Long Term Impact of Sulfur Mustard Exposure on Leukocyte Subpopulations; Sardasht-Iran Cohort Study (SICS)

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Background: The most important long-term morbidity problem of SM toxicity is pulmonary complications but the pathogenesis of these complications is not clearly understood. This study evaluates the leukocyte sub-sets and their correlation with pulmonary function in SM exposed civilian cases 20 years post-exposure as gathered in the context of the Sardasht-Iran Cohort Study (SICS). Materials and Methods: Samples were randomly selected from two groups, SM-exposed (n=372) and control (n=128), with the same ethnicity, culture, and demography. Three color flow cytometry (BD Biosciences) was applied for leukocyte sub-population detection. Results: It was found that absolute numbers of NK cells are highly increased in peripheral blood of exposed cases but no changes were seen in any other peripheral blood sub-populations. Conclusion: We have proposed that NK cells are involved in the pathogenesis of long term SM-induced pulmonary complications.

Keywords: Sulfur Mustard, Leukocyte Subpopulations, Pulmonary function