Hepatitis B, Dialysis, Prevalence, Vaccination, Immunity, Antibody

## ORAL PRESENTATION

### AN AUDIT OF DIALYSIS WATER QUALITY AT GROOTE SCHUUR HOSPITAL

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#### Background

Hemodialysis patients are exposed to large volumes of water, thus increasing the risk of exposure to contaminants. The reverse osmosis (RO) water is used to prepare the dialysate for patients to minimize risk. Our unit experienced elevated serum aluminium levels in numerous patients. Investigations were done to determine the quality of RO water for compliance.

#### Methods

Full chemical analysis of water was done at least yearly between 2015 and 2022. Two water samples were taken during each period. One was taken prior to the RO to check the aluminium levels from the city water. The second was taken from the permeate return, (after the RO) to check the levels of aluminium and other inorganic contaminants. Dialysate samples were taken for aluminium contamination tests in 2021. Microbial contaminants and endotoxin tests were done monthly.

#### Results

The average dissolved aluminium level for pre-treatment water was 100µg/L, the acceptable level for municipal drinking water is <300µg/L. Permeate return water and dialysate aluminium levels were <10µg/L (acceptable according to AAMI standards). The rest of the inorganic contaminants were within recommended ranges with no growth of yeast or mould. There was only one month, August 2020 that showed an elevated bacterial count >300cfu/ml. The cause was unknown and was possibly due to sample contamination. Corrective action occurred and the RO machine was disinfected. For other months, the average aerobic plate count was 3 cfu/ml, (acceptable <100 cfu/ml). Endotoxin levels were acceptable, < 0.1 EU/ml.

#### Conclusion

RO water and dialysate were not associated with elevated serum aluminium levels, despite the high levels seen in some patients. HD units should perform full chemical analysis of permeate water at least yearly. This will assist with the surveillance of HD patients against contamination. Routine microbial water tests must be done for patients' safety.

Key Words: aluminium, toxicity, water, bacteria, endotoxins, hemodialysis

## ORAL PRESENTATION

### A RETROSPECTIVE STUDY OF THE EPIDEMIOLOGY AND OUTCOME OF PATIENTS WITH DIALYSIS-REQUIRING ACUTE KIDNEY INJURY AT HELEN JOSEPH HOSPITAL, JOHANNESBURG, SOUTH AFRICA

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#### Background

Acute kidney injury (AKI) carries significant morbidity and mortality and is associated with increased costs of treatment. Achieving the goals set by the ISN 0 by 25 Project, requires an understanding of the epidemiology and risk factors for AKI in local settings. We reviewed the epidemiology, risk factors, and outcomes of dialysis-requiring AKI at a tertiary hospital in Johannesburg, South Africa.

#### Methods

A retrospective review was undertaken of all patients undergoing haemodialysis for AKI, as defined by KDIGO criteria at Helen Joseph Hospital during the period 1/1/2019 – 21/12/2020. 3-month outcomes comprising death, development of chronic kidney disease (CKD), and recovery of renal function to pre-morbid levels were also described.

#### Results

A total of 106 patients were included. The mean age at presentation was 44.5 years, and male gender predominated (55%). Sepsis (60.4%), followed by hypovolaemia (16.04%) were the main precipitants of dialysis-requiring AKI. Comorbidities associated with dialysis-requiring AKI included HIV infection (38.7%), hypertension (27.4%) and diabetes mellitus (12.3%). 68.3% (28/41) of HIV positive patients were on a TDF based regimen. Acute gastroenteritis associated with AKI was present in 29.3% (12/41) of those living with HIV. Of the total cohort, 44.3% (47/106) demised in hospital. Sepsis-related AKI had a significantly higher mortality rate than patients without sepsis ( $p = 0.048$ ). A further 13 patients demised within 3 months of discharge; the total mortality rate in this series was therefore 56.6%. 19 patients were lost to follow-up on discharge. Of the remaining 27 patients who completed 3 months of follow-up, 19 achieved complete recovery of renal function, 5 required ongoing renal replacement therapy, and 3 manifested residual CKD.

#### Conclusion

Dialysis-requiring AKI is associated with high risk of mortality. Sepsis is an important cause of AKI in the local context. Significant numbers of patients are lost to follow-up on discharge, hampering assessment of the true cost of AKI.

## ORAL PRESENTATION

### PREVALENCE AND DETERMINANTS OF ENDOTHELIAL DYSFUNCTION AMONG HIV-POSITIVE, ART-TREATED ADULTS AT THE AMINU KANO TEACHING HOSPITAL, KANO, NIGERIA

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#### BACKGROUND

The human immunodeficiency virus (HIV) pandemic remains a worldwide health problem, despite advances in antiretroviral treatment (ART). There are approximately 37 million people living with human immunodeficiency virus (HIV) worldwide, of whom 70% live in sub-Saharan Africa. Endothelial dysfunction constitutes an early pathophysiological event in atherogenesis and cardiovascular diseases (CVD). We aim, to assess the prevalence, determinants, and degree of endothelial dysfunction in HIV-positive patients on HAART by using brachial flow-mediated dilatation (bFMD).

#### METHOD

This was a cross-sectional study of 200 participants, recruited from Aminu Kano Teaching Hospital, Kano Northwestern Nigeria, HIV-infected participants on HAART with no evidence of kidney disease were compared with 200 HIV-negative participants from September 2020 to May 2021. Urine samples were obtained for measurement of albumin and creatinine and UACR was calculated.

