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A calcium rich natural marine-derived multi-mineral supplement has beneficial effects on lipid concentrations in postmenopausal women

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Calcium (Ca) supplements are widely taken by postmenopausal women for the maintenance of bone health and prevention of osteoporosis. Beneficial effects on high-density lipoprotein (HDL), low-density lipoprotein (LDL) and total cholesterol (TC) have been reported following Ca supplementation either alone or with vitamin D[1, 2]. Short-chain fructooligosaccharides (scFOS) have been shown *in vivo* to increase Ca absorption and thus may indirectly affect lipid status[3]. The aim of this study was to investigate the effects of a Ca rich natural marine-derived multi-mineral supplement (trade name Aquamin) administered alone or in combination with scFOS (trade name Nutraflora) on circulating lipid concentrations in postmenopausal women.

A total of 214 postmenopausal women (mean BMI 27·3 (SD 4·7) kg/m^2) aged 48–75 years completed a two year double-blind placebo controlled trial. Participants were randomly assigned to daily supplements of 800 mg of Ca (2·4 g Aquamin) ($n = 75$), 800 mg of Ca with 3 g of scFOSs (3·2 g Nutraflora) (CaFOS) ($n = 60$) or maltodextrin (MD) ($n = 79$). TC, LDL, HDL and triglyceride concentrations were measured at baseline and 24 months. Per-protocol analysis using ANCOVA (with baseline measures as covariates) was conducted to assess time × treatment effects between groups, controlling for age, BMI and baseline calcium intake (mean intake 868 mg Ca/day) using least significant difference for post hoc comparisons.

A significant time × treatment effect was observed for LDL for the Ca ($P = 0·009$) and CaFOS groups ($P = 0·01$), see Fig. 1. Significant time × treatment effects were found for TC for the Ca and CaFOS groups ($P = 0·02$ and $P = 0·03$ respectively), see Fig. 2. There was no significant treatment effect for the two groups for HDL, LDL:HDL and triglyceride concentrations.

Supplementation with Aquamin, a Ca rich natural marine-derived multi-mineral supplement has beneficial effects on the lipid profile of postmenopausal women over two years; a possible mechanism is Ca binding to bile acids which might lead to increased excretion of bile salts and a subsequent increase in lipolysis. Administration of Aquamin may have a role in maintaining cardiovascular health in women and further research on this area is warranted.

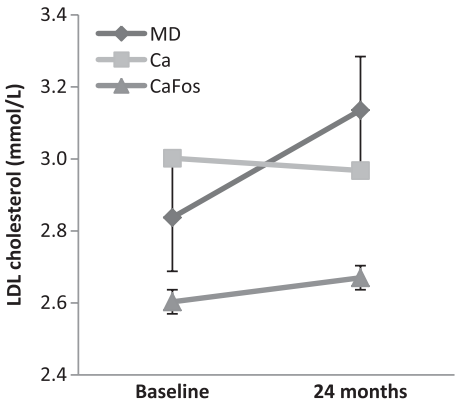

Fig. 1 Effects on LDL cholesterol over 24 months. Data are means ± SE.

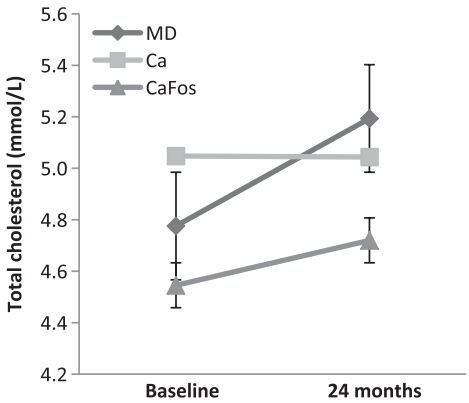

Fig. 2 Effect on Total cholesterol over 24 months. Data are means ± SE.

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