ZINC NUTRITIONAL STATUS IN PATIENTS WITH CHRONIC RENAL FAILURE, RESIDENTS IN SÃO PAULO, BRAZIL

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Abnormalities in zinc metabolism in patients with chronic renal failure have been reported, especially in those undergoing hemodialysis. However, more studies are necessary with patients under conservative treatment, before dialysis. Zinc is an essential trace element with the greatest interest in nephrology, since there is good evidences for the correlation between zinc deficiency and some of the abnormalities commonly observed in chronic renal failure (CRF). However, it remains unclear if hypozincemia in CRF represents a true total body zinc depletion or an exchange from extra-cellular to intracellular compartments. The purpose of this study was to determine zinc levels in plasma, erythrocytes and urine of patients not under dialysis, with chronic renal failure. Nineteen patients, with a mean age of 50.0 ± 11.8 years and serum creatinine of 2.6 ± 1.6 mg/dL were studied. The control group was made up of 18 healthy volunteers with mean age of 46.5 ± 6.9 years. Plasma and urine were previously diluted and determined by direct aspiration in atomic absorption spectrophotometer, whereas erythrocytes had to be lysed prior to the determination in the same apparatus. Zinc levels in erythrocytes were increased (46.0 ± 8.2 µg/gHb) whereas those in plasma were decreased (62.0 ± 11.1 µg/dL), when compared to normal controls, 40.0 ± 7.2 µg/gHb and 79 ± 15.5 µg/dL for erythrocyte and plasma, respectively ($p < 0.05$). Urinary zinc excretions are normal in both groups. Based on our findings, we can conclude that there is an abnormal zinc distribution in patients with chronic renal failure, just under conservative treatment. This shows that zinc is altered before dialysis and not because of it. At present, it is not clear if low concentrations of plasmatic zinc give an indication of zinc deficiency in uremia, since erythrocyte values were increased.