ASSOCIATION OF SODIUM VARIABILITY AND DECLINE IN RESIDUAL KIDNEY FUNCTION AMONG THIRCE-WEEKLY HEMODIALYSIS PATIENTS:
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Sodium abnormalities are common among patients with end-stage renal disease and are associated with higher mortality risk. This study examined the association between sodium variability and decline in residual kidney function (RFK) among conventional hemodialysis (HD) patients. The cohort consisted of 2,813 patients who initiated thrice-weekly HD from 2007-2011. Sodium variability was defined as the residual standard error (RSE) of time on sodium in the 6-months post-HD initiation. Sodium RSE was categorized using quartiles. Rapid decline in RFK was defined as a decline in KRU of more than 20% over a 6-month period. The association between sodium RSE and rapid decline in RFK was examined using logistic regression models with adjustments for case-mix variables, baseline KRU, and ultrafiltration volume RSE.

The cohort mean age was 63 ± 14 yrs, 65% were men, 22% African American, and 69% diabetics. Rapid decline in RFK was observed in 54%, 56%, 54% and 59% of patients in sodium RSE quartiles from lowest to highest quartile (p = 0.043). The highest quartile of sodium RSE was associated with a higher odds of rapid RFK decline: odds ratio (95% confidence interval) was 1.25 (1.02-1.55). After adjustment: odds ratios were 1.25 (1.01-1.55) and 1.37 (1.10-1.71) for case-mix and case-mix plus baseline KRU. Further adjustment of baseline sodium and ultrafiltration volume showed odds ratio of 1.23 (0.97-1.55) (reference first quartile sodium RSE) [Figure 1A]. In a mixed-effects model, predicted average KRU decline according to baseline sodium variability did not differ (p = 0.6433) [Figure 1B].

In incident thrice-weekly HD patients, higher sodium variability was associated with higher odds of rapid decline in RFK. Further studies examining the underlying mechanisms of this relationship and their effect on survival are needed.

ASSOCIATION OF SODIUM WITH A DECLINE IN RESIDUAL KIDNEY FUNCTION AMONG THIRCE-WEEKLY HEMODIALYSIS PATIENTS:
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Although a growing body of evidence suggests that both residual kidney function (RFK) decline and hypernatremia contribute to increased mortality risk in patients with end-stage renal disease (ESRD), the association between sodium and RFK decline remains unclear.

We retrospectively reviewed a cohort of 3,162 patients who initiated thrice-weekly hemodialysis (HD) from 2007 to 2011. Patients were included in the study based on availability of sodium and renal urea clearance (KRU) data at baseline (first 90 days), and had KRU data at 6 months after HD initiation. Patients were categorized into 3 groups according to baseline sodium measurements (<135, 135 to <140, and ≥140 mEq/L). Rapid decline in RFK was defined as a decline in KRU of more than 20% over a 6-month period. The association between sodium and rapid decline in RFK was examined using logistic regression models with adjustments for case-mix variables, baseline RFK, and laboratory markers of malnutrition and inflammation.

In our HD cohort, mean age was 63 ± 14 years, 64% were men, 22% were African American, 69% had diabetes, and mean baseline sodium was 138±29 ± 288 mEq/L. Median (interquartile range) baseline KRU was 4.27 (2.05 – 5.75) mL/min/1.73m2. Rapid decline in RFK was observed in 55%, 56%, and 54% of patients in sodium groups of <135, 135 to <140, and ≥140 mEq/L, respectively (p = 0.6109). In the fully adjusted model, sodium was not found to be significantly associated with odds of rapid decline of RFK: odds ratios (95% confidence intervals) were 0.98 (0.76-1.26) and 0.90 (0.76-1.08) in sodium <135 and ≥140 mEq/L groups (reference: sodium 135 to <140 mEq/L) [Figure 1A]. Additionally, we found no association between sodium and trajectory of KRU decline in a multilevel mixed effects model stratified by baseline sodium (p = 0.8394) [Figure 1B].

Among incident thrice-weekly HD patients, baseline sodium was not significantly associated with a rapid decline in RFK. Further studies are needed to highlight the underlying mechanisms from which these two variables influence mortality among ESRD patients.

ASSOCIATION OF SNAP BENEFITS WITH HIGHER RISK OF FOOD INSECURITY, POOR DIET QUALITY, AND LOWER VEGETABLE INTAKE IN INNER-CITY PATIENTS WITH CKD/ESKD:
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A plant based diet has been reported to improve outcomes in patients with CKD/ESKD. Many indigent patients with CKD/ESKD rely on SNAP benefits to help offset the cost of food. We studied the association of SNAP benefits with food insecurity and dietary habits in our inner-city population.

A face-to-face survey was conducted with a sample of 80 patients from inner-city CKD (23), dialysis (24), and transplant (33) clinics. As SNAP usage was similar across all clinics data were pooled. Diet was assessed using 24-hour recall and analyzed using the ASA24 Dietary Assessment Tool. The Healthy Eating Index was scored using the HEI-15, with a value below 50 considered poor. Food security was evaluated using the question ‘In the last 12 months did you ever eat less than you think you should because there wasn’t enough money for food?’ All comparisons were by t-test except where noted.

42 people (44.2%) participated in SNAP in the last year and 53 (55.8%) did not. Mean age was 54.7±1.7 yrs. There were 46 (58%) men and 34 (42%) women with 65 Black, 5 Asian, 5 Hispanic, and 4 others. 34 people (42.5%) had an income < $20K, with 22 (27.4%) between $20K and 40K. 21 (26.3%) were employed.

There was no significant difference in age, gender, years in the US, or education level between the SNAP recipients (SNAP-Y) and those who did not receive. SNAP-Y were less likely to be employed (10% vs 39%, p=0.05 by Chi square) and reported more food insecurity (23% vs 2%, p=0.07 by Chi-square). SNAP-Y ate a poorer diet by HEI (53.0±17.2 vs 59.6±16.6, p=0.015), ate less fiber (11.5±6.9 vs 15.5±11.4, p=0.009), less magnesium (234±16.9 vs 298±23.8, p=0.05), less vitamin C (54.9±9.4 vs 99.1±16.6, p=0.025), fewer total vegetables (1.15±0.25 vs 1.77±0.18, p=0.005), and fewer dark green leafy vegetables (0.4±0.5 vs 0.5±0.12, p=0.009). There was no difference in total calorie, sodium, protein, fat or carbohydrate intake.

In our population: 1. CKD/ESKD patients who received SNAP benefits reported more food insecurity. 2. All patients had poor adherence to Dietary Guidelines but SNAP recipients were worse, ate less fiber, magnesium and vitamin C and ate fewer vegetables, including dark green leafy vegetables. 3. The latter observation is concerning given recent evidence that plant-based eating may be disadvantageous for patients with kidney disease and warrants further study as to etiology, in order to design appropriate intervention programs.

A RARE CASE OF SECONDARY POLYCYTHEMIA ASSOCIATED WITH IGG4-RELATED RENAL INSUFFICIENCY:
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IgG4-related disease is a rare systemic disorder characterized by IgG4-positive plasma cell infiltration of various organs causing a fibro-