ZINC AND SELENIUM INTAKE IN NONDIALYSED PATIENTS WITH CHRONIC RENAL FAILURE

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Changes in zinc and selenium metabolisms are described in patients with chronic renal failure. The reasons for the deficiencies of the two elements are not clear; however, the decrease in zinc and selenium dietary intake may contribute to alter the metabolism of these minerals. The present study measured zinc and selenium content in the diets of 14 patients with renal failure. The mean age of the patients was 52.3 ± 12 years and the mean serum creatinine was 3.4 ± 1.7 mg/dL. The duplicate portion technique was used for sample collection. These samples were collected and prepared for analysis at USP. The trace elements were qualitatively identified in the diets by neutron activation analysis. Solutions prepared with each mineral and with both of them were used as primary element standards. Reference materials for total diet (NIST SRM 1548) and Citrus Leaves (NIST SRM 1572) were used for checking precision and accuracy of the method. 200 mg of reference materials and diet samples were weighted in pre-cleaned polyethylene bags, placed together with the synthetic standard into polyethylene vials and irradiated in the research nuclear reactor IEA-R1 of the IPEN/CNEN-SP. Samples and standards were submitted to an 8 hour long-term irradiation, at a thermal neutron flow of $10^{12}.n.cm^{-2}.s^{-1}$. Dietary fat, carbohydrate and protein were estimated by AOAC methods. Mean daily intakes were 4.4 ± 3.7 mg/day and 21 + 19.2 µg/day for Zn and Se, respectively. Zinc concentration and protein intake show a high correlation ($p < 0.001$ and r : 0.91). The mean energy intake was 21.2 ± 8.9 kcal/kg/day, with a mean protein intake of 0.8 ± 0.4 kg/day.