Abstract

Introduction: Fructose intake has increased dramatically in consequence of the consumption of fructose-based sweetened foods and beverages. Research suggests that high fructose intake has a strong association with uric acid (UA) levels and worse prognosis of chronic kidney disease (CKD). Objective: The aim of this study was to investigate the influence of fructose intake on plasma UA levels in nondialysis-dependent chronic kidney disease patients.

Methods: Fifty-two patients on stages 3-5 (64.2 ± 9.6 years, 24 men, glomerular filtration rate of 30.5 ± 10.3ml/ min) were divided into two groups: high fructose intake (>50g/d, n=29, 61.7 ± 9.3years) and low fructose intake (<50g/d, n=23, 65.8 ± 9.7years). Blood samples were collected to determine lipid profile and plasma levels of UA, inflammatory (interleukin-6 (IL-6), tumor necrosis factor- (TNF-), C-reactive protein (CRP)) and cardiovascular markers (monocyte chemotactic protein-1 (MCP-1), intercellular adhesion molecule-1 (ICAM-1) and vascular cell adhesion molecule-1 (VCAM-1)). The energy, protein and fructose intake was estimated using 3-day 24-hour food recall. Results: High fructose intake was observed in 55.8% of patients and the mean UA levels were 7.7 ± 1.3 and 6.2 ± 1.6mg/dl in patients with high and low fructose intake, respectively (p<0.05). According to the regression analysis, fructose intake was the only variable able to affect the UA levels (b=0.42, p=0.016) after adjustment for gender, BMI, energy and protein intake, cardiovascular markers and lipid profile.

Keywords

Chronic kidney disease, Uric acid, Fructose, Inflammation, Cardiovascular disease.

Oliveira Vieira, Fernanda; de Oliveira Leal, Viviane; Barcza Stockler-Pinto, Milena; de Faria Barros, Amanda; Alvarenga Borges, Natália; Calixto Lobo, Julie; Mafra, Denise

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