Diet supplementation with acai (Euterpe oleracea Mart.) pulp improves biomarkers of oxidative stress and the serum lipid profile in rats


Abstract

Objective

We investigated the antioxidant potential and hypocholesterolemic effects of acai (Euterpe oleracea Mart.) pulp ingestion in rats fed a standard or hypercholesterolemic diet.

Methods

Female Fischer rats were fed a standard AIN-93 M diet (control) or a hypercholesterolemic diet that contained 25% soy oil and 1% cholesterol. The test diet was supplemented with 2% acai pulp (dry wt/wt) for control (group CA) and hypercholesterolemic rats (group HA) for 6 wk. At the end of the experimental period, rats were sacrificed and the blood and livers were collected. To evaluate the effect of acai consumption, levels of protein carbonyl and sulfhydryl groups, superoxide dismutase activity, and lipid profiles of the sera were measured.

Results

Animals that were fed the hypercholesterolemic diet presented increased levels of total and non-high-density lipoprotein cholesterol and decreased levels of high-density lipoprotein cholesterol. Supplementation of this diet with acai caused a hypocholesterolemic effect by reducing total and non-high-density lipoprotein cholesterol. Serum levels of carbonyl proteins and total, free, and protein sulfhydryl groups were reduced by acai ingestion in animals receiving the standard or hypercholesterolemic diet. Acai supplementation reduced paraoxonase activity only in the control group.

Conclusion

These results suggest that the consumption of acai improves antioxidant status and has a hypocholesterolemic effect in an animal model of dietary-induced hypercholesterolemia.

Keywords

Euterpe oleracea; Acai; Antioxidant status; Hypocholesterolemic effect; Rats

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