#### RESULT

The overall mean age of the study participants was 42±11 years with the control arm having a significantly lower mean age compared with people living with HIV (PLWH) 38±11 versus 46±10 years. The median urine albumin creatinine ratio was 41.6(23.2-162.9) versus 14.5(7.4-27.0). The PLWH had a significantly lower mean % Brachial Artery Flow-Mediation Dilation (BFMD) than non-HIV participants (9.82 %±5.43 versus 12.09 %±9.23). In a fully adjusted linear regression model, HIV status was significantly associated with lower BFMD ( $\beta=-2.82\%$ , 95% CI,  $-4.44\%$  to  $-1.21\%$ ,  $P=0.001$ ), estimated glomerular filtration rate ( $\beta=-0.04\%$ , 95% CI,  $-0.07\%$  to  $-0.01\%$ ,  $P=0.004$ ) and low-density lipoprotein ( $\beta=-1.12\%$ , 95% CI,  $-2.13\%$  to  $-0.11\%$ ,  $P=0.029$ ) were independent predictors of lower BFMD.

#### CONCLUSION

HIV seropositive status, lower estimated GFR and a higher level of low-density lipoprotein cholesterol may be associated with the risk of developing endothelial dysfunction.

**KEYWORDS:** Endothelial dysfunction, CVD, HIV

## ORAL PRESENTATION

### HAEMODIALYSIS PRACTITIONERS' KNOWLEDGE AND PRACTICE ON PREVENTION OF HAEMODIALYSIS VASCULAR CATHETER-RELATED INFECTIONS

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#### **Background**

Haemodialysis (HD) is commonly used as renal replacement therapy for patients with acute, chronic, and end-stage renal disease using intravascular catheters. Globally, organisations produced guidelines on the prevention of infections in HD units. However, patients on HD develop haemodialysis vascular catheter-related infections under the care of healthcare professionals. The study explored the knowledge and practice of HD practitioners on Centre for Diseases Prevention and Control (CDC) evidence-based guidelines for the prevention of haemodialysis intravascular catheter-related infections at selected haemodialysis units in the City of Tshwane.

#### **Methods**

Concurrent mixed-method designs were used. For quantitative data collection, 76 respondents were conveniently sampled, and 10 participants purposefully sampled for qualitative data until saturation was reached. Self-report using google forms survey questionnaires for quantitative data collection. In addition, online platforms and face-to-face methods were used for semi-structured interviews for qualitative data. Descriptive statistics, single-factor analysis of variance was applied to analyse the data and thematic analysis.

#### **Results**

The results revealed that HD practitioners have knowledge of the CDC evidence-based guidelines with the mean level scores of 81%. There were low scores on knowledge related to the type of dressing, intervals for changing of dressing, type of antiseptics, and when to check for signs of infections on the vascular access site. Furthermore, the HD practitioner responses showed that there were gaps in skill practice related to CDC guidelines. Confirmed by the participants' responses, lack of in-service training was one of the limitations for their practice.

#### **Conclusion**

The HD practitioners have good knowledge, but there were gaps in skills practice related to evidence-based guidelines for the prevention of haemodialysis vascular catheter-related infections.

**Keywords:** *knowledge, practice, haemodialysis, HD practitioners,*

## ORAL PRESENTATION

### A DESCRIPTIVE STUDY OF CHRONIC KIDNEY DISEASE (STAGES 3-5) IN CHILDREN AT CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL, 2000-2019

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Background: Kidney diseases have a significant role in the cause of morbidity and mortality worldwide.

**Objectives:** To describe the frequency of kidney failure as well as the characteristics and outcomes of children with chronic kidney disease (CKD) stage 3-5.

**Methods:** An observational, retrospective, record review of children 2 to 14 years of age, diagnosed with CKD stage 3-5 at Chris Hani Baragwanath Academic Hospital from 2000-2019. Data was retrieved from patient files, captured into Microsoft excel spread sheet then exported to STATISTICA 13.5 for analysis.

**Results:** There were 3084 children screened and 226 were eligible. Thirty were excluded due to incomplete records leaving 196 for analysis. The mean age at initial diagnosis was 7.3 years (SD 3.78). One hundred and four (53.0%) were male. Eighty four (42.8%) had CKD stage 5 at initial diagnosis; 65 (33.1%) CKD stage 3 and 47 (23.9%) CKD stage 4. One hundred and three (52.5%) were referred from other hospitals and 27 (26.2%) were from outside Gauteng. Overall, 55 (28.0%) children died and 66 (33.6%) were lost to follow up. The median duration of follow up was 15 months (IQR 4-40). The top five categories of CKD were: glomerular disease (n 73, 37.2%); congenital anomalies of the kidney and urinary tract (CAKUT) (n 64, 32.6%); genetics and syndromes (n 23, 11.7%), voiding disorders (n 17, 8.6%) and acute kidney injury (AKI) (n 9, 4.5%). Sixty seven (63.2%) children with CKD stage 5 at final diagnosis (n106, 54.0%) received peritoneal dialysis (PD). Twenty four (22.6%) had haemodialysis (HD) and 22 (20.7%) received both PD and HD. Six (5.6%) received continuous renal replacement therapy (CRRT) and 42 (39.6%) children were referred for kidney transplant.

**Conclusions:** Children in this cohort presented in kidney failure. Children outside of Gauteng must travel long distances to receive health care.

**Keywords:** chronic kidney disease, children, glomerular, CAKUT, dialysis, transplant.

## POSTER PRESENTATION

### CASE REPORT: COVID ASSOCIATED NEPHROPATHY (COVAN) IN A KIDNEY ALLOGRAFT

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#### Background:

Coronavirus disease 2019 (COVID-19) is a multi-systemic heterogenous disorder. Renal manifestations range from proteinuria, haematuria, acute tubular injury, thrombotic microangiopathy and a recently described podocytopathy. COVID Associated Nephropathy (COVAN), a collapsing glomerulopathy is described mainly in native kidneys with few reports in allografts. We describe a first case in Africa of COVAN in a kidney allograft.

