Trace Elements and Oxidant/Antioxidant Status in Beta-Thalassemia Patients

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ABSTRACT

An genetic condition called -thalassemia major is caused by reduced or absent beta-globin chains. We attempted to measure any association between TAC and TOS with some trace elements (Zn, Cu, Mg, Co, and Se) in β-thalassemia patients as an additional tool in the diagnosis. The study included 52 Arabic Iraqi β-thalassemia primary patients and 44 aged-matched children as a control group. These patients were registered as thalassemia patients in "Miesan center for blood disease" in Maysan province-Iraq. Patients with -thalassemia showed considerably (p0.05) lower levels of Mg as well as significantly (p0.01) lower levels of serum Hb, RBC, HCT, MCV, MCH, TIBC, TAC, Zn, and Se compared to normal controls. MDA, Iron, Ferritin, MCHC, PLT, T. bilirubin, AST, ALT, and Copper levels in patients were substantially higher than in controls (p0.01) and (p0.05), respectively. The current results show that in patients with -thalassemia, trace element levels (Se, Zn, Mg, Cu, and Co) were significantly correlated with TAC and MDA levels. Our findings showed that the relationship between TAC and MDA and a few trace elements (Zn, Cu, Mg, Co, and Se) could be useful markers for predicting disease progression in -thalassemia patients.

Keywords: Beta-thalassemia, Oxidative stress, Total antioxidants capacity, Trace elements

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