

ORAL:

Lecture: Recipient Evaluation

John S. Gill, MD.

11:00 AM - 11:30 AM

Course: Kidney Transplantation

Session: II. Identifying Recipients and Donors

Date/Time: Tuesday, November 11, 2014 10:15 AM - 1:30 PM

Location: Room 204-C

Lecture: Innovation and Ethics of Maximizing Kidney Donation: Paired Exchange, O Donors, and Other Strategies

John S. Gill, MD.

10:10 AM - 10:35 AM

Course: Innovation in Kidney Disease, Dialysis, and Vascular Access

Session: II. Transplantation

Date/Time: Wednesday, November 12, 2014 10:10 AM - 11:25 AM

Location: Room 118-A

Abstract: [TH-OR048] eGFR Level and Its Past Trajectory for Risk of Progression to End-Stage Renal Disease: Meta-Analysis of 22 Cohorts in the CKD Prognosis Consortium

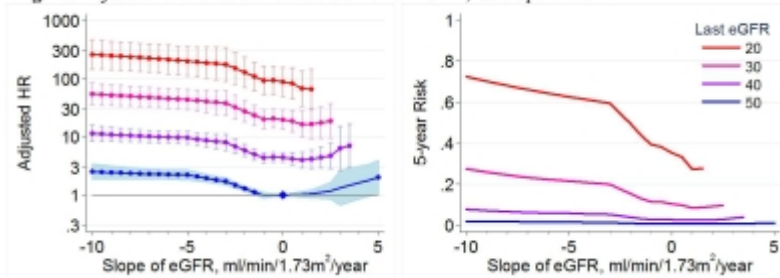
Csaba P. Kovesdy, MD, Josef Coresh, MD, PhD, FASN, Shoshana Ballew, PhD, Mark Woodward, PhD, David M. Naimark, MD, Joseph V. Nally, MD, Adeera Levin, MD, Dietrich Rothenbacher, MD, PhD, Benedicte Stengel, MD, PhD, Kunitoshi Iseki, MD, Kunihiro Matsushita, MD, PhD, Andrew S. Levey, MD. CKD Prognosis Consortium.

4:30 PM - 4:42 PM

Background: The level of eGFR is a potent predictor of risk for progression to end-stage renal disease (ESRD). In practice, rate of progression is inferred from the past trajectory (slope) of eGFR decline. It is unclear how much prognostic information is provided by the current eGFR vs. the past slope. **Methods:** Slopes were estimated from all eGFR values in a 3-year baseline period of 13 CKD and 9 general/high-risk cohorts. We modeled the hazard ratios (HRs) of subsequent ESRD as a spline function of eGFR slopes after adjusting for age, sex, race, last eGFR, and co-morbid conditions compared to no eGFR decline. We used random effects meta-analyses to combine results across studies, stratified by type of cohort. We calculated the absolute risk of ESRD at 5 years after the last eGFR period using the weighted average baseline risk. **Results:** 1,080,221 participants experienced 5,159 ESRD events during a mean follow-up period of 2.0 years after the baseline period. In CKD cohorts the last eGFR was associated with a stronger HR than past decline (Figure, left panel), but both contributed substantially to the absolute risk of ESRD

(Figure, right panel). Similar results were observed in the general/high risk cohorts. Results were similar when using different baseline periods for slope assessment and when adjusting for last albuminuria.

Figure. Adjusted hazard ratio and absolute risk of ESRD, vs. slope of eGFR



Conclusions: Risk of progression to ESRD is primarily associated with the current eGFR, but past slopes of eGFR decline can add further detail to risk assessment.

Funding: NIDDK Support

Course: Annual Meeting: Abstract Sessions

Session: CKD: Epidemiology and Outcomes

Date/Time: Thursday, November 13, 2014 4:30 PM - 6:30 PM

Location: Room 202

Abstract: [TH-OR054] Different Biomarker Profiles Identify Chronic Kidney Disease Patients of Different Etiologies at the Highest Risk of Mortality before Progression to Dialysis Dependence

David Langsford, MBBS, Ognjenka Djurdjev, Mila Tang, Adeera Levin, MD. Division of Nephrology, University of British Columbia; BC Renal Agency; on behalf of CAN PREDDICT Steering Committee.