#### Methods:

Mr. ZM, 55-year-old gentleman with end stage kidney disease secondary to hypertensive nephropathy received a non-related living donor kidney transplant in 2010, from his wife. In February 2021 he acquired COVID-19, unvaccinated at that time and received home-based care including oxygen. Mr. ZM received the Pfizer vaccine in May 2021. His eGFR in September 2020 was 36ml/min/1.73m<sup>2</sup> and 27ml/min/1.73m<sup>2</sup> at COVID diagnosis. This decline continued and in February 2022 presented with hypertension, eGFR of 8ml/min/1.73m<sup>2</sup>, and fluid overload necessitating hemodialysis initiation. Oral immunosuppression was stopped, intravenous hydrocortisone initiated, and a renal allograft biopsy was performed. The renal biopsy revealed a collapsing form of focal segmental glomerular sclerosis with moderate interstitial fibrosis and tubular atrophy. There was no evidence of cellular or antibody-mediated rejection, or acute or chronic calcineurin effect. BK virus stains were negative. HIV, parvovirus, and ANA serology were negative. BK virus and CMV viral loads were negative. There was no evidence of tuberculosis or diabetes. No exposure to bisphosphonates, interferon, or heroin. APOL-1 genotyping is pending. Mr. ZM remains dialysis dependent.

**Conclusion:** COVID-19 can cause numerous renal manifestations. COVAN needs to be considered as a cause of allograft dysfunction in a setting of previous or recent COVID-19 infection. This is the first reported case of COVAN in a renal allograft in Africa and highlights the need for renal allograft biopsies in transplanted patients with worsening renal function in the era of COVID-19.

**Keywords:** COVAN, Collapsing nephropathy, Podocytopathy, allograft dysfunction.

## ORAL PRESENTATION

### THE IMPACT OF DIABETES AND HYPERTENSION ON RENAL ALLOGRAFT SURVIVAL- A SINGLE CENTRE STUDY

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#### Background

To determine the impact of pre-transplant diabetes mellitus and post-transplant hypertension (at one year) on renal allograft survival in all adults, first kidney-only transplant recipients at a single transplant centre in Johannesburg, South Africa.

#### Materials and Methods

A retrospective review was conducted of all adults, first kidney-only transplant procedures at the Charlotte Maxeke Johannesburg Academic Hospital transplant unit for the period, 1966 to 2013.

#### Results

For the stipulated timeframe, 1685 adult first kidney-only transplant procedures were performed. Of these, 84.1% were from deceased donors (n=1413/1685). The prevalence of pre-transplant diabetes mellitus transplant recipients with no missing or incomplete records was 6.5% (n=107/1625). Of the total cohort of 1685 adult first kidney-only transplant recipients, 63.6% of those with no missing data survived to one year (n=1072/1685). The prevalence of hypertension at one-year post-transplant was 53.6% (n=503/1072). Hypertension at one-year post-transplant, after an adjusted survival analysis proved a significant (p<0.0001) risk factor for renal allograft loss (HR 1.63; 95% CI 1.37-1.94). Similarly, after an adjusted survival analysis, the risk of renal allograft loss within the pre-transplant diabetes mellitus group was significantly higher (p=0.043, HR 1.26; 95% CI 1.01-1.58).

#### Conclusion

This study identified pre-transplantation diabetes mellitus and post-transplantation hypertension as significant risk factors for graft loss within the population assessed in this region of the world. These factors could, potentially be used as independent predictors of renal graft survival.

## ORAL PRESENTATION

### CULTURAL PRACTICES AND DIET ADHERENCE OF PATIENTS LIVING ON HAEMODIALYSIS

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**Background:** Indigent adherence to diet, medications, and treatment has been esteemed to vary between 20% and 70%, which contributes to increased rate of fatality and morbidity. End stage renal disease (ESRD) necessitates a comprehensive lifestyle change, notably adherence to explicit fluid and diet restrictions especially when receiving dialysis treatment. People from diverse cultures consume different diets. Culture and society are important components in modelling a person's diet.

At times irrespective of the patient's ethnic and cultural dining preferences novel dietary behaviours need to be adopted to prevent short- and long-term systemic complications, particularly in the late stages of ESRD. Patients who suffer from ESRD need to minimize their potassium, sodium, and protein intake, as their kidneys are unable to excrete these toxins and maintain acceptable plasma levels of these elements.

*Methods:* A qualitative, descriptive, and exploratory study design was applied. The purposeful sample comprised of 20 participants receiving treatment at a haemodialysis unit in Kwa-Zulu Natal. Data was collected through semi-structured individual interviews, using questions. Data were analysed using open coding to identify themes and categories. Strategies were implemented to ensure trustworthiness and ethical conduct.

**Results:** The themes identified were Cultural practices regarding diet, Challenges patients experience with adherence to a renal diet and Patient education and involvement of family members in their dietary choice. The social support required by this group of patients is unique and health care professionals need to provide holistic support that is tailored to address the dietary needs of this group of patients.

**Conclusion:** The findings revealed that ESRD patients experienced challenges with cultural practices and diet adherence while living on haemodialysis. It is imperative that regular health education is provided regarding renal diets, considering patients' cultural influences. The importance of adhering to a renal diet is considered critical to health and the quality of life.

