Serum Trace Elements Before and 3 Months after Renal Transplantation in Kidney Recipients at Sina Hospital in 2010

Introduction and Objectives: Patients with ESRD have metabolic disorders that can cause changes in the concentration of trace elements in these patients. These changes may include the lack of these elements on the one hand and on the other hand is the accumulation of some elements. The aim of this study is to examine changes in serum levels of these elements. Another objective of this study was to evaluate correlation between kidney function after transplantation with trace elements.
Material and Methods: All ESRD patients (with any etiology) from April 2010 to one year that undergo kidney transplant from a living person at Sinai Hospital were enrolled in this study. We studied serum levels of lithium, magnesium, iron, zinc and copper before transplantation. Twenty-four hours before transplantation, blood samples taken from patients and sent to the laboratory for determination of elements. The patients were evaluated for serum elements, creatinine levels, and graft function 3 months after renal transplantation. The data analyzed by descriptive statistics (absolute and relative frequency, mean and standard deviation) and analytical statistics (T- Test) and SPSS 17. $P_{value}<0.05$ was considered significant.
Results: There were 54 patients, 18 men (33%) and 36 women (67%) with a mean age of 47.67 ± 14.33 years who participated in the study. The study findings show that the amount of magnesium after transplantation shows significantly reduce compared with before transplantation ($2.3_{mmol/L}$ to $1.87_{mmol/L}$). (P=0.000). Iron and copper showed a significant increase after transplantation (P=0.000). But, this was not differences in zinc and lithium level. Significant relationship between magnesium and creatinine levels was found three months after transplantation (P = 0.013). This relationship was also significant in Zn level with creatinine levels (P = 0.007).
Conclusion: Finally, we can expect a blood level of trace elements are close to their natural level over time after successful renal transplantation.