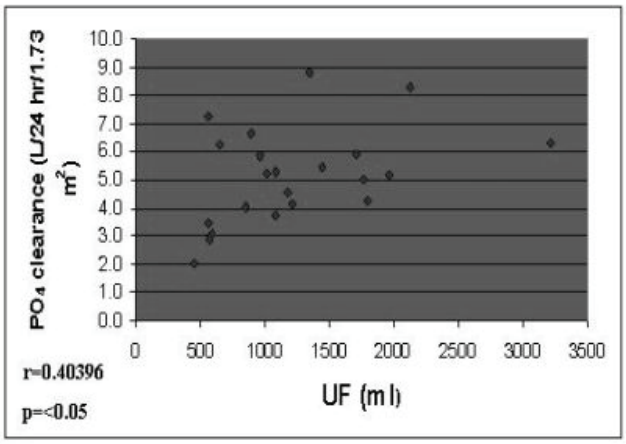


In this study, we have shown a significant correlation between UF and phosphate clearance. Low UF has been associated with decreased survival in PD patients. The mechanisms are not well understood and may be multifactorial. High UF improves PO_4 removal, which may potentially reduce the risk of vascular calcification and mortality.

Disclosure of Financial Relationships: nothing to disclose

F-PO1635

Longitudinal Analysis of Calcium and Phosphrorus Levels in Pediatric Peritoneal Dialysis Patients L. Smith,[1] D. Frankenfield,[2] J. Fadrowski,[1] B. Fivush,[1] A. Neu,[1] G. Gorman.[1] *[1]Johns Hopkins University, Baltimore, MD; [2]Centers for Medicare & Medicaid Services, Baltimore, MD.*

K/DOQI guidelines for the management of mineral metabolism in pediatric (1-18 yr old) peritoneal dialysis (PD) patients provide target ranges for serum calcium (C), phosphorus (P), and calcium-phosphorus product (CxP) which vary by age.

We aimed to describe the C and P status in a longitudinal pediatric PD cohort using CMS' ESRD Clinical Performance Measures (CPM) Project during the 2006 and 2007 study yrs. C values were corrected for albumin. Differences in values and percent of patients meeting targets were compared using X^2 or t-tests. Multivariate logistic regression determined factors associated with continued failure to meet CxP targets.

1040 patients were included in the two CPM study yrs. 334 patients had C and P values submitted to both study yrs. 55% were male, 65% were white. Mean age was 11.5 yrs, mean PD vintage was 3.7 yrs. 49% had congenital/urologic etiologies of ESRD.

Mean C was 9.8±0.9 mg/dl. Mean P was 5.5±1.3 mg/dl and 6.0 ±1.4 mg/dl for pts ≤ and > 12yrs respectively. Mean CxP was 55±14 mg^2/dl^2 and 57±14 mg^2/dl^2 for pts ≤ and > 12yrs respectively. 70% and 62% had CxP below age appropriate target values in 2006 and 2007 respectively.

Results of the multivariate logistic regression are shown in Table 1.

Table 1. Adjusted Odds Ratios of Continued Failure to Reach CxP Targets (<65mg^2/dl^2 if ≤12yo; <55mg^2/dl^2 if >12yo)

Variable	Adjusted OR (95% CI)	p-value
Age (yrs)	1.4 (1.0,1.9)	0.04
Male gender	1.4 (0.45,4.2)	NS
Black race	0.36 (0.09,1.4)	NS
Hispanic ethnicity	0.37 (0.1,1.3)	NS
Cong/urologic etiology	0.43 (0.1,1.5)	NS
Increasing PD vintage (yrs)	1.1 (0.92,1.2)	NS
Hemoglobin≥11g/dl	0.86 (0.19,3.9)	NS
Albumin≥3.5/3.2 g/dl (BCG/BCP)	0.85 (0.24,3.1)	NS
Kt/V≥1.8	0.61 (0.16,2.3)	NS

The majority of pediatric PD patients consistently keep CxP within recommended values. Increasing age is associated with decreased attainment of mineral metabolism guidelines.

Disclosure of Financial Relationships: nothing to disclose

F-PO1636

Appearance of Cell-Free DNA in Dialysate and Blood during Peritonitis Amos Douvdevani,[1,2] Michael Hausmann,[2] Hagit Goldstein,[1] Marina Vorovyov,[2] Moshe Zlotnik.[2] *[1]Department of Clinical Biochemistry, Soroka Medical University Center and Ben-Gurion University of the Negev, Beer-Sheva, Israel; [2]Department of Nephrology, Soroka Medical University Center and Ben-Gurion University of the Negev, Beer-Sheva, Israel.*

Background: Bacterial, inflammatory and mesothelial cells are destroyed during the inflammatory response to acute peritoneal infection. As a consequence, cell-free DNA may be released into both dialysate and peripheral blood. The aim of the present study was to investigate cell-free DNA levels in dialysate and blood and their effect on the peritoneal inflammatory process during peritonitis.

