

8. SUMMARY

SERUM LEVELS OF COPPER, ZINC AND MAGNESIUM LEVELS IN THE PATIENTS WITH METABOLIC SYNDROME

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Metabolic syndrome (MS) is a comorbidity of insulin resistance, impaired glucose tolerance, abdominal obesity, hypertension and dyslipidemia and associated with increased risk of cardiovascular disease (CVD). Zinc (Zn), copper (Cu), and magnesium (Mg) levels were reported to be linked to the development of chronic diseases, especially coronary heart disease (CHD). Metabolic syndrome might be linked to alterations in serum levels of the mineral elements magnesium, copper and zinc. However, not too many data are available on the serum levels of zinc, copper, and magnesium of the people with metabolic syndrome in Turkey.

Sixty subjects were included in the study. Twenty-six of the subjects were with metabolic syndrome and 34 were healthy controls. Of the total, 37 were women and 23 were men. MS diagnosis was made according to ATP-III criteria when three or more of the following factors were present: Waist circumference >102cm for men, or >88cm for women, elevated blood pressure (elevated hypertension or systolic blood pressure >130 mmHg and/ or diastolic blood pressure >85mm Hg as mean of two measures), elevated triglycerides (>150 mg/dL), decreased HDL (< 40 mg/dL for men or < 50 mg/dL for women), elevated fasting glucose (110 mg/dL) or diabetes. Serum zinc, copper, and magnesium levels were determined by atomic absorption spectrophotometer. Statistical analyses were performed by Independent Samples t test and Pearson linear correlation using SPSS program version 13.0.

Serum zinc, magnesium and copper levels were compared between subjects with MS and control group. The differences in serum levels of copper, zinc and magnesium were not significant between MS and control groups. Serum levels of copper, zinc and magnesium did not correlate with any of the metabolic syndrome components.

Our study performed in Aydın, showed that Cu, Zn and Mg levels were probably affected by the regional dietary habits. Although the power analysis suggested that the number of subjects in the two study groups in our study were sufficient enough to have statistical analysis, we believe it is required to perform

studies with higher number of subjects in which the dietary habits are also questioned.

Keywords: Metabolic syndrome, copper, zinc, magnesium.