World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:10, No:07, 2016

Clara Cell Secretory Protein 16 Serum Level Decreases in Patients with Non-Smoking-Related Chronic Obstructive Pulmonary Diseases (COPD)

Authors : Lian Wu, Mervyn Merrilees

Abstract : Chronic Obstructive Pulmonary Disease (COPD) is a worldwide problem, characterized by irreversible and progressive airflow obstruction. In New Zealand, it is currently the 4th commonest cause of death and exacerbations of COPD are a frequent cause of admission to hospital. Serum levels of Clara cell secretory protein-16 (CC-16) are believed to represent Clara cell toxicity. More recently, CC-16 has been found to be associated with smoker COPD. It is produced almost exclusively by non-ciliated Clara cells in the airways, and its primary function is to protect the lungs against oxidative stress and carcinogenesis. After acute exposure to cigarette smoke, serum levels of CC-16 become elevated. CC16 is a potent natural immune-suppressor and anti-inflammatory agent. In vitro, CC16 inhibits both monocyte and polymorphonuclear neutrophils chemotaxis and phagocytosis. CC16 also inhibits fibroblast chemotaxis. However, the role of CC-16 in non-smoking related COPD is still not clear. In this study, we investigated serum CC-16 levels in non-smoking related COPD. Methods: We compared non-smoker patients with COPD (FEV1<60% of predicted, FEV1/FVC <0.7, n=100) and individuals with normal lung function FEV1≥ 80% of predicted and FEV1/FVC≥ 0.7, n=80). All subjects had no smoking history. CC-16 was measured by ELISA. Results and conclusion: Serum CC-16 levels are reduced in individuals with non-smoking related COPD, and there is a weak correlation with disease severity in non-smoking related COPD group compared to non-smoker controls.

Keywords : COPD, CC-16, ELISA, non-smoking-related COPD
Conference Title : ICBMS 2016 : International Conference on Biological and Medical Sciences
Conference Location : Zurich, Switzerland
Conference Dates : July 21-22, 2016