## POSTER PRESENTATION

### AN EVALUATION OF CLINICAL, BIOCHEMICAL, RENAL HISTOLOGY AND OUTCOMES OF PATIENTS WITH MESANGIOCAPILLARY GLOMERULONEPHRITIS (MCGN) IN HIV POSITIVE COMPARED TO HIV NEGATIVE PATIENTS AT A TERTIARY HOSPITAL, IN CAPE TOWN, SOUTH AFRICA

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#### Introduction

Mesangiocapillary glomerulonephritis (MCGN) is a common (11.8% of all GN) cause of chronic kidney disease in developing countries. The prevalence of HIV in South Africa is 20.4% with 13.1% of people with HIV (PLWH) developing HIVAN. MCGN is also reported in PLWH.

The aim of this study was to compare the clinical and biochemical features at renal biopsy between PLWH and HIV negative individuals with a diagnosis of MCGN and to review renal function up to 24 months.

#### Materials and Methods

A retrospective cohort study was conducted. All patients with a diagnosis of MCGN on renal biopsy performed between January 2010 and December 2017 at Groote Schuur Hospital were assessed.

Renal outcomes (40% decline in eGFR or progression to ESRD) were assessed at 6, 12 and 24 months. Age, sex, use of illicit drugs, date of initiation of ART, blood pressure, presence of edema, and need for renal replacement therapy, HIV status, CD4 count, viral load, albumin, cholesterol, haemoglobin, and serum creatinine, eGFR and uPCR at biopsy, 6, 12 and 24 months were recorded.

#### Results:

A total number of 116 patients were included in the study, of which 27 were HIV positive (23.2%). Forty-one (35%) patients were female. There was a higher frequency of males in the HIV-negative group [63 (70.8%) vs. 12 (44.4%),  $p=0.02$ ].

Edema was more common in HIV-negative patients [66/86 (76%) vs. 12/25 (48%)  $p=0.011$ ].

Serum Cholesterol at the time of biopsy was lower in the HIV negative group [4.9 (3.9-6.8) vs. 6.2 (4.1-11.1)  $p<0.0001$ ].

Baseline creatinine, eGFR and UPCR were not different between the groups.

Creatinine and eGFR at 6 months for HIV negative vs. PLWH [82.5  $\mu\text{mol/L}$  (69.7  $\mu\text{mol/L}$  – 107  $\mu\text{mol/L}$ ) vs 105  $\mu\text{mol/L}$  (74.5  $\mu\text{mol/L}$  - 148  $\mu\text{mol/L}$ ),  $p=0.028$ ] and 91  $\text{ml/min/1.73m}^2$  (72.5  $\text{ml/min/1.73m}^2$  – 126  $\text{ml/min/1.73m}^2$ ) vs. 78.5  $\text{ml/min/1.73m}^2$  (41.2  $\text{ml/min/1.73m}^2$  – 112.2  $\text{ml/min/1.73m}^2$ ),  $p=0.016$ .

Creatinine and eGFR at 12 months for HIV negative vs. PLWH [92  $\mu\text{mol/L}$  (75.2  $\mu\text{mol/L}$  – 114  $\mu\text{mol/L}$ ) vs. 115  $\mu\text{mol/L}$  (89.5  $\mu\text{mol/L}$  -237.2  $\mu\text{mol/L}$ ),  $p=0.023$  and 85.5  $\text{ml/min/1.73m}^2$  (57.5  $\text{ml/min/1.73m}^2$  – 105.5  $\text{ml/min/1.73m}^2$ ) vs. 66.5  $\text{ml/min/1.73m}^2$  (23  $\text{ml/min/1.73m}^2$  - 97  $\text{ml/min/1.73m}^2$ ),  $p=0.053$ .

#### Conclusions:

Despite no differences in creatinine levels at the time of biopsy, PLWH fared worse, with higher creatinine levels and lower eGFR at 6 and 12 months. Furthermore, more PLWH died during follow up, suggesting that HIV positive patients with MCGN carries a poorer prognosis.

## POSTER PRESENTATION

### AN UNUSUAL ASSOCIATION OF FOCAL SEGMENTAL GLOMERULOSCLEROSIS AND MULTIPLE MYELOMA

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#### Background

Focal segmental glomerulosclerosis (FSGS) is a common histopathological diagnosis in adults with nephrotic syndrome and can be classified into primary, secondary, genetic, and unknown forms. Multiple myeloma is a haematological malignancy that may present with renal involvement, however FSGS in multiple myeloma is rare. There are only 9 documented cases, none in Africa. We herein report a case of a forty-year-old female with the unusual presentation of FSGS and multiple myeloma.

#### Methods

A 40-year-old African female, with a medical history of three unprovoked deep vein thromboses presented to the Charlotte Maxeke Johannesburg Hospital Nephrology clinic with clinical and biochemical features of nephrotic syndrome. A biopsy revealed FSGS. The secondary work-up was all negative, a diagnosis of primary FSGS was assumed and the patient started on high dose steroids. Following a relapse, Tacrolimus was initiated, and remission achieved.

The patient later presented with a symptomatic anaemia and bone pain, a skeletal survey and bone marrow aspirate confirmed the diagnosis of multiple myeloma (within six months of the histological diagnosis of primary FSGS). Diagnosing the multiple myeloma was a challenge as serum paraprotein and serum free light chain levels were repeatedly rejected by the laboratory as the samples were deemed 'too viscous' for analysis.

The patient is presently being managed at the specialist oncology clinic and is receiving steroids, thalidomide and cyclophosphamide for her myeloma with good response. Tacrolimus has been withdrawn and the patient's FSGS remains in remission and her renal function normal. Her paraprotein level remains elevated but she has had a good clinical response.

#### Conclusions

This is the first reported case in Africa of FSGS in a patient with multiple myeloma. It documents the rare correlation between multiple myeloma and FSGS and highlights the importance of investigating patients with unknown FSGS for possible plasma cell dyscrasias.

