The impact of the treatment with *Ginkgo biloba* extract in the expression of Bax, Bcl-2 proteins and in the bone mineral content of Wistar rats with glucocorticoid-induced-osteoporosis.

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Key-words: Bax; Bcl-2; Ginkgo biloba.

Introduction: The main pharmacological and clinical effects of the extract of *Ginkgo biloba* (EGb) are vascular protection and improvement in cognitive function. However, recently studies of *Ginkgo biloba* in osteoporosis have shown promising results.

Objective: Evaluate the effects of the EGb in the glucocorticoid-induced-osteoporosis (GIO) through the Bax and Bcl-2 expression by osteoblasts, the x-ray and bone density of the tibia.

Experimental protocol: Rats were divided into five groups: osteoporosis; EGb1 (28mg/Kg); EGb2 (56mg/Kg); alendronate (0.2mg/animal) and control. The treatments were conducted for 30 days (n=30). The Bax and Bcl-2 expression was evaluated in the mandibular alveolar bone. The tibias were radiographed to evaluate the x-ray and bone density. The control group was compared with the osteoporosis’s (Student’s t-test/Mann-Whitney test). The other groups were analyzed by ANOVA followed by Dunnett/Dunnett T3 (p<0.05).

Results: When compared the control group to the osteoporosis group (p<0.05). The first values refer to the control and the second to the osteoporosis: Bax (16.65±9.21; 41.75±9.72) and x-ray density (0.42±0.06; 0.53±0.07) increased; Bcl-2 (30.53±7.81; 13.10±2.54) and the bone density (1.36±0.05; 1.24±0.05) reduced. When compared to the osteoporosis group (13.10±2.54) (p<0.05): alendronate (24.25±2.34), EGb1 (21.41±4.44) and EGb2 (27.89±3.68) increased the Bcl-2 expression. The EGb1 (16.08±3.00) and EGb2 (20.62±8.19)) reduced the Bax expression when compared to the osteoporosis group (41.75±9.72) (p<0.05). In the same way that the EGb1(0.42±0.06) and EGb2 (0.34±0.05) reduced the x-ray density compared to the osteoporosis group (0.53±0.07).

Conclusions: The EGb improved the Bcl-2 and reduced the Bax expression by osteoblasts in the alveolar bone, and improved the mineral content in the tibia of rats with GIO.

Financing: FAPEMIG (APQ-00154-11; 173-172/08).