Longterm lamotrigine therapy and bone health

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Previous study data reported that CYP450 inducing antiepileptic drugs alter the activity of the enzymes responsible for vitamin D metabolism, leading to reduced calcium absorption, increased bone resorption and accelerated bone mass loss. Nevertheless, data on non-enzyme inducing antiepileptics are insufficient and less is known about the possible mechanisms they can alter the bone metabolism. Objectives: Therefore, we decided to measure serum levels of 25-OHD and osteocalcin (OCLN) in normal controls (n=30) and in epilepsy patients taking lamotrigin (LTG) (n = 50) in monotherapy for a period of at least twelve months. For each participant, mineral density (BMD) was evaluated by dual-energy X-ray absorptiometry method. Results: The average value of vitamin D in serum was significantly lower in LTG group than in control group (Vit D 17.97±9.15 vs. 32.03 ±6.99, p=0, 0001). The average value of osteocalcin in serum was higher in LTG group than in control group (27.87±28.45 vs. 19.64±6,54, p=0,004) but this difference was not statistically significant. BMD value in LTG group was lower than in control group (T. score LTG: 0.37± 1.02 vs. T. score control: 0.73± 1.13, p= 0.031; Z score LTG: 0,38±0,96 vs. Z. score control: 0.55 ±0.79, p=0,015) but this difference was not statistically significant. Conclusion: Patients on long-term therapy with non-enzyme-inducing antiepileptic agents could benefit of routine measurement of biochemical markers of bone turnover, and BMD measurement as part of osteoporosis investigation.

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