

## SERUM 25-HYDROXYVITAMIN D LEVEL AND HEIGHT VELOCITY IN EPILEPTIC CHILDREN WITH LONG-TERM ANTI-EPILEPTIC DRUGS

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### Abstract

**Background :** Administration of long-term anti-epileptic drugs (AED) requires monitoring of side effects, one of them is a decreasing of serum vitamin D level. Vitamin D has significant roles in linear bone growth. There are conflicting results concerning lower serum vitamin D level and height velocity in epileptic children because of AED administration.

**Purpose :** This study aimed to correlate the serum vitamin D level with height velocity in epileptic children. The study compare with healthy children also.

**Methods :** Cohort study was conducted in the pediatric neurology clinic of Soetomo general academic hospital from August 2018 to July 2019. Epileptic children with long-term AED for over 6 months and ages ranging 2-18 years were included. Peripheral serum of 25-hydroxyvitamin D level were measured using enzyme-linked fluorescence assay method. Height velocity were measured in 6 months range and converted to z score. The 25-hydroxyvitamin D level were correlated with height velocity by using pearson test (95% confidence interval). Epileptic and healthy children groups were compared also by using anova and t test. All statistical analyses were performed with SPSS version 21 for Windows.

**Results :** In the study period, 44 children were enrolled. The mean of serum 25-hydroxyvitamin D level in epileptic and healthy children groups were 21.5 (SD 8.41) ng/ml and 34.3 (SD 10,09) ng/ml. The mean of height velocity in epileptic and healthy children groups were -0.35 (SD 1.733) and 0.59 (SD1.384). There was a significant difference of serum 25-hydroxyvitamin D and height velocity both groups ( $p < 0.05$ ). There was significant correlation between serum 25-hydroxyvitamin D and height velocity in epileptic group ( $p < 0.05$ ).

**Conclusion :** Epileptic children with long-term AED have lower level of serum 25-hydroxyvitamin D and height velocity than normal population.

**Keywords :** *Epilepsy, anti-epileptic drugs, 25-hydroxyvitamin D, height velocity.*