Methods: Cell-free DNA levels were measured at different time-points in dialysate and blood of mice (n=10/group) and PD patients with acute peritonitis. In mice, peritonitis was induced by intraperitoneal injection of E. coli ($3x10^9$ CFU). Cell-free DNA was measured by a novel fluorometric assay developed at our laboratory. This assay is accurate, quick and inexpensive and is applicable to various body fluids. DNA levels were correlated with inflammatory total and differential cell counts in peritoneal lavage of mice and in dialysate of PD patients. In mice, DNA levels were further correlated with levels of TNFα and IL-6.

Results: In mice with acute peritonitis, cell-free DNA levels in dialysate increased 10-fold within 24 hours from onset of peritonitis. Dialysate cell count and levels of TNFα and IL-6 were all correlated with DNA levels ($p<0.02$). Increase of free DNA levels in blood of experimental animals was 4-fold as compared to controls without peritonitis. This increase correlated with increases in IL-6 ($p<0.04$) and TNFα ($p<0.05$) levels. In PD patients, a similar correlation was observed between dialysate cell count, free DNA and IL-6 levels.

Conclusion: In this study, for the first time, cell-free DNA was shown to appear in dialysate of mice and PD patients with peritonitis correlating with traditional parameters of inflammation. This innovative DNA assay may, in the future, be a convenient instrument for the diagnosis and follow-up of PD patients with peritonitis.

Disclosure of Financial Relationships: nothing to disclose

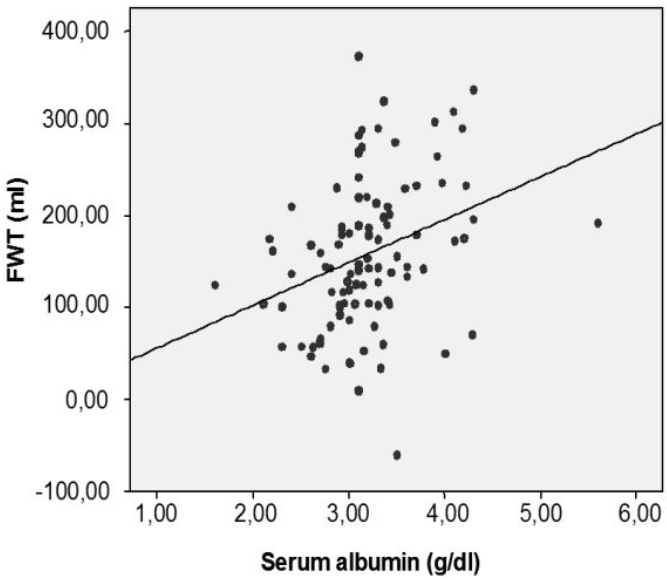
F-PO1637

Free Water Transport across Aquaporin-1 in Prevalent PD Patients as Evaluated by a mini-PET Eric Goffin,[1] Philippe Bovy,[2] Olivier Mat,[3] Jean-Claude Stoléar,[4] Abdelhamid Lalaoui,[5] Michel Tintillier,[6] Gaëtan Clerbaux,[7] Corine Langen,[8] Annie Robert.[9] *[1]Nephrology, Cliniques Universitaires St Luc, Brussels, Belgium; [2]Liège, Belgium; [3]Baudour, Belgium; [4]Tournai, Belgium; [5]Mons, Belgium; [6]Namur, Belgium; [7]Brussels, Belgium; [8]Arlon, Belgium; [9]Epidemiology and Biostatistics, Cliniques Universitaires St Luc, Brussels, Belgium.*

Introduction. Free Water Transport (FWT) in PD patients, i.e. water transport across Aquaporin-1 during the initial phase of an hypertonic dwell, may precisely be assessed by a 1-hour mini-PET, as described by La Milia et al (Kidney Int 2005). Currently, its clinical and biological determinants are still ill-defined.

Method. We performed a mini-PET in a cohort of 101 prevalent PD patients [63 men; age: 63 ± 15 years; PD duration: 18.7 ± 16.9 (range: 0.5-79) months]. We evaluated the influence of age, sex, BMI, BSA, PD duration, presence of cardiopathy or diabetes, number of previous peritonitis episodes, prescription of ACE-inhibitors, angiotensin-II blockers, statins, aspirin, or steroids, and CRP and serum albumin concentrations, on FWT.

Results. FWT averaged 158 ± 82 (range: -60 to 373) ml. Close-to-1 correlations were obtained between FWT and total ultrafiltration (UF), D/P Na and D/P creatinine ($p<0.001$) but not D/D0 glucose ($p=0.07$). On multivariate analysis, FWT was strongly correlated with serum albumin ($r=0.34$, $p<0.001$), statins intake ($r=0.40$, $p=0.024$), and PD duration ($r=0.45$, $p=0.029$) . Each rise of 0.5 g/dl in serum albumin is associated with an increase in FWT of 26.4 ml on the average.



Conclusion. FWT can easily be determined by a mini-PET. Excellent correlations were obtained between FWT and small solute transport, and total UF. FWT is also strongly related to serum albumin, probably the best marker of systemic inflammation, co-morbidity and increased effective peritoneal surface area.

Disclosure of Financial Relationships: nothing to disclose