## ORAL PRESENTATION

### PERITONEAL DIALYSIS-RELATED PERITONITIS AND OUTCOMES IN A TERTIARY LEVEL HOSPITAL IN JOHANNESBURG

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#### Background

In the resource-constrained public health care sector of South Africa, limitations in chronic haemodialysis (HD) availability and long wait-list periods for renal transplantation require that units take steps to promote Peritoneal dialysis (PD) longevity. We investigated the effect of PD-related peritonitis on patient and modality survival.

#### Methods

We retrospectively reviewed the aetiology and outcomes of peritonitis in all patients (n = 149) receiving PD at Helen Joseph Hospital (HJH) during the period 1/1/2013 - 31/12/2018. Survival curves were fitted using the Kaplan Meier method and analysed using the Cox Mantel F test. Hazard ratios for outcomes were determined using Cox proportional hazards modelling.

#### Results

The overall peritonitis rate was 1 episode of peritonitis per 24.35 patient months. Gram positive isolates were the most frequent cause of peritonitis (63 cases, 43.45%), followed by gram negatives (44, 30.34%), and culture-negative (31, 21.38%); fungal peritonitis (4, 2.76%) and *Mycobacterium tuberculosis* (3, 2.07%) were rare isolates. All-cause modality failure occurred in 34 (28.10%) of study patients; the majority (26, 76.47%) were peritonitis related. The risk of modality failure was higher in those patients developing peritonitis (HR 2.79 95% CI 1.22 – 6.38, p =0.014), and modality survival was poorer in this group compared to those who remained peritonitis-free (p = 0.0002). The time to the first episode of peritonitis correlated with the duration of modality survival (r = 0.765, p < 0.000001). A 30.08% (n=37) all-cause mortality was documented on study completion; there was no difference in patient survival between peritonitis groups (p = 0.320).

#### Conclusion

Peritonitis rate in this cohort was acceptable by ISPD standards, and technique and patient survival similar to that reported internationally. Peritonitis remains an important factor in technique survival, simple interventions in patient education and selection of appropriate patients for peritoneal dialysis may assist in reducing the rate of peritonitis.



## INVITED ORAL PRESENTATION

### **HISTORY AND DEVELOPMENT OF NEPHROLOGY NURSING IN SOUTH AFRICA – ROLE OF THE RENAL CARE SOCIETY OF SOUTH AFRICA**

Dr Heilie Uys

Honorary Life Member RCSSA

The mission of the Renal Care Society of South Africa (RCSSA) is to advance the professional development of members practicing in nephrology, transplantation, and related therapies, and to promote the highest standards of patient care.

Established in May 1975, RCCSA operates under a constitution and serves its members through a national Executive Committee.

This presentation will include the following:

- Founding of RCSSA and the start of national and international networking
- Inter-continental outreach
- Profile of RCSSA membership
- RCSSA projects
- Training of Nephrology Nurses
- Statistical analysis of nursing in SA in comparison with the rest of the world
- Nephrology Nursing challenges

## ORAL PRESENTATION

### RECORD REVIEW OF POST-HAEMODIALYSIS BLOOD RESULTS TO ASSESS ADHERENCE TO GUIDELINES FOR END STAGE RENAL DISEASE

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#### Background

End Stage Renal Disease is an irreversible decline in kidney function and fatal in the absence of renal replacement therapy. Resource constraints in the South African public healthcare sector limit patients' access to renal replacement therapy: here 14.8% are on haemodialysis compared to 85.2% in private dialysis units. Quality indicators in internationally accepted guidelines address complications of End Stage Renal Disease for patients on haemodialysis to reduce mortality and morbidity. Monitoring clinical outcomes for patients on haemodialysis is essential for good quality of life.

#### Aim

To design and validate a record review template for monitoring and describing target and actual outcomes for each clinical indicator to assess adherence to established guidelines.

#### Methods

Design: Retrospective chart review.

Participants: Patient records were accessed from an electronic database in 8 private units between 01 January and 31 December 2018.

Data instruments: Data were captured and analysed in SPSS. DAG Stat was used for the Kappa statistic for interrater reliability (test-retest). A *P*-value of <0.05 was taken as significant.

#### Results

Of the dialysis population (N=412) for the study period n=243 (58.98%) records were excluded. The median age of the convenience sample (169/412, 41.01%) was 60 years (IQR: 21-86), comprising 100/169 (59.17%) males and 69/169 (40.8%) classified as Coloured. Most patients (55/169, 32.54%) had Diabetic Nephropathy. Suboptimal dialysis adequacy (Kt/V levels) was present in 86/133 (64.6%) of the patients, similarly 102/166 (62.5%) for serum phosphate. Arteriovenous fistula or graft is recommended for vascular access for HD and 112/169 (66.27%) patients had either. While all patients should receive erythropoiesis stimulating agents and iron therapy, 110/169 (65.08%) and 104/169 (61.53%) respectively did. For the required phosphate binders and Vitamin D supplements there were recordings for 57/169 (33.72%) and 54/169 (32.72%) patients respectively.

#### Conclusion

Adherence to clinical guidelines for 3/5 quality indicators was considered unsatisfactory which has implications for patients' quality of life.