5:42 PM - 5:54 PM

Background: No model exists for predicting mortality in chronic kidney disease (CKD) patients despite the high risk for mortality in later stages of CKD. Competing risks for death and dialysis dependence vary according to CKD etiology. Newer biomarkers (BM) associated with specific pathological processes could identify CKD patients at risk of death before dialysis (DBD). **Methods:** A subset of a pan-Canadian prospective cohort of 2544 referred CKD patients from 25 diversely located nephrology centers were examined for predictive utility of different panels of BM: troponin I, pro-brain natriuretic peptide (NT-proBNP), fibroblast growth factor 23 (FGF23), high sensitivity C-reactive protein (hsCRP) and asymmetric dimethylarginine (ADMA). We assessed all cause mortality before reaching dialysis and dialysis dependence at 3 yrs in 3 groups of CKD patients: those with diabetes (DM) n=672, glomerulonephritis (GN) n=275 and polycystic kidney/tubulointerstitial disease (PCKD/PI) n=222. **Results:** The mean age (yrs) DM, GN, PCKD/PI was: 68, 58, 63. The mean eGFR (ml/min/1.73m²) DM, GN, PCKD/PI was: 27.6, 27.3, 27.1. Overall 173 (14.8%) died: most in DM n=124 (18.3%), then PCKD/PI=28 (12.6%) and GN=21 (7.6%). Different panels of BM

were associated with DBD in each group: DM with NT-proBNP and ADMA, GN with FGF23 and troponin and PCKD/PI with ADMA and hsCRP.

Parameter	Diabetic Nephropathy				GN				PCKD/PI			
	HR	95% C.I.	P value		HR	95% C.I.	P value		HR	95% C.I.	P value	
Age, per 5 yrs	1.321	1.188	1.469	<.0001	1.214	1.006	1.464	0.0434	1.672	1.292	2.163	<.0001
CVD history (Reference=No CVD)												
Ischemic	1.977	1.110	3.522	0.0207					3.769	1.360	10.446	0.0108
CHF	3.267	1.708	6.248	0.0003					0.897	0.115	7.022	0.9179
Ischemic+CHF	3.209	1.853	5.559	<.0001					3.197	1.036	9.869	0.0432
Albumin per 1 g/L	0.915	0.878	0.952	<.0001								
Hemoglobin per 1 g/L									0.961	0.936	0.988	0.0042
Cystatin C per 100 ng/mL	1.059	1.025	1.095	0.0006								
ADMA per 0.1 µM	1.300	1.098	1.540	0.0024					1.328	1.187	1.485	<.0001
logProBNP pg/mL	1.396	1.178	1.654	0.0001								
Troponin I (> LDL)					3.562	1.334	9.513	0.0113				
log TGFβ1 pg/mL					0.271	0.080	0.923	0.0368				
log FGF-23 RU/mL					2.065	1.100	3.878	0.0241				
log CRP mg/L									1.864	1.284	2.705	0.001

Conclusions: The risk of DBD is high, particularly in DM. BM can be used to identify patients at higher risk of DBD. BM profile differs between distinct CKD etiologies consistent with different pathological processes which may underlie DBD. Future studies should validate these findings in other cohorts and then test interventions aimed at addressing pathological processes.

Funding: Commercial SupportOrtho Biotech Canada

Course: Annual Meeting: Abstract Sessions

Session: CKD: Epidemiology and Outcomes

Date/Time: Thursday, November 13, 2014 4:30 PM - 6:30 PM

Location: Room 202

Abstract: [FR-OR021] Infection Is a Risk Factor for Faster Progression to Renal Replacement Therapy and Death in Chronic Kidney Disease

Hicham I. Cheikh Hassan, MBChB, Mila Tang, Ognjenka Djurdjev, Adeera Levin, MD. St Pauls Hospital, Vancouver, BC, Canada; UNSW, Sydney, NSW, Australia; British Columbia Provincial Renal Agency, Vancouver, BC, Canada; University of British Columbia, Vancouver, BC, Canada; CanPREDDICT Investigators.

