The Zinc and Copper Levels in Thalassemia Major Patients, Receiving Iron Chelation Therapy.

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Abstract

Essential trace elements deficiency including zinc and copper are frequently reported in the literature, but the results are controversial. The aim of this study was to evaluate zinc and copper levels in thalassemia major (TM) patients who were on regular transfusion and iron chelation therapy. In a case-control cross-sectional study 43 TM patients and 43 age-matched and sex-matched healthy controls were examined. Patients were selected by convenience sampling method from TM patients who were registered in Thalassemia Clinic during 6 months. Serum zinc and copper levels were evaluated in all subjects. Zinc and copper dietary intake were also assessed. The median zinc level in the participants was significantly lower than the control group (35 [6.3 to 298] vs. 173 [3.1 to 584] µg/dL; P<0.05), but the mean copper level was significantly higher in the patients in comparison with the control group (260±118 vs. 201±69 µg/dL; P<0.05). In contrast, the mean zinc and copper dietary intake in the patient's group were significantly lower than the control group. The mean serum zinc and copper levels in the patient's group were not different according to iron chelation therapy type. Also, zinc and copper levels in the patient's group were not statistically significant based on ferritin level, age, and duration of therapy. Essential trace elements level change and deficiency might occur in TM patients. Hence, routine assessment of these elements is recommended for better management