

## DIETITIANS' NEWS

### A Flax Lignan Supplement Decreased HbA1c in Patients with Type 2

#### Diabetes

By Diane H. Morris

Glycated hemoglobin A1c (HbA1c) concentration is an accurate index of glycemic control.<sup>1</sup> HbA1c concentrations increase when blood glucose levels are high over a long period; chronic high blood glucose or hyperglycemia amplifies reactions between sugars like glucose and proteins like hemoglobin, resulting in glycated products such as HbA1c. The concentration of HbA1c strongly predicts the risk of complications associated with type 1 and type 2 diabetes mellitus, including eye disease, kidney and nerve disease, and cardiovascular disease (CVD).<sup>2</sup> Indeed, a prospective study of 10,232 men and women in the United Kingdom found that Hb1Ac significantly predicted CVD mortality.<sup>3</sup>

In a study of patients with type 2 diabetes, HbA1c concentrations decreased significantly when patients consumed a flax lignan supplement for 12 weeks compared with when they consumed a rice flour placebo supplement.<sup>4</sup> The crossover study was designed to assess whether a flax lignan enhanced glycemic control (measured by blood HbA1c concentration) in this population.

Researchers An Pan and colleagues at the Chinese Academy of Sciences and Fudan University, both located in Shanghai, China, and the University of Texas-MD Anderson Cancer Center in Texas designed a clinical study to assess the effects of a flax lignan dietary supplement on blood lipids, insulin sensitivity and glycemic control in patients with type 2 diabetes. Seventy-three adults with type 2 diabetes were recruited from urban districts of Shanghai. Thirty-seven subjects started the flax lignan supplement and 36 began on the rice flour placebo. After 12 weeks, the subjects completed an 8-week washout period and switched to the alternate group for 12 weeks. The lignan supplement derived from flax provided 360 mg of secoisolariciresinol diglucoside (SDG)/day.

Two differences were observed between the flax lignan and placebo groups: Hb1Ac concentrations decreased 0.10% ( $p < 0.001$ ) and urinary lignan concentrations increased more than 11-fold ( $p < 0.001$ ) in the flax lignan group compared with the placebo group, which experienced a small increase in both variables. Furthermore, in the flax lignan supplementation group, insulin resistance (measured by the Homeostasis Model Assessment of Insulin Resistance or HOMA-IR) decreased significantly by 3.3% from baseline. The flax lignan supplement did not affect fasting blood lipids or glucose and insulin concentrations in this study.

The researchers concluded that a flax lignan supplement taken daily resulted in a modest improvement in glycemic control (measured by HbA1c concentration) in these adults with type 2 diabetes. In addition, the flax lignan supplement was well tolerated. More research is needed to determine whether the findings are clinically significant and to identify the optimum flax SDG supplement level for patients with diabetes.

### References

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