This was a prospective, observational study designed to test a nutrition algorithm for 1) clinical feasibility; 2) logical progression; 3) ability to collect data; and 4) effectiveness in improving outcomes. Patients included in this study were enrolled by renal dietitians (RD) working in HD units based in five different countries. To select study subjects, RD were asked to screen and consent patients in their facilities until 4 patients were identified as at nutrition risk per the algorithm's screening tool. All data were collected via the algorithm including screening, assessment, nutrition related diagnosis, etiology of the nutrition diagnosis, nutrition related barriers, nutrition focused interventions, and outcome parameters. Statistics were performed using SPSS vs 20.0 and significance set at p < 0.05. One hundred patients, enrolled by 29 RD, were included in this analysis. The screening parameters that triggered an “at risk flag” for more than 50% of the patients were: PTH, serum cholesterol and unintentional weight loss. Of the patients with an albumin of < 3.8 mg/dl (37% of sample), 73% were given a nutritional diagnosis of insufficient protein intake. Overall, patients with insufficient intake had significantly lower serum albumin concentrations at baseline than those who did not have this (3.7 ± 0.4 vs. 4.0 ± 0.4, p < 0.05). Patients with a diagnosis of “high phosphorus” had decreases in serum PTH (349.5 ± 184.5 to 201.7 ± 113.6, p = 0.06) and phosphorus (from 6.5 ± 1.0–5.3 ± 1.9 mg/dl, p = 0.04) at the three month data collection. This study is the first of its kind to show that a web-based, HD specific, nutrition algorithm is feasible and effective.

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**231 EFFECTIVENESS OF L-CARNITINE SUPPLEMENTATION IN PATIENTS WITH ERYTHROPOIETIN-RESISTANT ANEMIA**

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Whilst L-carnitine (LC) supplementation is recommended for the treatment of EPO-resistant anemia, the extent of effectiveness has been shown to vary considerably. Previous work by Reuter et al (2008) demonstrated a significant association between EPO-resistance and carnitine pool composition; based on these findings, it is hypothesized that patients who have a high EPO resistance index (ERI) are more likely to respond to LC supplementation. Preliminary assessment of this hypothesis was conducted as retrospective analysis, using prospectively-defined criteria, of data from 2 randomized, double-blind, placebo-controlled trials. HD patients were administered LC (20 mg/kg/wk/dialysis i.v.) or placebo for 24 weeks, with EPO dose and hemoglobin data assessed at Weeks 0, 12 & 24. Patients were classified as High (> 0.02 μg/kg/wk/gHb) or Low LC based on baseline data. Treatment effectiveness was analyzed using %baseline ERI for all patients (Low ERI & High ERI) and for High ERI patients only. 77 patients (38 LC/39 placebo) were included in the analysis, of which 22 (14 LC/8 placebo) were classified as High ERI. Analysis of all patient data indicated no significant differences between Week 0, 12 & 24 %baseline ERI for neither the LC nor placebo groups, whereas analysis of High ERI patient data indicated a significant reduction in %baseline ERI at Week 12 & 24 compared to Week 0 (p = 0.004) for the LC treatment group, with no significant placebo treatment effect. Similarly, analysis of %baseline ERI area-under-the-curve from 0–24 weeks indicated no significant treatment effects when all patients were included in the analysis, whereas for High ERI patients, significantly lower values were demonstrated for LC vs placebo (p = 0.016). These findings suggest that High ERI patients may receive the most benefit from LC supplementation. It is proposed that LC treatment results in an improvement in CPT activity via normalization of the carnitine pool composition, thereby resulting in stimulation of the RBC membrane and improvement in anemia. A randomized, double-blind, placebo-controlled study is being conducted to investigate this further.

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**232 EFFECT OF BRAZILIAN NUT SUPPLEMENTATION ON ANTIOXIDANT, INFLAMMATORY AND LIPIDS STATUS IN HEMODIALYSIS PATIENTS**

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Selenium (Se) is a well-known antioxidant with a critical role in the proper functioning of nervous and muscle functions. In the last decade, many authors have suggested that Se may be a potent protective agent for neurons and myocytes through selenoprotein expression in the brain, as well as in skeletal and cardiac muscles. Low Se status has been associated with reduced coordination, motor speed and muscle strength. Reduced muscle function is common in hemodialysis (HD) patients; however, no study evaluated the association between muscle function and Se levels in HD patients. The objective of this study was to correlate muscle function with Se plasma levels in HD patients. Twenty HD patients (12 men, 54.5 ± 12.1 m for 52.8 months on HD) from a malcor Clinic at Rio de Janeiro, Brazil were studied. Blood samples were collected during fasting, before a regular HD session. The Se plasma levels were determined by atomic absorption spectrophotometry with hydride generation (Hitachi, Z-5000) and handgrip strength (HGS) was measured three times with a mechanical dynamometer (Jamar) after HD sessions in the non-fistula side and the highest value was used for analysis. HGS values less than the 10th percentile of an age-, gender- and regional specific reference were considered as muscle function loss. Plasma Se levels (31.9 ± 14.8 μg/L) were below the normal range (60-120 μg/L) and all patients were Se deficient. HGS values were significantly greater in males (31.0 ± 11.5 kg vs 14.0 ± 6.8 kg for females) (p = 0.001) and the muscle function loss was observed in 50% of patients and, those with muscle function loss presented lower Se levels (26.5 ± 12.1 μg/L) when compared to patients with preserved muscle function (39.12 ± 14.5 μg/L) (p = 0.05). These data suggest that Se can have an important role on muscle function in HD patients. However, more research is needed to better understand this possible relationship in CKD patients.

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**233 IS SELENIUM STATUS ASSOCIATED WITH MORTALITY RISK IN HEMODIALYSIS PATIENTS?**

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Previous studies have indicated selenium (Se) deficiency in hemodialysis (HD) patients and it may increase the mortality risk for death among

Dietary intake of selenium (Se) plays an important role as an antioxidant and anti-inflammatory agent due to its antioxidant properties and the richest known food source of Se is the Brazilian nut, found in the Amazon region, Brazil. The aim of this study was to evaluate the effect of the Brazilian nut supplementation on oxidative stress and inflammation markers and lipid status in HD patients. Forty HD patients (57.5% men, 53.3 ± 16.1yrs) were studied and received 1 nut (around 5g) a day for three months. The GSH-Px, 8-isoprostane, 8-OHdG, TNF-α and IL-6 levels were determined by ELISA before and after supplementation. The LDL-c and HDL-c levels were determined by enzymatic colorimetric method using the specific kit. After 3 months supplementation, cytokines, 8-OHdG, 8-isoproteanine levels decreased and the activity of GSH-Px increased significantly. Besides, after supplementation, the HDL levels increased and LDL levels decreased significantly.

Parameters Before supplementation After supplementation

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before</th>
<th>After</th>
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<tbody>
<tr>
<td>GSH-Px (nmol/ml/min)</td>
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<tr>
<td>8-isoprotane (pg/ml)</td>
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<td>8-OHdG (pg/ml)</td>
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<td>IL-6 (pg/ml)</td>
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<td>TNF-α (pg/ml)</td>
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<td>HDL (mg/dl)</td>
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<td>LDL (mg/dl)</td>
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*p < .0001

The results indicate that one Brazilian nut per day is capable to improve anti-inflammatory and antioxidant responses, and ameliorate lipids status in HD patients.

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