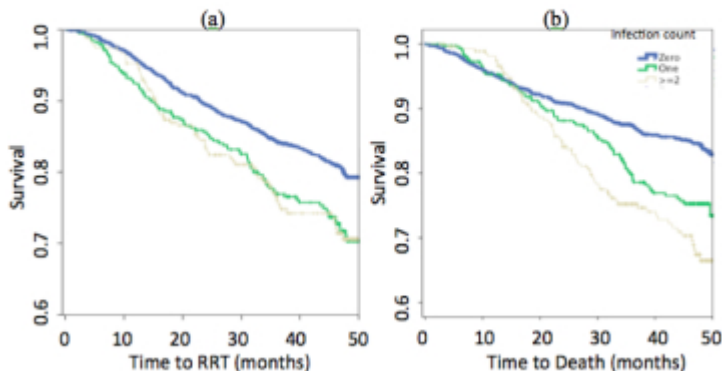
5:06 PM - 5:18 PM

Background: Chronic Kidney Disease (CKD) affects 10% of adults and is associated with increased risk of infection (Inf). In patients undergoing renal replacement therapy (RRT), Inf is an established and increasing cause of death. However, the role of Inf in non dialysis CKD patients remains understudied. We aim to establish if Inf is a risk factor for faster progression to RRT and mortality in CKD patients. **Methods:** CanPREDDICT is an observational pan-Canadian cohort of prospectively followed up CKD outpatients. Baselines characteristics were recorded at initial visit and patients followed up six monthly. Inf were defined by use of antibiotics, categorised by anatomical location and counted for each six monthly interval. Endpoints were death and commencing RRT. **Results:** The analysis cohort consisted of 2529 patients (mean follow up 35.3 months); median age was 70.6 years, males (62.5%) and Caucasians (88.7%). 399 patients (15%) died and RRT

was started in 464 patients (18%). 30% had an Inf. Those with Infs were more likely to be male ($p < 0.001$), have diabetes ($p = 0.01$) and cardiovascular disease ($p < 0.001$), lower eGFR ($p = 0.019$) and higher albumin ($p < 0.001$) and C reactive protein ($p = 0.003$) as compared to those with no Inf; no statistical difference in age ($p = 0.71$) or urine albumin/creatinine ($p = 0.89$) were seen. Patients with Inf were more likely to die (No Inf = 13.2%, 1 Inf = 20.8%, ≥ 2 Inf = 26.4%, $p < 0.001$) and undergo RRT (No Inf = 16.2%, 1 Inf = 24.5%, ≥ 2 Inf = 24.3%, $p < 0.001$)

Kaplan-Meier curves a) time to RRT and b) time to mortality based on number of infections.

$p < 0.001$ by Log Rank for both curves



Conclusions: We demonstrate that the presence of any Inf in this CKD cohort is a risk factor for increased mortality and faster RRT progression. Reasons for this association is the focus of future study.

Funding: Commercial Support Ortho biotech Canada

Course: Annual Meeting: Abstract Sessions

Session: CKD: Complications and Outcomes

Date/Time: Friday, November 14, 2014 4:30 PM - 6:30 PM

Location: Room 204-C

Abstract: [SA-OR081] Challenges and Opportunities for Effective Chronic Kidney Disease Care Delivery: A Synthesis of Health Systems and Policies from 19 Countries

Aminu K. Bello, MD, PhD, FASN, Adeera Levin, MD, Braden J. Manns, MD, Tilman B. Drueke, MD, Brenda Hemmelgarn, MD, PhD, Scott Klarenbach, MD, Giuseppe Remuzzi, MD, Marcello Tonelli, MD. University of Alberta, Canada; University of British Columbia, Canada; University of Calgary, Canada; Inserm Unit 1088, UFR Médecine/Pharmacie, Université de Picardie, Amiens, France; Mario Negri Institute, Bergamo, Italy.

