

## **Effect of linoleic conjugated acid on serum adiponectin levels in patients with COPD**

### **Abstract:**

**Background and objective:** The main characteristic of chronic obstructive pulmonary disease (COPD) is a chronic airway and systemic inflammation. Adiponectin secreted by adipose tissue and recognized as anti-inflammatory and cardioprotective effects, by stimulating the release of other cytokines. Concerning the anti-inflammatory effect of conjugated linoleic acid (CLA) supplementation, we investigated the effect of supplementation CLA on serum adiponectin in COPD patients.

**Methods:** In a double-blind clinical trial, 90 COPD patients were randomly assigned to supplementation and control groups (n=45 for each group). In the supplement group, patients received 3.2 gr CLA daily for 6 weeks, while those in the control group received placebo. Blood sample (3-5 cc) was collected from all subjects before receiving the supplementation or placebo and also at the end of the study for analysis of serum adiponectin levels. During the study, their dietary intake levels were assessed using the 24-hours dietary recall three days a week at the beginning and the end of the study. Also, we compared the CAT score at the beginning and the end of study in both groups.

**Results:** The adiponectin serum levels significantly increased in the supplement group [ $9.67 \pm 2.83$  vs.  $10.74 \pm 3.97$ ,  $p=0.007$ ] compared to the placebo group [ $10.28 \pm 3.83$  vs.  $10.79 \pm 3.92$ ,  $p=0.22$ ]. In addition, the CAT score results showed that quality of life was improved significantly in CLA supplement group ( $p=0.001$ ).

**Conclusion:** CLA supplementation may improve the quality of life of patients with COPD by increasing the serum cardioprotective anti-inflammatory cytokines such as adiponectin.

**Keywords:** Conjugated linoleic acid, Adiponectin, COPD