**Keywords:** Anemia, Arteriovenous Fistula, Chronic Kidney Disease, Guideline Adherence, Health Personnel, Kidney Failure-Chronic, Mineral Bone Disorder, Serum Albumin, Treatment Outcome and Treatment Practice Guidelines. [MESH] checked (September 2019)

## ORAL PRESENTATION

### COVID-19-RELATED ACUTE KIDNEY INJURY AND DIALYSIS: WHAT ARE THE OUTCOMES IN SOUTH AFRICA?

Wesley van Hougenhouck-Tulleken, Muhammed Hussain, Claudia Do Vale

**Introduction:** Acute kidney injury (AKI) in hospitalized patients infected with COVID-19 is associated with an elevated mortality rate compared to non-infected patients (39% versus 24%). This is despite a lower prevalence of AKI in COVID-19-infected patients (17 vs 22%). The reasons are multifactorial and have been well documented in developed countries, whereas in developing countries there are scant data.

**Methods:** This study aimed to document the mortality in COVID-19-infected South African patients who required dialysis for AKI. Exclusion criteria included any chronic kidney replacement therapy (transplantation or dialysis). A REDCap survey of South African nephrologists and nephrology fellows registered with the South African Nephrology Society was conducted. The primary outcome was all-cause in-hospital mortality, while additional points of interest included comorbidities, dialysis modality and intervention required. Univariate analysis of mortality predictors was performed.

**Results:** The COVID-19-related AKI mortality rate was 58.9%. Significant predictors included continuous veno-venous haemodialysis therapy, invasive ventilation, use of inotropes and the presence of shock. Ischaemic heart disease, heart failure and admission to a private healthcare facility were associated with lower mortality. No significant associations were found with ethnicity, sex, hypertension, diabetes, HIV infection or the use of other modes of dialysis.

**Conclusions:** In South African patients, we report similar outcomes in critically ill patients requiring dialysis for AKI, relative to international data. The predictors of mortality most likely reflect the severity of the illness in our patients. The data suggest that continuous veno-venous haemodiafiltration or slow low efficiency dialysis may be the preferred dialysis modalities in these patients.

## ORAL PRESENTATION

### IMPROVING QUALITY RENAL CARE THROUGH HEALTH LITERACY TESTING

E van Rensburg, Prof M Reid, Dr M Pienaar, M Nel

Department of Nursing, UFS; Department of Biostatistics, UFS

**Background:** Self-management and decision-making are critical skills needed to improve the quality of renal care dialysis patients receive. Self-management in dialysis patients is associated with limited health literacy. The general health literacy status of Sesotho-speaking dialysis patients in the Free State province of South Africa is unknown, creating a void in managing the disease optimally. The objectives were to establish the health literacy associations between Sesotho-speaking patients receiving haemo- and peritoneal dialysis at private and public dialysis centres, and associations between patients' health literacy levels, demographic variables, and appraisal and understanding of information.

**Methodology:** This multi-centre, cross-sectional study, utilised the Sesotho Health Literacy Test (SHLT), focusing on appraisal and understanding of information, to assess health literacy levels. Dialysis patients (n=420; n=263) in private (n=6) and public (n=4) healthcare sectors in four towns of the Free State province were included. Frequencies and percentages for categorical data, and medians and percentiles for numerical data, were calculated per group utilising the Chi-square or Fisher's exact tests for categorical data and the Kruskal-Wallis test for numerical data.

**Results:** Within the private / public sectors, respondents (263) received haemodialysis (n=109; n=88) and peritoneal dialysis (n=3; n=63). No significant statistical associations were found between the health literacy levels of haemo- and peritoneal dialysis respondents ( $p=0.80$ ) or between the two healthcare sector groups ( $p=0.58$ ). Respondents presented with low (n=34, 12.9%) and moderate (n=130, 49.4%) health literacy levels. Dialysis patients' education level ( $p<0.1$ ) and their scores obtained in appraisal and understanding questions ( $p<0.01$ ) were significantly associated ( $p<0.01$ ) with limited health literacy levels.

**Conclusion:** The majority of patients obtained a less than desirable health literacy score, necessitating healthcare workers to recognise these patients' potential difficulty to adapt to, manage, and understand dialysis complexities. The quality of renal care of Sesotho speaking dialysis patients may improve if their health literacy levels are known.

## POSTER PRESENTATION

### ACUTE KIDNEY INJURY IN BURN VICTIMS

Luthando Vazi<sup>1</sup>, Wayne Kleintjes<sup>2</sup>, Mogamat-Yazied Chothia<sup>1</sup>

<sup>1</sup>Division of Nephrology, Department of Medicine, Faculty of Medicine and Health Sciences, Stellenbosch University and Tygerberg Hospital; <sup>2</sup>Burns Unit, Department of Surgery, Faculty of Medicine and Health Sciences, Stellenbosch University and Tygerberg Hospital

#### Background

Acute Kidney Injury (AKI) remains a common complication of burn victims, which is associated with high morbidity and mortality. The study objectives aimed to identify the incidence of AKI in all admitted burn victims, causes of AKI and in-hospital mortality.

#### Methods

A retrospective cohort study was conducted on patients admitted to Tygerberg Hospital Burn Unit from 1 April 2018 to 31 March 2019. All burn patients over 18 years were included. Patients with end stage kidney disease, cold burn wounds, skin donors or patients requiring readmission were excluded. KDIGO 2012 AKI criteria were used. Multivariate logistic regression was performed to identify predictors of AKI and death. Kaplan-Meier survival analysis was also performed.

#### Results

A total of 215 patients were included in the study with 58 (27%) developing AKI. The distribution of AKI by KDIGO stage one, two and three were 59%, 28% and 14%, respectively. The most common burn mechanisms were open fires (37%) and shack fires (17%). Patients with AKI had a higher abbreviated burn severity index (ABSI) score (7 vs. 5,  $P<0.01$ ), required more mechanical ventilation (69% vs. 33%,  $P<0.01$ ) and had more infectious complications (35% vs. 12%,  $P<0.01$ ). Predictors of AKI included ABSI score (adjusted OR [aOR] 1.35,  $P=0.04$ ), high admission lactate (aOR 1.64,  $P=0.04$ ) and male sex (aOR 4.22,  $P=0.01$ ). Mortality was higher in patients with AKI (34% vs. 6%,  $P<0.01$ ). Only the ABSI score (aOR 2.46,  $P<0.01$ ) predicted death. On survival analysis, AKI was associated with higher mortality (log-rank,  $P<0.01$ ).

