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• **Fibrinogen and Inflammatory Cytokines in Spontaneous Sputum of Sulfur Mustard Exposed Veterans**
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Background: Sulfur mustard (SM) causes delayed complications respiratory system of exposed individuals. Inflammatory cytokines are considered as the main regulators of pulmonary complications and fibrinogen which is regarded as a biomarker in certain pulmonary difficulties is important in SM-exposed victims as well. **Materials and Methods:** In this pilot study, the sputum level of IL-1 α and β , TNF, IL-1Ra, IL-6 and fibrinogen in SM-exposed veterans having spontaneous sputum, was examined and their correlation with pulmonary function was studied. The participants were categorized in two major subgroups (hospitalized and non-hospitalized) based on the severity of the clinical problems at the time of exposure. All participants were visited by clinicians and their respiratory functions were measured by spirometry. The classification of severity of pulmonary involvement was also done according to the Global Initiative for Chronic Obstructive Lung Disease (GOLD). ELISA assay was performed to measure levels of cytokines in sputum and serum samples. **Results:** The mean value of TNF, IL-1 α and IL-1 β was 524.15, 115.15, 1951.33 pg/ml respectively, IL-1Ra and IL-6 are 6410.52 and 124.44 pg/ml respectively; fibrinogen is 71.59 ng/ml and index of IL-1Ra/IL-1 β is 7.78. There is more TNF- α and IL-1 β and less IL-1Ra and fibrinogen in the sputum of hospitalized ones, but there is no statistically significant difference between IL-1 α and IL-6 amounts in the two groups. TNF- α and IL-1 β are also increased in moderate and severe conditions of pulmonary status and fibrinogen is decreased significantly in problematic persons. TNF has negative and IL-1Ra has positive correlation with FEV1. IL-1 β and fibrinogen have strong correlation with spirometry GOLD. **Conclusion:** The study demonstrated significant correlations between fibrinogen, TNF and pulmonary function. It was also concluded that sputum is valuable for evaluating respiratory system status.

Keywords: Sulfur mustard, Sputum, Fibrinogen, TNF, IL-1, Pulmonary Function