

Oral presentation

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7.6 Long-term treatment with glucocorticoids and low bone mass: a longitudinal study in 266 children and adolescents

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Background

Few longitudinal data are available on bone mass changes in children and adolescents treated with glucocorticoids (GCs). The aim of our study is to verify their long-term effects on bone mass.

Materials and methods

266 patients (3–20 years) on long-term treatment with GCs for chronic diseases were followed with evaluation of bone mineral density (BMD) for at least 3 years (3 – 14 years).

BMD was measured with DXA at lumbar spine and on total body and expressed as the Z-score. BMAD was calculated.

Results

GCs had a major effect on trabecular bone independently by the disease and age of patients. This effect is dose related: cumulative dose GCs < 10 g = decrease of 23%; 10 – 30 g = -40%; > 30 g = -68%. A significant correlation was found between spine Z-score vs cumulative GCs ($p < 0.001$).

Bone loss of spine was higher during the first year of GCs and continues during time at a lower degree (16% the first year, 6% second-fifth year, 3.5% over the fifth year).

GCs influenced BMD differently in relation to age at start of therapy and the disease.

83 patients had at least 1 fragility fractures and 33 had more than 1 fracture. A total of 161 fragility fractures occurred in the group.

Conclusion

GCs induce bone loss and fractures in the young and alter the bone accrual. The relationship between BMD and cumulative dose of steroids clearly underline the absolute need to use the minimum effective dose of GCs.