

عنوان مقاله:

Conjugated linoleic acid supplementation enhances insulin sensitivity and peroxisome proliferator-activated receptor gamma and glucose transporter type ۴ protein expression in the skeletal muscles of rats during endurance exercise

محل انتشار:

مجله علوم پایه پزشکی ایران، دوره 19، شماره 1 (سال: 1395)

تعداد صفحات اصل مقاله: 8

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خلاصه مقاله:

Objective(s): This study examined whether conjugated linoleic acid (CLA) supplementation affects insulin sensitivity and peroxisome proliferator-activated receptor gamma (PPAR- γ) and glucose transporter type ۴ (GLUT-۴) protein expressions in the skeletal muscles of rats during endurance exercise. **Materials and Methods:** Sprague-Dawley male rats were randomly divided into HS (high-fat diet (HFD) sedentary group, $n = ۸$), CS (۱.۰% CLA supplemented HFD sedentary group, $n = ۸$), and CE (۱.۰% CLA supplemented HFD exercise group, $n = ۸$). The rats in the CE swam for ۶۰ min a day, ۵ days a week for ۸ weeks. **Results:** The serum glucose and insulin contents and homeostasis model assessment of insulin resistance (HOMA-IR) value of the CS and CE were significantly decreased compared to those of the HS. The PPAR- γ protein expressions in the soleus muscle (SOM) and extensor digitorum longus muscle (EDL) were significantly higher in the CE than in the HS. In addition, the PPAR- γ protein expression in the SOM of the CS was significantly higher than that in the HS. On the other hand, the GLUT-۴ protein expression of the SOM in the CE was significantly higher compared to that in the HS. However, there was no significant difference in GLUT-۴ protein expression in the EDL among the groups. **Conclusion:** CLA supplementation with/without endurance exercise has role in improvement of insulin sensitivity. Moreover, when CLA supplementation was accompanied by endurance exercise, the PPAR- γ protein expression in SOM and EDL and the GLUT-۴ protein expression in SOM were enhanced compared with the control group.

کلمات کلیدی:

Conjugated linoleic acid, Endurance exercise Insulin, PPAR- γ , GLUT-۴

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