#### Conclusion

This study showed a high prevalence of AKI in burn victims requiring tertiary care and was associated with high mortality. By improving the conditions of patients living in informal settlements, the frequency of burns and its complications may be avoided.

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Luthando Vazi<sup>1</sup>, Wayne Kleintjes<sup>2</sup>, Mogamat-Yazied Chothia<sup>1</sup>

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## POSTER PRESENTATION

### **COST-EFFECTIVENESS AND BUDGET-IMPACT ANALYSIS OF TENOFOVIR ALAFENAMIDE VS. TENOFOVIR DISOPROXIL FUMARATE OR ENTECAVIR FOR CHRONIC HEPATITIS B TREATMENT IN SOUTH AFRICA**

João Carapinha<sup>1</sup>, Mark Sonderup<sup>2</sup>, [Nicola Wearne](#)<sup>3</sup>

Syenza, Anaheim, United States of America<sup>1</sup>, Division of Hepatology<sup>2</sup>, Division of Nephrology and Hypertension<sup>3</sup>, University of Cape Town and Groote Schuur Hospital, Cape Town, South Africa

**Background** The aim of chronic hepatitis B (CHB) treatment is to suppress viral replication, thereby preventing progression to cirrhosis (compensated, CC or decompensated cirrhosis, DC) and hepatocellular carcinoma (HCC). Treatment options include tenofovir alafenamide (TAF), tenofovir disoproxil fumarate (TDF) or entecavir (ETV). TAF is a novel treatment that provides improved kidney function and bone mineral density compared to TDF. The cost-effectiveness (CE) and budget impact of introducing TAF was investigated from a private medical scheme perspective in South Africa for over 60 years and 5 years, respectively.

**Methods** The CE model was developed using Discretely Integrated Condition-Event Simulation framework to compare TAF vs. TDF or ETV. Outcomes included chronic kidney disease stage 3 (CKDIII), dialysis, renal transplantation (RT), CC, DC, HCC, and liver transplantation. Costing inputs were sourced from medicines price registry, published literature, expert opinion, a pathology practice and a private hospital. Clinical outcomes and health-related quality of life inputs were sourced from literature and applied to the disease-related states.

**Results** TAF resulted in an overall reduction in CC, HCC, CKDIII, end-stage kidney disease and more HBeAg seroconversion events when compared to TDF or ETV. The incremental cost-effectiveness ratio of TAF vs. TDF or ETV resulted in TAF as the dominant option, costing less with more quality-adjusted life-years. The incremental cost per member per month for TAF was 24 cents (2022) and increased to 81 cents (2026) with market share increments. Medicine costs (R49.6 million) accounted for 14% of total costs (R364.8 million) which included disease management, CKDIII, dialysis, RT, CC, DC, and HCC.

**Conclusion** The model results suggested that TAF will provide better health outcomes and lower costs for CHB patients in South Africa. These benefits were reported to be greater among patients at high risk for renal complications due to its feature of preserving kidney function.

**Keywords:** tenofovir alafenamide, Hepatitis B Virus, cost-effectiveness analysis, budget-impact analysis.

## POSTER PRESENTATION

### THE EFFECT OF SEVERE DROUGHT AND WATER RESTRICTIONS ON PERITONITIS

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1. Nephrology and Hypertension, Groote Schuur Hospital, University of Cape Town
2. Department of Medicine, Groote Schuur Hospital, University of Cape Town
3. University of Cape Town

#### **Background:**

Due to climate change, an estimated 55 million people globally are affected by droughts every year. By 2030, an estimated 700 million people are at-risk of being displaced as a result of drought. South Africa [SA] performs most peritoneal dialysis in Africa. The Western Cape province, SA, suffered a severe drought between 2014 – 2018. This study aimed to evaluate the impact of this drought and water restrictions on peritonitis rates.

#### **Methods:**

This observational cohort study was performed at Groote Schuur Hospital, Cape Town, SA. We reviewed the influence of severe water restrictions in the “drought period” (2015 – 2019) and compared this to the “pre-drought” (2007 – 2014) period. Peritonitis rates, organisms cultured, technique and patient survival were assessed.

#### **Results:**

There were 185 patients evaluated in the “pre-drought” period and 137 during the drought. The median age was 38 years (31-46), 51% were male, 8 % diabetic and 7% had HIV. On comparison at baseline, the “drought period” had a significantly higher APD usage (20%,  $p=0,004$ ) and less hypertension ( $p=0,013$ ). In the “pre-drought” period there were 281 peritonitis events compared to 220 during the drought. There was a significant increase in gram-negative organisms during the drought ( $p=0.003$ ). Peritonitis due to E. Coli significantly increased during this period ( $p=0,025$ ), pseudomonas, although not statistically significant, increased from 18% to 25% ( $p=0,414$ ). There was no increase in technique failure or mortality from peritonitis during the drought.

#### **Conclusions:**

This study described increased gram-negative peritonitis events during a severe drought in the Western Cape Province, SA.

