

EVALUATION OF ZINC AND BIOCHEMICAL PARAMETERS IN POST-MENOPAUSAL AND DIABETICS MODELS SUPPLEMENTED WITH ZINC

Ferreira, E.C.S.¹, Neto, F.P.F.¹, Ururahy, M.A.G.¹, Medeiros, A.C.², Almeida, M.G.¹
Rezende, A.A.¹

¹Departamento de Análises Clínicas e Toxicológicas, Universidade Federal do Rio Grande do Norte, Rio Grande do Norte, Brazil; ²Departamento de Cirurgia Experimental, Universidade Federal do Rio Grande do Norte, Rio Grande do Norte, Brazil;

Zinc plays an important role in bone growth and mineralization. The aim of the present study is to evaluate zinc supplementation effects on circulating bone markers in post- menopausal and diabetic experimental models, over 45 days. Female Wistar rats were divided in 5 groups: Control (C), ovariectomized (OVX), OVX with zinc (OVX-Zn), OVX and diabetic (OVX-D) and OVX-D with zinc (OVX-D-Zn). Zinc content was analyzed in fluid (urine) and in tissues (bone and liver) by flame atomic absorption spectrophotometry. Biochemical parameters were measured using Kits labtest analyzed in spectrophotometer RA 50 (Bayer). Liver zinc and urine zinc were significantly elevated ($p < 0,001$) in diabetic rats in comparison to control and ovariectomized, while bone zinc did not show alterations until 45 days. Serum alkaline phosphatase activity and urinary calcium increased significantly ($p < 0,001$) in OVX-D and OVX-D-Zn, when compared to control. Serum creatinine did not suffer alterations for all groups. However, serum albumin decreased significantly for diabetic groups. Those results support that diabetes is the main responsible for alterations in zinc metabolism and bone turnover. This last has been evidenced by hypercalciuria and increased serum alkaline phosphatase activity.

Keys words: diabetes, ovariectomy, zinc