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IMPACT OF BALANCING GRAMS OF QUALITY PROTEIN INTAKE ON
NUTRITIONAL STATUS AND QUALITY OF LIFE IN CKD PATIENTS
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Quality of protein to be ingested by CKD patients in order to keep
the kidneys not to deteriorate further especially in Indian population
who consume mostly vegetarian diet makes planning of diet based on protein
quality ratio a tough job.

Objective: To analyze effect of optimizing the protein quality intake [high
biological value (HBV), net protein utilization (NPU) or protein efficiency
ratio (PER) of food article] on uremic toxins, nutritional status and quality
of life in CKD patients consuming 0.6-0.8 g/kg body wt. protein; 80% of
which is from poor protein.

Method: 145 predialysis CKD patients were enrolled who completed a food
frequency questionnaire, quality of life (QOL) performs, nutritional status
evaluation (dietary intake, anthropometry, serum albumin, total protein)
before and after diet counseling ≥ 50% of HBV protein [from casein and
egg base]: energy ≅ 35-40 kcal/kg body wt.

Results: Creatinine reduced significantly (p ≅ 0.001), non significant change
in blood urea & GFR improved (p ≅ 0.001), Nutritional intake increased; good
quality proteins intake ratio (p ≅ 0.001), energy (p ≅ 0.001) BMI elevated
(p ≅ 0.01) and perception of QOL improved after diet counseling

Conclusion: Judicious planning of quality protein intake within restricted
quantity along with calorie optimization is critical to reduce protein waste
products. Therefore, proper timely diet counseling to combat ignorance &
impair awareness to CKD patients is of utmost importance.

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EFFECTS OF L-CARNITINE SUPPLEMENT ON PLASMA COAGULATION AND
ANTICOAGULATION FACTORS IN HEMODIALYSIS PATIENTS
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Background: Hypercoagulability is an important risk factor for thrombosis and
its complications in hemodialysis patients. This study was designed to
investigate the effects of L-carnitine supplement on plasma coagulation and
anticoagulation factors in hemodialysis patients.

Methods: Thirty-six hemodialysis patients were randomly assigned to
either a carnitine or a placebo group. Patients in the carnitine group
received 1000 mg/day oral L-carnitine for 12 weeks, whereas patients in the
placebo group received a corresponding placebo. At baseline and the end of
week 12, 5 mL blood was collected after a 12- to 14-hour fast and plasma
fibrinogen concentration, activity of plasma protein C, coagulation factors V,
VII, IX, and serum concentrations of tissue plasminogen activator (tPA),
plasminogen activator inhibitor type-1 (PAI-1), free carnitine, and
C-reactive protein (CRP) were measured. Results: In the carnitine group,
mean serum free carnitine concentration increased significantly to 150% of
baseline (p < 0.001), whereas plasma fibrinogen and serum CRP had 98
mg/dL (p < 0.01) and 41% (p < 0.01) significant decreases, respectively, at
the end of week 12 compared with baseline. The reductions were
significant compared with the placebo group (p < 0.05). No significant
differences were observed between the two groups with regard to mean
to changes of the activity of plasma protein C, coagulation factors V, VII, IX,
and serum PAI-1 to tPA ratio.

Conclusion: L-Carnitine supplement reduces serum CRP, a marker of
systemic inflammation, and plasma fibrinogen, an inflammation-related
coagulation factor, in hemodialysis patients. Therefore, L-carnitine may play an
effective role in preventing cardiovascular diseases in these patients.

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NUTRITION-RELATED CARDIOVASCULAR DISEASE RISK FACTORS IN
CHRONIC KIDNEY DISEASE: RELATIONSHIP WITH CLINICAL OUTCOME
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The significance of nutrition-related risk factors in early-stage chronic kidney disease (CKD) is largely unknown. Evidence in end-stage disease indicates a ‘risk-factor paradox’ with traditional cardiovascular (CV) risk factors associated with improved survival. This study aims to assess the relationship between nutrition-related risk factors and clinical outcome in early CKD.

All patients with eGFR 15-60 ml/min commencing care at a large metropolitan hospital in 2008 and 2009 were assessed for a number of traditional (body mass index, waist circumference, lipids LDL, HDL, triglycerides) and renal-specific (serum phosphate (PO4; 25/Hi) vitamin D, albumin and haemoglobin) risk markers. Serum creatinine, eGFR, PTH, calcium, comorbidities, age and gender were also collected from medical records.

Clinical outcome was defined as reaching renal-end points (death, dialysis commencement and/or doubling serum creatinine) by June 30, 2011. Univariate analysis was undertaken by t-test and multivariate survival analysis by Cox time-dependant hazards model.

