Lactobacillus acidophilus NCFM, Inulin, and Oat Bran Reduce TC and LDL-C in Adults with Hypercholesterolaemia

ABSTRACT

The present study was carried out to examine the effect of daily intake of 20 × 109 CFU Lactobacillus acidophilus NCFM or 10 g inulin or 10 g beta-glucan (β-glucan) or synbiotic on fasting blood lipid levels in healthy adult men and women with moderately raised total plasma cholesterol (TC). This study was a randomized-controlled intervention in which 30 participants received either 10 g inulin or 10 g β-glucan or 20 × 109 CFU L. acidophilus NCFM or synbiotic for a period of 8 weeks. Fasting blood samples were collected before the supplementation period (baseline) and at week 8, with a follow-up at week 12. There was a trend for TC values, compared with baseline, to be lower in the probiotic group by 9.31%, (−0.55 mmol/l; $P > 0.05$), inulin group by 9.58%, (−0.53 mmol/l; $P > 0.05$), and β-glucan group by 8.55%, (−0.47 mmol/l; $P > 0.05$) at week 8. There was a trend for LDL-C values, compared with baseline, to be lower in the probiotic group by 9.34% (−0.34 mmol/l; $P > 0.05$), inulin group by 7.98% (−0.29 mmol/l; $P > 0.05$), and β-glucan group by 16.08% (−0.41 mmol/l; $P > 0.05$) at week 8. The changes were statistically insignificant but clinically significant in all groups except synbiotic, as all levels fell into the desirable biochemistry range. There were no statistical and clinical changes in the TC and LDL-C levels in synbiotic groups. There were no statistical and clinical changes in the HDL-C and TG levels in all groups. These data suggest that the intervention supplementation except synbiotics may improve blood lipid profiles, mainly TC and LDL-C.