

Serum Vitamin D and Carboxy-Terminal Telopeptide Type I Collagen Levels: As Markers for Bone Health Affection in Patients Treated with Different Antiepileptic Drugs

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Abstract : Epilepsy is a common neurological disorder affecting all age groups. It is one of the world's most prevalent non-communicable diseases. Increased evidence suggesting that long term usage of anti-epileptic drugs can have adverse effects on bone mineralization and bone molding .Aiming to study these effects and to give guide lines to support bone health through early intervention. From Neurology Out-Patient Clinic kaser Elaini University Hospital, 60 Patients were enrolled, 40 patients on antiepileptic drugs for at least two years and 20 controls matched with age and sex, epileptic but before starting treatment both chosen under specific criteria. Patients were divided into four groups, three groups with monotherapy treated with either Phynetoin, Valporic acid or Carbamazipine and fourth group treated with both Valporic acid and Carbamazipine. Estimation of serum Carboxy-Terminal Telopeptide of Type I- Collagen(ICTP) bone resorption marker, serum 25(OH)vit D3, calcium ,magnesium and phosphorus were done .Results showed that all patients on AED had significant low levels of 25(OH) vit D3 ($p<0.001$) ,with significant elevation of ICTP ($P<0.05$) versus controls. In group treated with Phynotoin highly significant elevation of (ICTP) marker and decrease of both serum 25(OH) vit D3 ($P<0, 0001$) and serum calcium($P<0.05$)versus control. Double drug group showed significant decrease of serum 25(OH) vit D3 ($P<0.0001$) and decrease in Phosphorus ($P<0.05$) versus controls. Serum magnesium showed no significant differences between studied groups. We concluded that Anti-epileptic drugs appears to be an aggravating factor on bone mineralization ,so therapeutically it can be worth wile to supplement calcium and vitamin D even before initiation of antiepileptic therapy. ICTP marker can be used to evaluate change in bone resorption before and during AED therapy.

Keywords : antiepileptic drugs, bone minerals, carboxy teminal telopeptidetype-1-collagen bone resorption marker,vitamin D

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