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Measurement of the serum level of copper, molybdenum and lipids in personnel of Copper Complex of Sarcheshmeh (Kerman)

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*Abstract

Background: Copper (Cu) and molybdenum (Mo) are among the essential trace elements and affect on lipids Metabolism.

Objective: The aim of this study was to measure the serum levels of Cu and Mo and investigate the connection of these two trace elements and lipids concentration in SCC personnel.

Methods: This was an analytical sectional study that was carried out on 3 groups of volunteers (40 in each group). Group I (case group) consisted of the workers of molybdenum unit that were highly exposed to Cu and Mo. Group II includes the official employees of SCC. Group III, age matched adult men who were living in Rafsanjan city. Fasting blood samples of the volunteers were collected, then serums were separated and the concentration of Mo and Cu were measured by atomic absorption spectrophotometry. Serum cholesterol (Cho), HDL-C and LDL-C were measured in serum by autoanalyzer.

Findings: The mean concentration of Mo was significantly higher in group I comparing with group II and III (P<0.001). The average level of Cu had the same pattern as Mo, but the P value was different between group I and II (P<0.01). Cho and LDL-C levels in group I were lower than those of group II and III (P<0.001). while HDL-C was higher in group I than group II and III (P<0.001).

Conclusion: The results suggest that exposure to high amount of Mo and Cu decrease cho and LDL-C along with increasing the level of HDL-C Mo and Cu.

Keywords: Metabolism, Fats, Molybdenum, Copper, Elements

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