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KIDNEY DISEASE PATIENTS: EAT YOUR VEGGIES, REWARD YOUR KIDNEYS

Vegetarian Diet Lowers Blood and Urine Phosphorous Levels

Washington, DC (December 20, 2010) — Phosphorous levels plummet in kidney disease patients who stick to a vegetarian diet, according to a study appearing in an upcoming issue of the *Clinical Journal of the American Society Nephrology (CJASN)*. The results suggest that eating vegetables rather than meat can help kidney disease patients avoid accumulating toxic levels of this mineral in their bodies.

Individuals with kidney disease cannot adequately rid the body of phosphorus, which is found in dietary proteins and is a common food additive. Kidney disease patients must limit their phosphorous intake, as high levels of the mineral can lead to heart disease and death. While medical guidelines recommend low phosphorus diets for patients with chronic kidney disease (CKD), phosphorus content is not listed on food labels.

Sharon Moe, MD (Indiana University School of Medicine and Roudebush Veterans' Affairs Medical Center) and her colleagues studied the effects of vegetarian and meatbased diets on phosphorous levels in nine patients with CKD. Patients followed a vegetarian or meat-based diet for one week, followed by the opposite diet two-to fourweeks later. Blood and urine tests were performed at the end of each week on both diets.

Despite equivalent protein and phosphorus concentrations in the two diets, patients had lower blood phosphorus levels and decreased phosphorus excretion in the urine when they were on the vegetarian diet compared with the meat-based diet. While the investigators did not determine the reason for this difference, a grain-based diet has a lower phosphate-to-protein ratio and much of the phosphate is in the form of phytate, which is not absorbed in humans.

The authors concluded that their study demonstrates that the source of protein in the diet has a significant effect on phosphorus levels in patients with CKD. Therefore, dietary counseling of patients with CKD must include information on not only the amount of phosphorous but also the source of protein from which it derives. "These results, if confirmed in longer studies, provide rationale for recommending a predominance of grain-based vegetarian sources of protein to patients with CKD. This diet would allow increased protein intake without adversely affecting phosphorus levels," the researchers wrote.

Study co-authors include Miriam Zidehsarai, MD, Mary Chambers, RN, Laurie Trevino, MS (Indiana University School of Medicine); Lisa Jackman, MS, J. Scott Radcliffe, PhD (Purdue University); Susan Donahue, MBA, and John Asplin, MD (Litholink, Inc.)
Disclosures: Sharon Moe is a consultant and has received honoraria and/or grant support from Shire, Genzyme, and Ineos, makers of phosphate binders. She also serves as a Councilor for the American Society of Nephrology (ASN). Susan Donahue and John Asplin are employees of Litholink, which analyzed the urine studies.
The article, entitled "Vegetarian Compared with Meat Dietary Protein Source and

Phosphorus Homeostasis in Chronic Kidney Disease,” will appear online at <http://cjasn.asnjournals.org/> on December 23, 2010, doi 10.2215/CJN.05040610.

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