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Co-Administration Effects of Conjugated Linoleic Acid and L-Carnitine on Weight Gain and Biochemical Profile in Diet Induced Obese Rats

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Abstract : Obesity as a global health challenge motivates pharmaceutical industries to produce anti-obesity drugs. However, effectiveness of these agents is remained unclear. Because of popularity of dietary supplements, the aim of this study was tp investigate the effects of Conjugated Linoleic Acid (CLA) and L-carnitine (LC) on serum glucose, triglyceride, cholesterol and weight changes in diet induced obese rats. 48 male Wistar rats were randomly divided into two groups: Normal fat diet (n=8), and High fat diet (HFD) (n=32). After eight weeks, the second group which was maintained on HFD until the end of study, was subdivided into four categories: a) 500 mg Corn Oil (as control group), b) 500 mg CLA, c) 200 mg LC, d) 500 mg CLA+ 200 mg LC.All doses are planned per kg body weights, which were administered by oral gavage for four weeks. Body weights were measured and recorded weekly by means of a digital scale. At the end of the study, blood samples were collected for biochemical markers measurement. SPSS Version 16 was used for statistical analysis. At the end of 8th week, a significant difference in weight was observed between HFD and NFD group. After 12 weeks, LC significantly reduced weight gain by 4.2%. Trend of weight gain in CLA and CLA+LC groups was insignificantly decelerated. CLA+LC reduced triglyceride level significantly, but just CLA had significant influence on total cholesterol and insignificant decreasing effect on FBS. Our results showed that an obesogenic diet in a relative short time led to obesity and dyslipidemia which can be modified by LC and CLA to some extent.

Keywords : conjugated linoleic acid, high fat diet, L-Carnitine, obesity
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