Format: Abstract

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Improvement of blood glucose control and insulin sensitivity during a long-term (60 weeks) randomized study with amino acid dietary supplements in elderly subjects with type 2 diabetes mellitus.

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Abstract

A decrease in lean muscular mass causes sarcopenia, a disease frequently found in the elderly population. The reduction of muscle mass may be responsible for reduced insulin sensitivity and decreased glucose uptake, thus increasing the risk for hyperglycemia and insulin-resistance syndrome in elderly subjects with type 2 diabetes mellitus. We therefore wanted to determine the effect of a special mixture of oral amino acids (AAs) on elderly subjects with type 2 diabetes. A randomized, open-label, crossover study was conducted in 34 subjects with diabetes (age range, 65-85 years) assigned to 2 distinct treatments (AAs and placebo). In spite of treatment with oral hypoglycemic drugs or insulin, all subjects were in poor metabolic control (glycated hemoglobin [HbA(1c)] >7%). The subjects studied had normal body weight (ie, body mass index within 19-23). AAs consisted of 70.6 kcal/day (1 kcal = 4.2 kJ) of 8 g of AA snacks, given at 10.00 am and 5.00 pm. Fasting and postprandial (1 hour and 2 hours) blood glucose, serum insulin, and homeostatic model assessment of insulin resistance (an index of insulin resistance) significantly decreased during AA treatment. Furthermore, a significant reduction of HbA(1c) levels was found throughout the study. No significant adverse effects were observed during the active treatment. We suggest that nutritional supplementation with a special mixture of oral AAs is safe and significantly improves metabolic control and insulin sensitivity in poorly controlled elderly subjects with type 2 diabetes. This effect was consistent during the long-term observation period of 60 weeks and was also present after the crossover from AAs to placebo.

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