



Exercise Biochemistry Review

Proceedings of IBEC 2018, Beijing, China, October 23-25
PO-043

The Effects of One-Time High Intensity Intermittent Training on Expression of LC3 Gene in Rats' White Adipose Tissue

Qishu zhou, Chunyu Liang, Yafei Li, Yi Yan
Beijing Sport University

Objective To investigate the effect of one-time high-intensity intermittent exercise in white fat autophagy in obese rats and provide a theoretical basis of the molecular mechanism of exercise fat loss.

Methods Eighteen male 3-weeks-old rats were selected and divided into control group fed with normal diet (C), high-fat diet group fed with high fat diet (H). After 16 weeks, there were twelve obesity rats that divided into diet group (HS) and exercise group (HE). The other six control group rats of 19 weeks age were used as the standard (CS group). OE group did the high intensity intermittent exercise once. The CS group and the CS group were kept quietly. Three groups were taken subcutaneous white adipose tissue(S) and epididymal white adipose tissue (E) immediately after exercise. Mensurate the expression of LC3 gene in the tissue using the fluorescent quantitative PCR.

Results 1. The expression of LC3 mRNA from white fat tissue was different to the tissues, which the expression of epididymal white adipose tissue of each group was higher than that in subcutaneous white adipose tissue ($P < 0.01$). 2. Compared with CS group, the expression of epididymal white fat adipose tissue LC3 mRNA decreased ($P < 0.01$) and the expression of the subcutaneous white adipose tissue increased from HS group ($P < 0.05$). 3. Compared with OS group, the expression of epididymal white fat adipose tissue LC3 mRNA decreased ($P < 0.05$) and the expression of subcutaneous white adipose tissue decreased from OS group.

Conclusions The expression of LC3mRNA in epididymal white fat adipose tissue of rats was significantly higher than that of subcutaneous white fat. The changes of LC3mRNA expression of adipose tissue caused by high-fat diet have tissue differences. One-time high-intensity intermittent exercise can reduce the expression of LC3mRNA in fat tissue of obese rats. Its regulatory mechanism needs to be further studied.