LETTER TO THE EDITOR

High dietary potassium blunts dietary sodium induced proteinuria

To the Editor,
The association of high sodium intake with proteinuria and hypertension is well established. Also, potassium intake has been shown to be associated with lower blood pressure in people on high salt diet and correlates negatively with proteinuria. In this report we sought to evaluate the influence of dietary potassium on the renal function effect of sodium intake by studying the relationship between dietary potassium, dietary sodium intake, and urinary protein excretion.

We performed analysis on the baseline data of the National Institute of Health-funded Modification of Diet in Renal Disease (MDRD) study. We used SPSS version 24 (IBM Armonk NY) for statistical analysis. Using the entire MDRD cohort, we performed bivariate correlation (Pearson) between dietary sodium as the predictor and proteinuria as the dependent variable. We then repeated the analysis by including 10% of the cohort that had the highest dietary potassium intake. As expected, our results showed significant correlation between dietary sodium and proteinuria in all subjects (n = 13,813, Pearson correlation = 0.062, P < 0.001) but this correlation lost statistical significance when only top 10% of the cohort with highest potassium intake was analyzed (n = 1,423, Pearson correlation = 0.034, P = 0.20).

Our study highlights an important association between high dietary potassium and reduction in proteinuria induced by dietary sodium. Sodium intake is associated with proteinuria and can impair the antiproteinuric effect of renin-angiotensin-aldosterone system (RAAS) blockers which are commonly used to reduce proteinuria and improve renal outcome. Oral potassium loading can suppress renin activity, induce natriuresis, negative sodium balance and decrease blood pressure. These mechanisms may be important in the antiproteinuric effect of potassium. This is a cross-sectional study and so can only make inference to an association. Further studies are required to fully evaluate this relationship and its potential benefits.

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CONFLICT OF INTEREST

All authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Each author contributed important intellectual content during article drafting or revision and accepts accountability for the overall work by ensuring that questions pertaining to the accuracy or integrity of any portion of the work are appropriately investigated and resolved.

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