667 patients were investigated. During follow-up (median = 18; range
1-40 months) 36% (n = 239) were discharged from care or lost to follow-up.
Of the 428 patients remaining 25% (n = 106) a renal- end point of
death (13%), dialysis (7%) or doubling creatinine (5%). In a univariate
analysis, PO4; 25/Hi (event 1.35; 95%CI 1.29 - 1.40 vs. no event 1.15; 1.13 - 1.17
mmol/L), Vitamin D (61.7; 54.0-69.4 vs 73.8; 72.8-78.8 ng/mL) and serum
albumin (32.4; 32.5-36 vs 38.7; 38.3-39.1 g/L) were related to outcome
renal-end point. In the survival analysis model, only PO4; 25/Hi (HR 8.9; 95%CI 3.3-
24.5) and Albumin (0.90; 0.87 – 0.93) were independently associated with outcome, after adjusting for a range of confounding factors.

Traditional CV-risk factors in this CKD population were not associated with clinical outcome. Despite being within clinical reference range, serum phosphate and albumin were independently associated with clinical outcome. This may highlight a potential therapeutic target for risk management to delay or prevent renal end-points in CKD.

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EVALUATION OF THE URINARY SODIUM EXCRETION IN PATIENTS WITH
LOW SODIUM DIET
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One of the factors involved in the progression of chronic kidney disease (CKD) is the intake of salt. The ratio of salt to hypertension, cardiovascular and cerebrovascular diseases has been extensively demonstrated in several studies. The purpose of this study was to estimate sodium intake in a group of patients with CKD and compared with the urinary excretion of sodium in patients with CKD of any cause at all stages of kidney disease. The design was a cross-sectional observational study, reflecting the initial moment of a protocol of a randomized, prospective and controlled study (Salted). On the same visit was also conducted to collect a food recall. The dietary sodium intake was calculated from the 3-day food record using the Software Avanutri®. For the analysis of sodium added to foods, each 1000mg of salt purchased for the family was divided by the number of people living with the patient, and the result was divided by the number of days that the patient reported the duration of salt until the next purchase. Urinary sodium was measured in urine samples from 24 hours through automated method (Cl-8200 Architect - Abbott Diagnostics). After this analysis, we performed a correlation between food records provided by the patient and the result of urinary sodium excretion. Forty-one patients were included, with glomerular filtration rate (GFR) ≥ 20 to ≤ 60 ml/min.

Conclusion: Low sodium diet is effective in reducing the intake of salt in patients with chronic kidney disease. The correlation between urinary sodium excretion and dietary sodium intake was significant (r = 0.73, p < 0.05).
70 PODOCYTE-SPECIFIC OVEREXPRESSION OF SIRT-1 INCREASES NEPHRIN IN OBESE MICE FED A HIGH-FAT DIET
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Obesity can lead to inflammation, hyperlipidemia, diabetes, hypertension, and renal dysfunction, and is also associated with proteinuria. Histopathological changes in the glomeruli in obesity were characterized by glomerulomegaly and focal segmental glomerulosclerosis. This study was designed to investigate the effect of sirtuin 1 (SIRT-1), podocyte-specific overexpressed, on nephrin levels in obese mice induced by high fat diet. SIRT-1 has been proposed as a chemotherapeutic target for type II diabetes mellitus. After establishing the SIRT-1 transgenic mice, experimental groups were divided into following three groups: Normal diet-normal group (ND-NL), high fat diet-normal group (HFD-NL), and high fat diet-SIRT-1 group (HFD-SIRT1). The background of transgenic mouse was C57BL/6. High fat diet group were fed with a high calorie diet (60%) for up to 21 weeks to examine a progressive development of obesity. Body weight, 6 hours fasting blood glucose, and HbA1c were regularly measured. Albumin-Creatinine Ratio (ACR) in 24 hours urine was measured 21 weeks after the experiment. The expression levels of SIRT-1 and nephrin in the kidney by using western-blot and RT-PCR were compared. With repeated measures ANOVA test, both high fat diet groups were showing that the body weight was significantly higher than normal diet group (P < 0.0001) and showing that 6 hours fasting blood glucose was also significantly different (P < 0.005). Although statistically not different, urinary ACR of the HFD-SIRT1 group was lower than the HFD-NL group (P = 0.09). The nephrin protein expression in the HFD-SIRT1 group was significantly increased than the HFD-NL (P < 0.05). The nephrin mRNA level in the HFD-SIRT1 group showed a tendency to increase compared with the HFD-NL group. Taken together the results, deterioration of the kidney disease caused by obesity and hyperglycemia could be prevented by increasing the level of the nephrin expression through SIRT-1 activation. SIRT-1 may have the ability to protect the podocyte from injuries caused by obesity and hyperglycemia.

