



Effect of Rice Bran Protein Hydrolysates in Rats with Metabolic Syndrome.

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Background and Objective: A chronic carbohydrates or fat diet overload causes an insulin (IR) resistance and metabolic syndrome (MS). Recently, rice bran diet has been demonstrated to attenuate dyslipidemia, hypocholesterolemic, improve hypertension and anti-atherogenic properties in obese mice model. Present study we investigated the protein hydrolysates from rice bran (RBP) on plasma glucose, lipid profiles and serum adipokines in HCHF-induced MS rats.

Method: Male Sprague-Dawley rats were used. Normal control group was fed with chow diet, the MS group was fed with high carbohydrate-high fat diet (HCHF) and 5% fructose drinking water for 12 weeks. After that, in the MS group was orally administrated with pioglitazone, RBP 500 mg/kg or distilled water for further six weeks. Then, fasting blood glucose (FBG), lipid profiles, serum

adipokines and fat metabolism genes were determined.

Result: RBP 500 mg/kg decreased the FBG as compared to MS-control group ($p=0.011$). RBP significantly reduced total cholesterol (TC), triglyceride (TG) and serum leptin as compared to the MS-control group ($p<0.05$). The serum adiponectin of the MS rats receiving RBP and pioglitazone were significantly increased ($p<0.001$ vs. MS-control). We found that serum insulin and HOMA-IR score of MS rats receiving RBP was significantly lower than MS-control ($p<0.001$).

Conclusion: These results indicate that RBP ameliorates the progression of MS, and could be further developed as novel food supplement for metabolic syndrome patients.

Key words: Metabolic syndrome, Insulin resistance, Rice bran protein hydrolysates (RBP).