UVAIA JUICE EFFECT ON THE OXIDATIVE STRESS BIOMARKERS IN HYPERCHOLESTEROLEMIC RATS

Lopes, J.M.M¹; Lage, N.N¹; Guerra, J.F.C¹; Silva M¹; Silva, M.E²; Pedrosa, M.L³

¹Núcleo de Pesquisas em Ciências Biológicas (NUPEB), UFOP, MG, Brazil; ²Departamento de Alimentos (DEALI), ENUT/UFOP, MG, Brazil; ³Departamento de Ciências Biológicas (DCBI), ICEB/UFOP, MG, Brazil; ⁴Departamento Básico de Saúde, UFJF, Campus Governador Valadares, MG, Brazil.

Introduction: Oxidative stress caused by increased cholesterol has been suggested as major risk factor for various diseases correlated with hypercholesterolemia. Recent studies have classified uvaia as source of bioactive compounds. In addition it has been demonstrated high antioxidant capacity in vitro. Objective: To characterize the uvaia juice concerning its antioxidant activity and total polyphenols amount as well as to evaluate its effect on the oxidative stress markers and antioxidant enzymes in rats fed a hypercholesterolemic diet.

Methods: Fischer rats were divided into 4 groups of 8 animals according to the treatment received: control group (C) received AIN-93M diet; control uvaia (CUv), received AIN-93M diet and 2 mL of uvaia juice; hypercholesterolemic (H) received hypercholesterolemic diet and hypercholesterolemic group uvaia (HUv) received hypercholesterolemic diet and 2 mL of uvaia juice. Weight gain, food intake and food efficiency were estimated. Uvaia fruit was analyzed for its polyphenol contents and its antioxidant capacity in vitro. Data were subjected to analysis of bivariate variance. Differences were considered significant at p<0.05. Results: The uvaia juice showed a considerable content of phenolic compounds (135.14±9.75 milligrams of gallic acid equivalents per 100g uvaia juice) and high antioxidant activity (4.42±0.04 trolox equivalent antioxidant capacity-TEAC µM/g). The animal groups showed no significant difference in weight gain. Already, food intake was lower in groups that fed the hypercholesterolemic diet while food efficiency was higher in these groups. The uvaia juice altered the concentration of oxidative stress markers. Serum TBARS were lower in CUv and HUv groups and hepatic carbonyl protein was decreased in HUv group compared to the H group. In addition, we observed an increased PON1 activity in HUv group compared to the H group. Conclusion: These results suggest that supplementation with the Uvaia juice showed a significant antioxidant role in a well-established model of hypercholesterolemia in rats.

Key words: Uvaia, oxidative stress, antioxidant.

Supported by: FAPEMIG, CNPq e UFOP.