Abstract

Background & Aim: n-3 fatty acid intake has been associated with inflammatory benefits in cardiovascular disease (CVD). Functionalising meat may be of great interest. The aim of the present study was to assess the effect of functional meat containing n-3 and rosemary extract on inflammatory and oxidative status markers in subjects with risk for CVD. Methods and results: A randomised, double-blind, cross-over study was undertaken to compare the effects on the above markers of consuming functional or control meat products. 43 volunteers with at least two lipid profile variables showing risk for CVD were randomly assigned to receive functional meat (FM) or control meat (CM) over 12-weeks with a 4-week wash-out interval before crossover. Functional effects were assessed by examining lipid profile, CRP, PAI-1, TNF-alpha, IL-6, fibrinogen (inflammatory markers), and TBARS, FRAP and 8-iso-PGF2α (oxidative status markers). 33 subjects (24 women) aged 50.7±8.8 years completed the study. In FM treatment, PAI-1, fibrinogen and 8-iso-PGF2α decreased significantly after 12 weeks, while FRAP significantly increased. In contrast, in CM treatment, a significant increase was seen in PAI-1, while FRAP significantly declined. Significant differences were also seen between the FM and CM treatments after 12 weeks in terms of the change observed in PAI-1, FRAP and 8-iso-PGF2α values. No significant differences were seen in anthropometric variables nor were adverse effects reported. Conclusion: The consumption of FM containing n-3 and rosemary extract improved oxidative and inflammatory status of people with at least two lipid profile variables showing risk for CVD. The inclusion of such functional meat in a balanced diet might be a healthy lifestyle option. ClinicalTrials.gov NCT0199088.

Keywords