Antrodia cinnamomea on the Effect of Lowering Plasma Glucose and Improving Insulin Sensitivity in Steroid Induced Insulin Resistant Rats.

Shih-Liang Chang
E-mail: slchang@mail.dyu.edu.tw

ABSTRACT

Aim and Background: Insulin resistance is a major factor that leads to type II diabetes. The aim of this study would explore the effect of Antrodia cinnamomea (AC) on insulin sensitivity and signal transduction pathway of steroid-induced insulin resistant rats (SIIR).

Materials and Methods: The SIIR rats were divided into experimental group and control (saline) group randomly, the experimental group was fed the different doses (100, 200, 500 mg/kg) of AC mycelium powder. Blood samples were collected from the femoral vein, and then plasma insulin and free fatty acid (FFA) were assayed. The changes of plasma glucose were assayed to study the hypoglycemic effect. The insulin resistance index (HOMA-IR) and the plasma FFA on the SIIR rats were assayed to study the insulin resistance. Then the changes of relative signal proteins (IRS-1, Glut-4, PI3-K) were also assayed by western blot to study the insulin relative signal transduction.

Results: The rats were fed SIIR with AC powder (at the dose of 200 mg/kg) in the first 30 minutes, the percentage of hypoglycemic was 26.6±6.8%, and the lowering percentage of plasma FFA was 19.2±4.0%. They were all significantly higher than control group respectively. The amount of insulin signal relative proteins, such as Glut-4, IRS-1 and PI3-K were significantly elevated (p<0.05).

Conclusion: After the feeding of AC power to SIIR at a dose of 200 mg/kg, it may have the bioactivity of lowering plasma glucose level through lowering plasma FFA and increasing expression of Glut-4, IRS-1 and PI3-K to improve insulin sensitivity.

Keywords: Antrodia cinnamomea (AC)

REFERENCES