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71 AMINO ACID REMOVAL DURING HEMODIALYSIS OF PATIENTS WHO HAD UNDERGONE INTRADIALYTIC PAR-ENTERAL NUTRITION.
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Background: Hemodialysis removes solutes uniformly according to their molecular weight. During each hemodialysis session, 6–8 g of amino acids are reportedly removed into the dialysate. Little is known about the amount of amino acids removed from those who have undergone intradialytic parenteral nutrition (IDPN).

Objective: We measured amino acid amounts prospectively during hemodialysis treatment.

Methods: We used 200 ml of 7.2% amino acid solution (Kidmin™), 200 ml of 50% glucose, and 20% of lipid emulsion as IDPN fluid. Blood samples were collected at the beginning and end of each session. The dialysate portion was also collected.

Results: Six patients were included in this study after providing written informed consent. The amount of amino acids removed during hemodialysis sessions was calculated as 9.1 ± 1.4 g, which was less than that infused as IDPN. The profiles of the removed amino acids showed that the amount removed was less than that within IDPN. However, for tyrosine and alanine, hemodialysis treatment removed more amino acids than that infused as IDPN, as well as amino acids that were not IDPN solution constituents. During a 2-week follow-up period, no significant change in amino acid profiles was observed.

Conclusions: IDPN entirely supplemented the removed amino acids, although some amino acids were not restored.

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72 RENAL DIETITIANS LACK TIME AND RESOURCES TO COLLECT AND ANALYZE DIETARY INTAKE DATA
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Previous research indicated that renal dietitians lack the time and computer software to implement the KDOQI nutrition guidelines for assessing dietary intake. This study used an online survey to determine the frequency and method of collecting and analyzing dietary intake data among renal dietitians in the USA and overseas.

The link to the survey was emailed to the members of the RenalRD listserve (n=2077), the International Society of Renal Nutrition and Metabolism (n=93), the Academy of Nutrition and Dietsetics Renal Practice Group (n=2362), and the National Kidney Foundation Council on Renal Nutrition (n=1491). Only currently practicing renal dietitians were asked to respond; 599 usable responses were received. A response rate cannot be calculated due to membership overlap between the 4 organizations, although individuals were asked to answer only once. Respondents were 99% female. 91% worked in the USA, 45% had a M.S. degree or higher, and 21% were Board Certified Specialists in Renal Nutrition. Dietitians worked mostly in dialysis (hospital based facility 30%, Fresenius 18%, DaVita 17%) and 5% worked in a pre-dialysis CKD clinic. Median patient load was 120/Full Time Equivalent (inner quartile range 100-150). Dietitians reported that they collected dietary intake data most frequently when labs were abnormal (70%), yearly (41%), and at the first visit only (35%). They did not collect intake data more frequently due to lack of time (42%) and not having analysis software (24.9%). Only 10% of renal dietitians reported that the frequency of diet analysis was determined by following the KDOQI guidelines, while 58.5% reported deciding on their own when to collect data. The most common methods of data collection were the "typical day" recall (50%) and the 24-hour recall (37%). Only 8% reported using a 3-day food record (as recommended by KDOQI). Methods of diet analysis were "estimation in my head" (62%), "calculate by hand" (25%), computer software (6%) and internet analysis sites (7%).

These data show that most dietitians are not following the KDOQI nutrition guidelines for frequency or method of diet analysis, and new, inexpensive, and rapid methods of diet assessment must be explored.

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73 ONLINE NUTRITION ALGORITHM FOR HEMODIALYSIS PATIENTS IMPROVES DIETITIAN-PATIENT INTERACTIONS
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The purpose of this study was to determine the usability of an online nutrition algorithm for hemodialysis patients by surveying a group of dietitians testing the algorithm. Subjects were invited to take 2 different online surveys, one at month 3 (n=22) and one at month 6 (n=14). JMP version 9.0.2 was used for analysis and significance was set at p < 0.05.

There was a 73% response rate for survey 1 with a mean of 8.5 ± 4.5 patient visits using the algorithm (range 0-16). Forty-five percent of respondents were from the US, and 55% worked in a chain-based outpatient dialysis facility. Seventy-two percent reported that it was harder than expected to use the algorithm, with half mentioning the time to enter data as a main difficulty. One dietitian used a computer directly at chair-side; 41% thought that using a computer at chair-side would make the process easier or much easier, while 36% thought it would be harder or much harder. Fifty percent thought using the algorithm improved their patient interactions while 41% saw no change. Thirty-six percent felt the algorithm was logical and/or easy and 36% were neutral. Dietitians more experienced with the algorithm were more likely to rate it as logical (ns).