

EFFECTS OF TOBACCO SMOKING ON ALPHA-2-MACROGLOBULIN AND SOME BIOCHEMICAL PARAMETERS IN THAI MALES

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Abstract. This cross-sectional study was carried out among smokers and nonsmokers from suburban and urban residential areas in Bangkok, Thailand. One hundred eighty-six smokers and 102 nonsmokers, who voluntarily participated in the study, were investigated. The levels of alpha-2-macroglobulin (A2M), albumin, total protein, and other biochemical and hematological parameters as well as body mass index (BMI) measurements were taken. The levels of A2M, BUN and WBC counts were significantly higher in smokers than nonsmokers. Total protein and albumin concentrations were significantly lower in smokers than nonsmokers, but the levels of other biochemical parameters did not differ between the two groups. The relationship between BMI and median A2M levels in the smoker and nonsmoker groups showed the higher the BMI, the lower the serum A2M levels. Smokers had a higher percentage of hyperalpha-2-macroglobulinemia than nonsmokers. A2M concentrations correlated inversely with BMI, BUN, albumin, total cholesterol, triglycerides, and the quantity of cigarettes smoked for the total period of smoking (cigarette pack-years). Multiple regression analysis revealed that albumin and cigarette pack-years were the most closely related variables to A2M concentrations among smokers. These findings suggest cigarette smoking affects inflammation markers, increasing A2M and WBC and decreasing albumin. This effect may be the mechanism responsible for the development of chronic disease states associated with smoking since cigarette smoke contains many toxic compounds harmful to health.

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