5:06 PM - 5:18 PM

Background: Little is known about the best way to structure health systems to facilitate early chronic kidney disease (CKD) care. We evaluated CKD care programs within the context of the healthcare systems across countries to identify best

practices and initiatives in care delivery. **Methods:** We collated and synthesized data on existing CKD care policies and structures across 19 developed countries. These included CKD care frameworks within the context of the healthcare system providing a synthesis and comparative analysis of the information across the individual countries. Data were obtained from multiple sources, including renal registries, government reports and published literature, and a detailed survey of key stakeholders from each country (N=1226). **Results:** Only three countries have a national specific CKD policy, and governments generally do not consider CKD a priority. For instance, in only three countries did the majority of respondents (>75%) believe that CKD was recognized as a priority by the government. Eleven countries have national CKD guidelines, and none has established schemes to monitor adherence. There were multi-faceted barriers to early CKD care: limited workforce capacity, absence of surveillance systems, lack of a coordinated care strategy, non-integration of CKD with other non-communicable disease (NCD) control initiatives, and low awareness of CKD among stakeholders (policymakers, primary care practitioners, and patients). **Conclusions:** There are common challenges faced by diverse health systems on CKD care. Some countries are further ahead than others, but all have considerable work to do. This reflects the need for international cooperation to strengthen health systems and policies for CKD care. This data identifies opportunities for optimal care delivery, and explores potential mechanisms to capitalize on these opportunities.

Course: Annual Meeting: Abstract Sessions

Session: No Borders: Globalizing CKD Prevention Strategies

Date/Time: Saturday, November 15, 2014 4:30 PM - 6:30 PM

Location: Room 104

POSTER:

Abstract: [TH-PO650] Bioimpedance Assessment of Volume Status in Referred Patients with Chronic Kidney Disease: Baseline Data from BIO-CANPREDDICT

Mohammed Hadi Tawhari, MBBS, Azim S. Gangji, MD, Trevor J. Wilkieson, Mila Tang, Adeera Levin, MD, Ognjenka Djurdjev, Catherine M. Clase, MbChB, FASN. Internal medicine, McMaster University, Hamilton, Ontario, Canada; Nephrology, St. Joseph's Hospital, Hamilton, Ontario, Canada; Nephrology, St. Paul's Hospital, Vancouver, British Columbia, Canada; Nephrology, University of British Columbia, Vancouver, British Columbia, Canada; Nephrology, BC Renal Agency, Vancouver, British Columbia, Canada.

Background: Volume status in patients with chronic kidney disease is difficult to assess. Establishing construct validity for new methods of assessment is challenging because no criterion measure exists. A modest correlation with other methods of assessment would suggest that the methods assess the same underlying construct,

and confirm the potential for bioimpedance to provide more accurate information than the comparator studied. **Methods:** We measured bioimpedance, in triplicate, in patients with CKD who were already participating in CANPREDDICT. We analyzed the data according to the method of Piccoli, classifying patients based on the resistance (R) – reactance (Xc) graph. **Results:** We recruited 416 patients, median age was 70 (IQR 17) and 61 % were male. Median MDRD GFR was 28 mL/min/1.73 m² (IQR 16), median urine albumin-creatinine ratio was 107 mg/L (IQR 391), 44% had diabetes, 26% ischaemic heart disease and 10% a history of congestive heart failure. Median physician-assessed volume status was 1 on a 1-to-7 scale (IQR 1) and volume status by bioimpedance was 1 on a 0-to-3 scale (IQR 2). For both scales higher values reflect worse volume overload. By bioimpedance, 179 (44%) of patients had normal volume status (0), 91 (22%) status of 1, 108 (26%) status of 2 and 33 (8%) status of 3. Correlation between physician-assessed and bioimpedance- measured volume status was 0.31 (p< 0.001). In multivariate analysis, volume status by bioimpedance was associated with age (OR 1.07 per year, 95% CI 1.05-1.10), gender (OR 0.56 for women, 95% CI 0.34-0.92) and diabetes (OR 2.3, 95% CI 1.26-4.09). **Conclusions:** Volume overload by bioimpedance is prevalent in referred patients with CKD. The moderate correlation with physician-assessed volume overload establishes construct validity for this method.

