Homocystein Level and Total Antioxidant Capacity in Chronic Obstructive Pulmonary Disease

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Abstract

Background and Objective: Oxidant-antioxidant imbalance plays a key role in pathogenesis of chronic obstructive pulmonary disease (COPD). This study aimed to evaluate homocystiene and total antioxidant capacity in COPD patients, compared to smoker and non-smoker healthy people.

Material and Methods: We measured total antioxidant capacity with Cayman Kit, uric acid with Pars Azmoon kit، homocysteine with ELISA Kit and inflammatory cells (leukocytes) in 29 COPD patients, 29 smokers and 29 non-smokers.

Results: Uric acid was significantly higher in COPD patients compared to healthy smokers and healthy non-smokers ($p<0.05$). Total antioxidant capacity was significantly lower in COPD patients compared to healthy, non smokers ($p=0.003$). In COPD patients, homocysteine and leukocytes levels were significantly higher than those in healthy smokers ($P<0.05$) and healthy non- smokers ($p<0.001$).

Conclusion: According to high inflammatory cells and low antioxidant capacity in COPD, early administration of appropriate medication is recommended to reduce systemic and topical inflammation. Reduction in the exposure to oxidizing compounds can slow the process of degradation and damage to lungs.

Keywords: Chronic Obstructive Pulmonary Disease; Homocysteine; Oxidative Stress

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