

Bone metabolism in healthy ambulatory control pre-menopausal women and in epileptics on anti-convulsant drugs

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Abstract:

Background: Long term anti-epileptic drug use causes multiple abnormalities in calcium and bone metabolism that have been documented in both institutionalized and ambulatory patients.

Objective: To assess bone metabolism in ambulatory females of reproductive age, on antiepileptic drugs. Design: Cross sectional comparative study. Subjects: Ambulatory females in reproductive age group with epilepsy and on regular follow up were compared to healthy females of similar ages not on any treatment. Results: The mean duration of treatment for epilepsy was eight years (± 6.3). Majority of the patients were on enzyme inducing drugs like phenobarbital, phenytoin, carbamazepine and valproate, either alone or in combination with non-enzyme inducers like lamotrigine (98.2%). There was a significantly lower mean serum calcium and a higher alkaline phosphatase level among the patients ($P=0.002$ and 0.0001 respectively) than among the comparators. The urinary marker of bone loss (mean urine calcium excretion) was also significantly raised among the patients ($P=0.003$). The mean lumbar BMDT-score results were not significantly different in the two groups. Conclusions: Long-term anti-epileptic drug use significantly affects biochemical parameters of bone metabolism. These effects on bone biochemistry markers were not reflected in lumbar spine BMD in this study.