## ORAL PRESENTATION

### THE EVOLVING SPECTRUM OF RENAL HISTOLOGY IN HIV POSITIVE PATIENTS IN SOUTH AFRICA IN THE ANTIRETROVIRAL AND TUBERCULOSIS ERA

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4. Department of Infectious Diseases and HIV Medicine, Kings College, London

#### Introduction

The spectrum of HIV related kidney diseases is evolving. HIVAN has decreased in regions where antiretroviral (ART) roll-out and compliance is effective. South Africa [SA] remains challenged by the highest burden of HIV, a combined epidemic of tuberculosis [TB] and increasing numbers living longer on ART. This study aimed to review HIV positive kidney biopsies between 2005 -2020 to establish trends in pathology and determine how altering ART regimens have influenced pathology.

#### Methods

This study prospectively included all HIV positive patients undergoing a kidney biopsy at Groote Schuur Hospital from 2008 and retrospectively (2005-2007). Ethics approval was obtained [UCT HREC:R048/2019 & 109/2020]. Baseline clinical, demographic and laboratory data [ age, gender, sex and ethnicity, HIV viral load, CD4 count, creatinine, eGFR, UPCR, kidney size, dialysis status and evidence of TB were collected. Other bloods included haemoglobin, albumin, hepatitis B, C and other serology. A detailed drug history was obtained. Four time periods were made for comparison according to ART rollout initiatives in the Western Cape Province

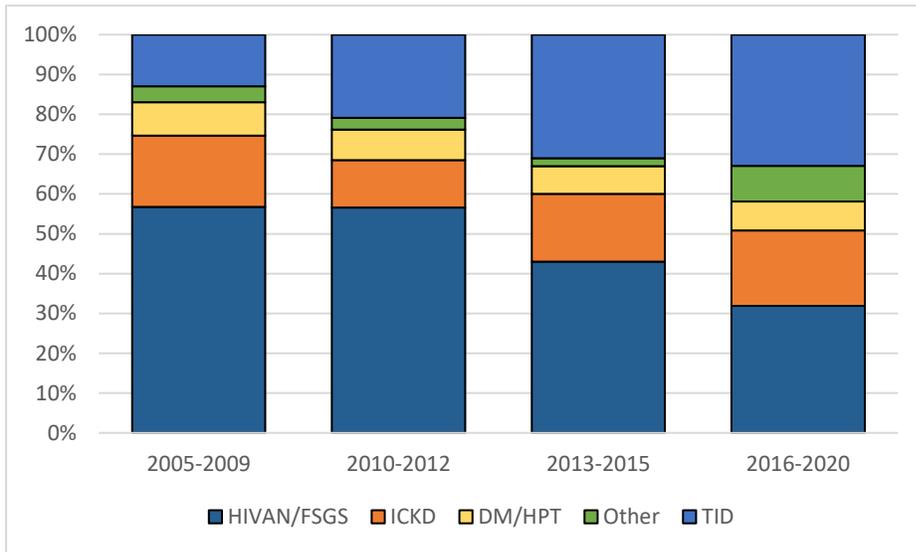
#### Results

671 biopsies were reviewed, HIVAN was the most common primary diagnosis 293/671 (44%). In the last period [2016-2020]: multivariate analysis confirmed that there was a significant decrease in the odds of HIVAN [OR 0.45; CI 0.28-0.7 (p= 0.001)] The odds of primary tubulointerstitial disease increased during this time period [OR 2.51; CI 1.42-4.43 (p = 0.002)]. Figure 1. Granulomas were prominent with 68% attributed to TB. During this period biopsies were performed predominantly as in-patients with high a creatinine 449µmol/L (175-883) and low CD4 counts < 200 cells/mm<sup>3</sup>. The prevalence of immune complex glomerulonephritis remained constant with mesangiocapillary glomerulonephritis the most common.

#### Conclusions

To our knowledge this is the largest biopsy series in HIV positive patients. ART has shifted the landscape of kidney disease with a decrease in HIVAN and a significant increase in tubulointerstitial disease.

Figure 1



## ORAL PRESENTATION

### PATIENTS' PERSPECTIVES ON FLUID MANAGEMENT ON A HEMEODIALYSIS PROGRAMME

Xolo Xolisa

National Renal Care

#### BACKGROUND

The purpose of this study was to evaluate the reasons for fluid overload and to make recommendations to prevent fluid overload.

#### METHODS

This was a prospective, qualitative, and quantitative study, consisting of 30 patients on chronic hemodialysis (CHD) from a single National Renal Care unit in Berea; Kwa-Zulu Natal. The sample patients had episodes of fluid overload between dialysis sessions of 3 liters and more. Insight to fluid management was assessed by questionnaires that were disseminated to the patients. It interrogated their perspective on fluid management. Confidentiality and privacy were maintained.

Questionnaires were used to collect data; the responses were analyzed with SPSS version 25.0. Inferential techniques include the use of chi square test values, which are interpreted using the p-values.

#### RESULTS

The results show that 23.3% of patients controlled their fluid intake, 26.7% gained 3-3.5 liters of fluids in-between sessions; 43.3% gained 3.6-4.0 liters; 30% gained >4 liters. Salt intake, 43.3% of patients did not monitor their salt intake; 43.3% did it sometimes, 3.3% always monitored their salt intake.

Furthermore, 66.7% of patients had been educated about appropriate fluid intake and 30% knew about high fluid content types of foods. Only 10% of patients kept track of urine output compared to fluid intake whereas 66.7% of patients knew the appropriate amount of fluids they should gain in-between dialysis sessions. A fifth (20%) of patients had been hospitalized for fluid overload.

#### CONCLUSIONS

More than 70% of patients on haemodialysis could not control their fluid intake regardless of the education they received. Surveys which look at their lifestyles (related to diet; fluid restrictions) is recommended.

**KEYWORDS:** hemodialysis