FREE PAPER 2:

EFFECT OF INCORPORATION OF SELECTED ANTIOXIDANTS ON LIPID PROFILES OF WISTAR RATS FED DIETS CONTAINING DIFFERENT OILS

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Background

It is widely believed that consumption of antioxidant rich food will help to improve health status. Hence, it is vital to improve the bioavailability of dietary antioxidants and the bioavailability of these antioxidants can be enhanced by increasing their absorption.

Objectives

Compare the lipid profiles of Wistar rats fed diets incorporated with soybean oil (SO), coconut oil (CO) and olive oil (OO) and the same oils incorporated with two selected antioxidants, caffeic (CA) and vanillic (VA) acids.

Method

Male Wistar rats (5 weeks, 180-200g) were randomly divided into six groups [(n=7), ethical approval 13/14]. Diets were prepared by incorporating either SO, CO or OO (2%). For studying the effect of incorporation of antioxidants on lipid profiles, diets were also prepared by adding CA and VA with the different oils (SO+CA+VA, CO+VA+CA and OO+CA+VA). Rats were fasted for 12-14h and blood was collected through the tail vein on day 0 and day 45. Serum was analysed for triglycerides (TG), low density lipoprotein-cholesterol (LDL-C), total cholesterol (TC) and high density lipoprotein-cholesterol (HDL-C) using test kits (BIO LABO SA - France).

Results

Compared to the SO (140.2±9.7mg/dL) fed group, CO (187.1±8.7 mg/dL) and OO (165.1±8.9 mg/dL) fed rats had a significantly ($p \leq 0.05$) higher TG. Rats fed with CO (30.6±2.4mg/dL) and SO (33.5±5.3mg/dL) had significantly higher ($p \leq 0.05$) LDL-C than OO (21.2±1.7mg/dL). Feeding different oils had no effect on HDL-C or TC.

Conclusion

The addition of CA and VA into feed has had no effect on lipid profiles of Wistar rats fed diets prepared incorporating different oils.

Keywords: Caffeic acid, coconut oil, lipid profile, vanillic acid, Wistar rats