Funding: Other NIH Institute Support: The Kidney Foundation of Canada

Course: Annual Meeting: Abstract Sessions

Session: CKD: Complications - I

Date/Time: Thursday, November 13, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall

Abstract: [TH-PO656] The Risk of Cardiovascular Events in Patients with Advanced Glomerulonephritis Is Not Higher Than Those with Other Causes of Chronic Kidney Disease

Holly L. Hutton, MBBS, Adeera Levin, MD, Jagbir Gill, MD, Ognjenka Djurdjev, Sean Barbour, MD. Dept Medicine, Monash Univ, Clayton, Victoria, Australia; Div Nephrology, Univ British Columbia, Vancouver, BC, Canada; BC Provincial Renal Agency, Vancouver, BC, Canada.

Background: The risk of cardiovascular disease (CVD) in glomerulonephritis (GN) is poorly understood but has been suggested to be high, possibly due to disease-related inflammation promoting atherosclerosis. Therefore, we hypothesize that the risk of CVD in CKD patients with GN should be higher than other CKD patients with similar CV risk factors. **Methods:** 2197 patients from CANPREDDICT (N=2544), a prospective cohort study of patients with stages 2-4 CKD with 3 years of follow-up and centrally adjudicated CVD events, were eligible for analysis. GN patients (N=272) were 1:1 direct and propensity score matched to non-GN patients based on age, eGFR, diabetes, prior CVD and sex. Time from cohort entry to CVD events

was compared using a shared frailty Cox survival model. **Results:** Pre and post matching data is shown in Table 1.

	Pre matching		Post matching	
	GN (288)	Non GN (1899)	GN (272)	Non GN (272)
Age (mean; yrs)	58.9	69.7	60.5	60.4
eGFR (mean; mls/min)	27.7	27.0	27.0	27.1
Caucasian (no, %)	241, 83.7	1703, 89.7	236, 86.8	243, 89.3
Female (no, %)	99, 34.4	715, 27.7	95, 34.9	95, 34.9
Diabetes (no, %)	58, 20.1	1018, 53.6	57, 21.0	61, 22.4
IHD/heart failure (no, %)	82, 28.5	911, 48.0	79, 29.0	72, 26.5

CVD events occurred in 8.7% (N=25) vs 17.8% (N=388) of GN compared to non-GN CKD patients. After matching, CVD events occurred in 9.2% (N=25) of both GN and non-GN CKD patients (HR 1.01 95%CI 0.58-1.78 p=0.96). In sensitivity analyses, GN and non-GN CKD patients had similar CVD risk in subgroups with diabetes (21.4% vs 21.4%, HR 1.03 95%CI 0.46-2.29 p=0.94) or without diabetes (6.1% vs 8.2%, HR 0.75 95%CI 0.36-1.59 p=0.45). **Conclusions:** Patients with advanced CKD due to GN do not have a higher risk of CVD compared to otherwise similar CKD patients without GN. These novel findings question the belief that GN contributes directly to CV risk, and emphasizes the need to further prospectively study CVD at earlier stages of GN.

Course: Annual Meeting: Abstract Sessions

Session: CKD: Complications - I

Date/Time: Thursday, November 13, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall

Abstract: [FR-PO127] Contrast Induced Nephropathy: Assessing the True Incidence of AKI Related to CT Scans with and without Contrast

Juliya Hemmett, MD, Lee Er, Chris Cheung, MD, Sean West, Helen Chiu, Ognjenka Djurdjev, Adeera Levin, MD. Nephrology, St. Paul's Hospital and University of British Columbia, Vancouver, British Columbia, Canada; BC Provincial Renal Agency, St. Paul's Hospital, Vancouver, British Columbia, Canada; Vancouver Coastal Health Authority, Vancouver, British Columbia, Canada.

