Original Research

Effects of Dietary Arabinogalactan on Gastrointestinal and Blood Parameters in Healthy Human Subjects

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Objectives: Arabinogalactan (AG) is a non-digestible soluble dietary fiber that resists hydrolytic enzyme action and enters the large bowel intact where it is fermented by resident microflora. To determine whether AG has similar physiological properties to other soluble dietary fibers, we examined the effect of 15 and 30 g per day of a commercially available AG from Western Larch on several gastrointestinal and blood parameters.

Methods: Gastrointestinal parameters included fecal microflora, fecal enzyme activity, fecal short-chain fatty acids, fecal pH, fecal weight, transit time and bowel frequency. Blood parameters included total cholesterol, HDL cholesterol, LDL cholesterol, triglycerides, Apo-A1, Apo-B, glucose and insulin. The study consisted of two three-week diet treatments with no washout period. Participants (n=20, 11 males, 9 females) consumed their usual diet in addition to 15 or 30 g AG in a beverage sweetened with aspartame as compared to their usual diet with the control beverage.

Results: Significant increases in total fecal anaerobes were observed with 15 g ($p=0.01$) and 30 g AG ($p=0.001$). A significant increase ($p=0.02$) in *Lactobacillus spp.* was observed when subjects consumed AG for a total of six weeks regardless of dose. There were no significant changes in other microflora, fecal enzyme activity, transit time, frequency, fecal weight, fecal pH and short-chain fatty acids. Fecal ammonia levels decreased with 15 g ($p=0.001$) and 30 g ($p=0.002$) AG. No significant changes in blood lipids or blood insulin were observed.

Conclusions: These data suggest that dietary AG is easily incorporated into the diet, well tolerated in subjects and has some positive effects on fecal chemistry.