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Effect of Dietary Restriction on Improvement of Lipid Metabolism and on Mineral Status in Spontaneously Obese Rat (Minko Rat) with Abnormal Lipid Metabolism

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Abstract:
Obesity has become prevalent as a result of changes in our eating habit. We examined the effect of 20% restricted diet (80% diet) on lipid metabolism and mineral status of spontaneously obese rats (Minko rats) with abnormal lipid metabolism segregated from Wistar rats. Female Minko rats (27 weeks old) were separated each into two groups. Normal diet group (control) was fed normal diet freely and other group (80% diet) was fed 80% diet (20% restricted diet) for the diet fed control group rats. These dietary regimens were performed for 14 weeks. The concentrations of Ca, P, Mg, Na, K, S, Fe, Zn and Sr in bone, blood and liver, and biochemical plasma test of the rats were determined. Triglyceride and non esterified fatty acid concentrations were significantly low, and HDL-cholesterol concentrations were significantly high in plasma of rats fed 80% diet (20% restricted diet) compared to that of normal group rats. These results suggest that lipid metabolic status were improved. We previously reported that 50% dietary restriction induced hypoproteinemia and mineral imbalance in liver. Although the composition of diet was same, lipid metabolism and mineral concentrations were affected by restricted diet

Key words: obesity, restricted diet, lipid metabolism, mineral

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