Background: Contrast-induced nephropathy (CIN) is the acute decline in renal function 48-72 hours after contrast media administration. Incidence rates vary in the literature. Since 100,000 CT scans are performed annually within one health authority (HA) in Canada, there is interest in implementing a standardized CIN prevention protocol (CIN-PP), to decrease risk of CIN. **Methods:** We evaluated the efficacy of a pilot CIN-PP by measuring the incidence of CIN within the HA at

baseline and after PP implementation. During two time periods, pre and 3 mo post CIN-PP implementation, all hospitalized patients who had 2 serum creatinine (sCr) values within a 7 day period pre and post CT scan, with and without contrast were included in the sample. Data included: patient (pt) demographics, type of CT scan, and sCr values. CT scans were excluded if they involved an extremity or if a pt received more than one scan within a 7 day period. Of 4919 scans done, there were 325 CT scans from the pre-protocol phase in Dec. 2012, and 518 CT scans from the post-protocol phase in Oct. 2013 meeting inclusion criteria. The primary outcome was the incidence of CIN, defined as a sCr increase of >26.5 mmol/L within 7 days post-CT scan. **Results:** The mean age of the population was 70y, mean eGFR at baseline =70. Baseline and post-protocol implementation CIN incidence was similar (10.9 vs 10.0%;p=0.64). We evaluated the proportion of pts who received IV contrast in both time periods who had 2 sCr values; more pts post CIN-PP had 2 sCr values (73.6 vs 79.8%;p=0.14). The incidence of CIN did not vary between those who did and did not receive contrast in either time period. **Conclusions:** The application of robust research methodology to the CIN-PP quality improvement initiative raises questions as to the value proposition of CIN-PP. Further understanding of factors contributing to AKI in those receiving CT scans, irrespective of contrast may guide future targeted interventions.

Course: Annual Meeting: Abstract Sessions

Session: AKI: Epidemiology and Outcomes

Date/Time: Friday, November 14, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall

Abstract: [FR-PO610] Leukocyte Chemotactic Factor 2 (LECT2) Amyloidosis in First Nations People in British Columbia, Canada: A Case Series

Holly L. Hutton, MBBS, Mari DeMarco. Alexander Magil, Paul Taylor. Dept Medicine, Monash University, Clayton, Victoria, Australia; Dept Pathology and Laboratory Medicine, St Paul's Hospital, Vancouver, BC, Canada.

Background: Leukocyte chemotactic factor 2 (LECT2) amyloidosis was first identified in 2008, and has emerged as a frequent type of renal amyloidosis. It is typically reported as being renal limited, and, in the United States, more prevalent in Hispanic patients. We report 4 First Nations people living in Northern British Columbia who were diagnosed with renal LECT2 amyloidosis over the past 4 years. **Methods:** All patients presented with slowly progressive renal impairment and minimal proteinuria. (Table 1)

Age	Sex	Creatinine $\mu\text{mol/L}$	eGFR (ml/min)	ACR (mg/mmol)
56	F	167	37	1.9
78	M	261	21	64
68	F	223	20	48
62	F	165	27	2.4

Biopsy findings were typical of LECT2 amyloid, with intense congo red staining, and amyloid deposition in the renal interstitium and vasculature as well as glomeruli. After immunohistochemistry for common amyloidogenic proteins did not identify the pathogenic protein, laser microdissection-mass spectrometry was used to make the diagnosis. Although First Nations people comprise only about 4% of the patient population seen by our Nephrology service, all 4 cases of renal LECT2 amyloidosis, diagnosed over the past 4 years, occurred in this ethnic group. **Results: Conclusions:** The pathogenesis of LECT2 amyloidosis is currently not well understood. Sequencing of the coding region of the *LECT2* gene in patients with LECT2 amyloidosis has revealed a common homozygous single nucleotide polymorphism, indicating a probable genetic component to disease pathogenesis. The fact that our centre has only identified LECT2 amyloidosis in First Nations people adds weight to the hypothesis that there is a genetic contribution to the disease. It may be that a common North American indigenous ancestry of First Nations people and Hispanics accounts for the occurrence of this condition in both populations. LECT2 amyloidosis may be an underdiagnosed cause of chronic kidney disease, as the characteristic minimal proteinuria and slow progression of renal impairment probably result in relatively few patients undergoing renal biopsy.

