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カルコン（4HD）含有明日葉粉末の境界域糖尿病者に対する長期摂取時の有効性と安全性

Antidiabetic Effect and Safety of Long-term Ingestion of “Ashitaba”（*Angelica keiskei*）Powder containing Chalcone (4HD) on Borderline Mild Hyperglycemia

“Ashitaba” Chalcone (4-hydroxyderricin：4HD), which has insulin-like activity *in vitro* and *in vivo*, induces adipocyte differentiation and glucose uptake, and inhibit the hyperglycemia in genetically diabetic mice (KK-A^y). We evaluated the chronic antidiabetic effect and safety of long-term ingestion of “Ashitaba” powder containing Chalcone (4HD) on subjects with borderline blood glucose or mild hyperglycemia in a randomized, double-blind, placebo-controlled, parallel group study. The subjects were 69 adults (male/female =41/28, age=32～65 year old), who were not yet on medication. The treatment group was given the test “Ashitaba” Powder containing 4.9 mg of Chalcone (4HD)/10.5 g/day, and control group was given the placebo powder, for 12 weeks. The results revealed that the ⊿glucose AUC for 12weeks were lower ($p < 0.1$) and ⊿glycoalbumin AUC for 12weeks were significantly lower ($p < 0.05$) compared with the placebo group. The fasting blood glucose (FBG) was significantly lower ($p < 0.05$) at 4weeks and 8weeks, in borderline (110 ≦ FBG < 126) and mild hyperglycemia (126 ≦ FBG) groups, respectively, compared with placebo group No FBG-lowering effect was observed in normal (FBG < 110) group. Furthermore, blood adiponectin, which exerts insulin sensitizing and anti-metabolic syndrome effects, was significantly increased ($p < 0.01$) at 12weeks compared with placebo group. Blood examination, urinalysis, physical examination did not reveal any abnormal changes of clinical importance. These results demonstrate that chronic ingestion of “Ashitaba" Powder containing Chalcone (4HD) moderately reduces the blood glucose and improved blood glucose control through increase of adiponectin in subjects with borderline or mild hyperglycemia and that it is also very safety.