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The Lipid Peroxidation in Chronic Obstructive Pulmonary Disease

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Objectives: Malondialdehyde (MDA) is an important marker of the lipid peroxidation and progression of chronic obstructive pulmonary disease (COPD) is correlated with oxidative stress. In this study, we investigated relationship between MDA and lipid concentrations in patients with COPD.

Methods: The study consisted of COPD patients (n:14) and the healthy control group (n:14). The mean age of the patient population was 71.857 ± 9.944 and the healthy control group was 65.857 ± 7.654 . The levels of serum MDA were measured spectrophotometrically by a modified Beuge method (Beuge and Aust, 1978). The levels of total cholesterol, low density lipoprotein (LDL), high density lipoprotein (HDL) and triglycerid were measured by an automated analyzer using commercial kits. The Student's t-test was used to analyze the data for comparison of two groups (COPD and healthy control).

Results: The serum MDA levels of the patients with COPD (5.534 ± 1.393 nmol/mL) were significantly higher than control group (1.318 ± 0.407 nmol/mL), ($p < 0.001$). The levels of serum triglycerid, total cholesterol, LDL were not significantly different between COPD and control group ($p > 0.05$). HDL cholesterol levels were lower in COPD patients compared to control group and statistically significant ($p < 0.001$).

Conclusion: This study shows that serum HDL cholesterol and MDA levels may be important in determining the oxidant/antioxidant imbalance in COPD.

Keywords: Chronic obstructive pulmonary disease (COPD), lipid peroxidation, malondialdehyde