عنوان مقاله:

Investigating the impact of aerobic training on myokine gene expression in the skeletal muscle of wistar rats

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خلاصه مقاله:

Background: Skeletal muscle is a tissue that secretes myokines from muscle cells in response to training stimuli and muscle contractions. Therefore, this study aimed to investigate the effect of ۴-week moderate-intensity aerobic exercise on the expression of three genes: apelin, decorin, and musclin in the skeletal muscle fibers of Wistar rats. In addition, the study examined the changes in gene expression levels during the training period. Methods: The present study enrolled ۱۶ male Wistar rats with an approximate age of eight weeks and a weight range of ۲۰۰-۲۲۰ grams. They were randomly divided into two equal groups: An aerobic exercise group (n=۸) and a control group (n=۸). During the four-week training period, the experimental group performed aerobic exercises on a treadmill with an intensity of ۵۰-۷۰% of their maximum power, for three sessions per week, while the control group did not engage in any activity. After completing the training period, the rats were sacrificed ۴۸ hours later to evaluate the gene expression of the study variables using the real-time PCR method for tissue analysis. An independent t-test was used to examine the difference between groups, and statistical significance was set at P <.۰۵. Results: The independent t-test results indicated that the gene expression levels of all three variables: Musclin, decorin, and apelin, were significantly higher in the aerobic exercise group compared to the control group. Conclusion: The study findings suggest that aerobic exercise can potentially to increase the gene expression of three specific myokines: apelin, decorin, and musclin in skeletal muscles. These myokines are known to play an essential role in energy homeostasis, and their increased expression levels could have potential health benefits for individuals engaged in aerobic exercise.

کلمات کلیدی:

Moderate Intensity Aerobic Exercise, Apelin, Decorin, Musclin protein, Energy homeostasis associated protein