CONCEPTS IN HYPERTENSION

A Journal Article-Based Approach to Understanding the Clinical Aspects of Hypertension

Volume 2 Issue 11 November 2017

Article of Interest

Kusaba, T et al. Sodium restriction improves the gustatory threshold for salty taste in patients with chronic kidney disease. Kidney International. 2009. (Click to Access)

Context and Study Objective

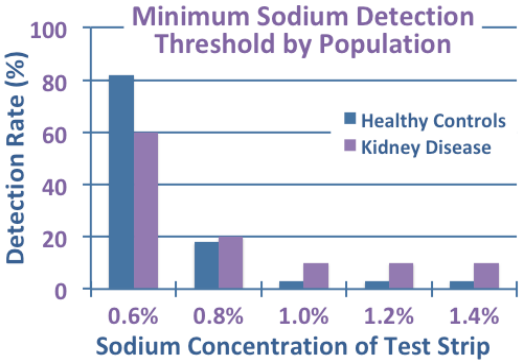
Reductions in sodium consumption lower blood pressure (BP), yet decreasing intake is difficult for patients to accomplish. While this inability is often ascribed to a lack of motivation, certain individuals may simply add more salt to their food because they cannot taste lesser amounts. This study sought to determine whether individuals with kidney disease were able to identify the taste of sodium at similar concentrations as healthy adults and if a low-salt diet improved their taste sensitivity.

Design, Setting, and Participants

In this Japanese study, individuals attending a chronic kidney disease (CKD) program were eligible if he/she had a glomerular filtration rate (GFR) of less than 60 mL/min per 1.73m2 (Stage 3 CKD). Upon study entry and after 1 week of a 2000 mg sodium diet, the threshold for the detection of sodium (lowest concentration at which a subject could identify the its presence) was measured through the use of sodium-impregnated taste strips. Healthy volunteers served as a control population. Additional elements of the study design were not provided.

Results

-29 CKD patients and 11 healthy subjects were included. Mean age of those with CKD: 63. Control age: 38. In those with kidney disease, BP was 130/70 mm Hg on medication, GFR 21 mL/min per 1.73m2 and creatinine 3.4 mg/dL. All participants were non-smokers. After one week, 24hr urinary sodium confirmed low salt intake among subjects with CKD. Healthy volunteers did not undergo 24hr urinary sodium testing. Additional data such as co-morbid conditions, medication regimens, or blood work were not provided.



-Graph: Compared to healthy controls, participants with kidney disease required more heavily salted test strips before sodium could be tasted (higher detection threshold).

-After one week of a reduced-salt diet, those with CKD were not able to detect salt at lower concentrations than before being placed on a low-sodium diet.

Clinical Perspective

-In order to have confidence in a study's results, one need consider the quality of the design and methodology. In this instance, the latter are sufficiently problematic that the data generated are unsound. Flaws include a lack of statistical adjustment for confounders such as age, medication use, and severity of CKD among others.

-Rather, the trial's value lies in the question posed. What if some patients only consume a sodium-rich diet because they cannot taste lesser amounts of salt? This fundamentally alters the physician's notion of the problem--that the individual is "non-compliant" with a low-salt diet owing to a preference for saltier tasting food.

-Taste dysfunction is well-documented with aging, tobacco use and, in fact, kidney disease.

-The capability of a sodium-restricted diet to heighten patients' perception of saltiness to a degree that they add lesser amounts to their meals will be addressed in a subsequent newsletter.

-As highlighted in a previous issue, even if a person adds excessive amounts of table salt, by far the largest source of dietary sodium intake is prepared food.

-Disclosures: I have no conflicts to declare.

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