Course: Annual Meeting: Abstract Sessions

Session: Fellows Case Reports: Glomerulopathies and Vasculitis

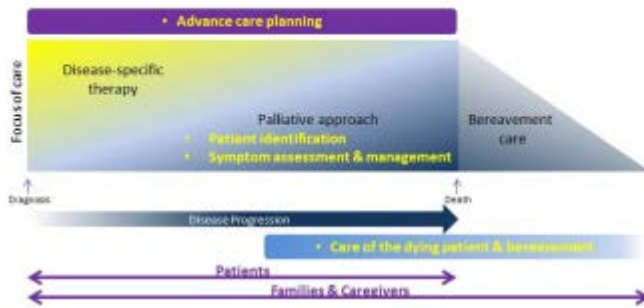
Date/Time: Friday, November 14, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall

Abstract: [FR-PO1054] Establishing an Integrated Population-Based Approach to Renal Palliative Care

Helen Chiu, Donna Murphy-burke, Ronald Werb, MD, John A. Duncan, MD, Gaylene M. Hargrove, MD, Adeera Levin, MD, Mohamud A. Karim, MD. BCPRA; UBC, BC, Canada.

Background: Chronic kidney disease (CKD) is characterized by high symptom burden and poor life expectancy at advanced stage. Functional and cognitive decline results in difficult end-of-life (EOL) conversations involving patients, families and care providers. An integrated approach to timely advance care planning (ACP) and EOL care spanning the CKD care continuum is needed. **Methods:** Utilizing the provincial renal network in BC, Canada, an expert panel was formed to create an evidence-based renal EOL Framework that articulates 4 pillars of renal palliative care: patient identification, ACP, symptom assessment & management, and care of the dying patient & bereavement.



EOL champions from the 5 regional renal programs led the local implementation of the Framework. Education and support tools were developed provincially to facilitate uptake and capacity creation among frontline care providers. Progress over a 5 year period was verified with surveys and semi-structured interviews across the province. **Results:** The 4 pillars of the EOL Framework were adapted across BC in ways that matched local needs and resources. Formal processes in ACP and symptom control with use of standardized assessment have been established in all renal programs. In a recent survey for frontline nephrologists and staff, 61% of respondents had EOL care training with 50% felt that they need more education to stay current. Enabling an organizational culture open to integrate palliative approach into routine renal care remains a challenge, and cementing relationships with palliative services is key. **Conclusions:** Contextualizing the EOL Framework is crucial to integrating supportive care into daily renal care. To promote quality EOL care, there is a need to develop a person-centred evaluative rubric for continual improvement and research activities that bridge the knowledge gaps in renal palliative care.

Funding: Government Support - Non-U.S.

Course: Annual Meeting: Abstract Sessions

Session: Dialysis: Palliative and End-of-Life Care

Date/Time: Friday, November 14, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall

Abstract: [SA-PO039] Small Returns for Big Investment: CKD-MBD Therapy from 2005 to 2013

Katrina Chau, MBBS, Lee Er, Ognjenka Djurdjev, Adeera Levin, MD. Division of Nephrology, University of British Columbia, Vancouver, BC, Canada; BC Provincial Renal Agency, Vancouver, BC, Canada.

Background: Although significant resources are devoted towards the control of phosphorus (Pi), calcium (Ca) and parathyroid hormone (PTH) in dialysis patients as treatment for chronic kidney disease–mineral bone disorder (CKD-MBD), there is a deficiency of evidence supporting this practice. We aimed to describe the trends in Pi, Ca, PTH in a prevalent dialysis cohort following the introduction of non-

