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Effect of time of administration on cholesterol-lowering by psyllium: a randomized cross-over study in normocholesterolemic or slightly hypercholesterolemic subjects

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Abstract

Background

Reports of the use of psyllium, largely in hypercholesterolemic men, have suggested that it lowers serum cholesterol as a result of the binding of bile acids in the intestinal lumen. Widespread advertisements have claimed an association between the use of soluble fibre from psyllium seed husk and a reduced risk of coronary heart disease. Given the purported mechanism of cholesterol-lowering by psyllium, we hypothesized that there would be a greater effect when psyllium is taken with breakfast than when taken at bedtime. Secondarily, we expected to confirm a cholesterol-lowering effect of psyllium in subjects with "average" cholesterol levels.

Methods

Sixteen men and 47 women ranging in age from 18 to 77 years [mean 53 +/- 13] with LDL cholesterol levels that were normal or slightly elevated but acceptable for subjects at low risk of coronary artery disease were recruited from general gastroenterology and low risk lipid clinics. Following a one month dietary stabilization period, they received an average daily dose of 12.7 g of psyllium hydrophilic mucilloid, in randomized order, for 8 weeks in the morning and 8 weeks in the evening. Change from baseline was determined for serum total cholesterol, LDL, HDL and triglycerides.

Results

Total cholesterol for the "AM first" group at baseline, 8 and 16 weeks was 5.76, 5.77 and 5.80 mmol/L and for the "PM first" group the corresponding values were 5.47, 5.61 and 5.57 mmol/L. No effect on any lipid parameter was demonstrated for the group as a whole or in any sub-group analysis.

Conclusion

The timing of psyllium administration had no effect on cholesterol-lowering and, in fact, no cholesterol-lowering was observed. Conclusions regarding the effectiveness of psyllium for the prevention of heart disease in the population at large may be premature.

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