calcium based phosphate binders (NCBPB)–sevelamer (year introduced into formulary: 2002) and lanthanum (2007) – and cinacalcet (2006). **Methods:** An observational cohort study was conducted on 7645 patients receiving dialysis in British Columbia (BC) from 2005–2013 entered into the PROMIS (Patient Records and Outcome Management Information System) database. Demographic, clinical, medication and laboratory data were obtained from the database. All results of laboratory investigations performed for these patients within BC were automatically uploaded into PROMIS. Target ranges of Ca, Pi and PTH were defined according to the 2009 KDIGO (Kidney Disease Improving Global Outcomes) guidelines. **Results:** Phosphate binders (PB) of any kind were used by 86–91% of the population. 18–21% were prescribed NCBPB/cinacalcet +/- conventional PB. Pi was unchanged over the study period ($p=0.77$). There was a decrease in Ca of 0.01 mmol/L per year (95% CI = -0.02 – -0.001, $p=0.03$) and increase in log(PTH) of 0.04 per year (95% CI = 0.03–0.04, $p<0.001$). There was no significant change in % of patients within target range of Pi (OR=1.01, 95% CI = 0.99–1.02, $p=0.09$) or PTH (OR=1.01, 95% CI=0.99 – 1.02, $p=0.05$) but patients were less likely to have low PTH (OR=0.93, 95% CI=0.92 – 0.95, $p<0.001$). Patients within target range of Ca decreased (OR=0.97, 95% CI=0.96–0.98, $p<0.001$) and patients were less likely to be hypercalcaemic (OR=0.95, 95% CI=0.92–0.98, $p=0.005$). **Conclusions:** Following prescription of new treatments for CKD-MBD there has been a reduction of patients with high Ca and low PTH. However, the proportion of patients reaching target ranges for Pi and PTH is unchanged. These data bring into question the utility of these costly therapies.

Course: Annual Meeting: Abstract Sessions

Session: Mineral Disease: Ca/Mg/PO₄

Date/Time: Saturday, November 15, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall

Abstract: [SA-PO694] Identification of Risk Factors for BK Infection – A Paired Kidney Analysis

Sobhana Thangaraju, MD, James Dong, Caren L. Rose, Jagbir Gill, MD, John S. Gill, MD. University of British Columbia, Vancouver, Canada.

Background: BK nephropathy remains an important cause of premature renal allograft failure. It is thought to be primarily related to the intensity of immunosuppression, while the importance of donor and recipient factors remains uncertain. **Methods:** Using data from Scientific Registry of Transplant Recipients (SRTR) between 2004 – 2010, we performed a paired kidney analysis in which both kidneys were transplanted from the same deceased donor ($n = 21,575$) to identify 1) concordance of BK infection – cases where both kidneys were infected, 2) recipient factors for BK infection – using discordant pairs where only one kidney was infected. **Results:** Among the 21,575 pairs, 1975 pairs (9%) had discordant infection, while 174 (1%) had concordant infection. Concordant infection was 5-fold higher than would be expected at random. In a multivariate conditional logistic

regression model including discordant pairs, the following factors were associated with BK infection: Age < 18 (OR 1.31; 95% CI 1.01-1.54), male gender (OR 1.53; 95% CI 1.32-1.77), HLA MM \geq 4 (OR 1.80; 95% CI 1.28-2.53), acute rejection (OR 2.75; 95% CI 2.23-3.38), use of T cell depleting antibody (OR 1.22; 95% CI 1.02-1.47). Among recipient pairs, concordant pairs were more likely to have both recipients treated with lymphocyte-depleting antibodies ($p < 0.001$) or tacrolimus ($p < 0.001$), have acute rejection ($p < 0.001$), HLA MM \geq 4 ($p < 0.001$) and to be from the same center ($p = 0.001$). **Conclusions:** We conclude that concordant infection among mate kidneys is higher than would be expected by random chance, suggesting the importance of donor factors. However, similar recipient and treatment factors, as well as the finding that many co-infected kidneys were transplanted at the same center suggest that risk of BK infection may be related primarily to treatment factors, rather than donor factors.

Course: Annual Meeting: Abstract Sessions

Session: Advances in Clinical and Translational Transplantation

Date/Time: Saturday, November 15, 2014 10:00 AM - 12:00 PM

Location: Exhibit Hall
